

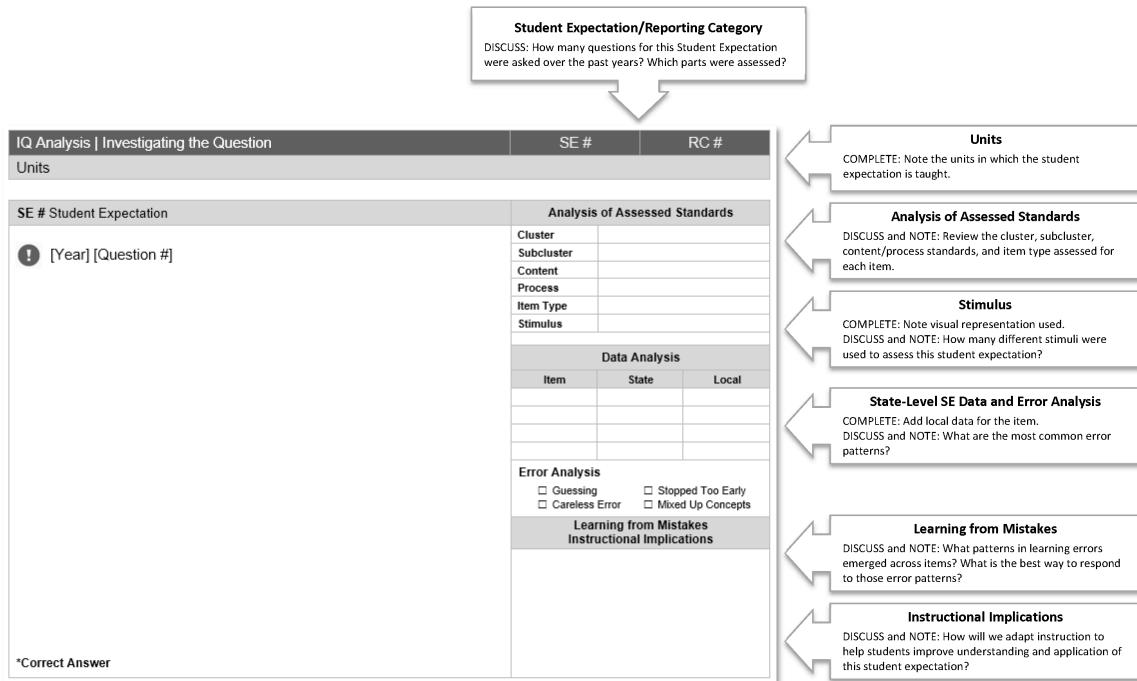
# **2015-2021 Released Tests**

## Aligned to the Standards

CONTENT BUILDER FOR THE PLC

# **Math**

# **Grade 3**



In conjunction with the IQ analysis tool, the lead4ward field guides can be a helpful resource for understanding error patterns and instructional implications.

[Learn more](#)

# Representation and Comparison of Whole Numbers

**3.2 Number and operations.** The student applies mathematical process standards to represent and compare whole numbers and understand relationships related to place value.

|  |  |  |
|--|--|--|
| <p><b>3.2(A)</b> compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate</p> | <b>Analysis of Assessed Standards</b>                              |  |
| 2021 – Q5  | <b>Cluster</b>   | Representation and Comparison of Whole Numbers |
| 5 An expression is shown.  | <b>Subcluster</b>  | Representation of Whole Numbers                |
| $70 + 2 + 900$   | <b>Content</b>   | Readiness                                      |
| What number is equivalent to this expression?  | <b>Process</b>   |  |
| Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.  | <b>Stimulus</b>  |  |
|  | <b>Data Analysis</b>   |  |
|  | <b>Item</b>  | <b>State</b>                                   |
|  | 972  | 81*  |
|  |  | 19   |
|  |  |  |
|  |  |  |
|  | <b>Error Analysis</b>  |  |
|  | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts     |
|  | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early     |
|  | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |
| *Correct Answer (972)  |  |  |

| <p><b>3.2(A)</b> compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate</p> <p>2019 – Q4</p> <p>The expanded form of a number is shown.</p> $90,000 + 200 + 40 + 1$ <p>What is the standard form of this number?</p> <p><b>F</b> 9,241<br/> <b>G</b> 92,041<br/> <b>H</b> 90,241<br/> <b>J</b> 90,421</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">Analysis of Assessed Standards</th></tr> </thead> <tbody> <tr> <td style="width: 15%;">Cluster</td><td colspan="2">Representation and Comparison of Whole Numbers</td></tr> <tr> <td>Subcluster</td><td colspan="2">Representation of Whole Numbers</td></tr> <tr> <td>Content</td><td colspan="2">Readiness</td></tr> <tr> <td>Process</td><td colspan="2"></td></tr> <tr> <td>Stimulus</td><td colspan="2"></td></tr> <tr> <td colspan="3" style="text-align: center;">Data Analysis</td></tr> <tr> <td style="width: 15%;">Item</td><td style="width: 15%;">State</td><td style="width: 15%;">Local</td></tr> <tr> <td>F</td><td>6</td><td></td></tr> <tr> <td>G</td><td>2</td><td></td></tr> <tr> <td>H*</td><td>90</td><td></td></tr> <tr> <td>J</td><td>1</td><td></td></tr> <tr> <td colspan="3" style="text-align: center;">Error Analysis</td></tr> <tr> <td colspan="3"> <input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early         </td></tr> <tr> <td colspan="3" style="text-align: center;">Learning from Mistakes<br/>Instructional Implications</td></tr> </tbody> </table> | Analysis of Assessed Standards |  |  | Cluster | Representation and Comparison of Whole Numbers |  | Subcluster | Representation of Whole Numbers |  | Content | Readiness |  | Process |  |  | Stimulus |  |  | Data Analysis |  |  | Item | State | Local | F | 6 |  | G | 2 |  | H* | 90 |  | J | 1 |  | Error Analysis |  |  | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |  | Learning from Mistakes<br>Instructional Implications |  |  |
|--|---|--------------------------------|--|--|---------|--|--|------------|---------------------------------|--|---------|-----------|--|---------|--|--|----------|--|--|---------------|--|--|------|-------|-------|---|---|--|---|---|--|----|----|--|---|---|--|----------------|--|--|--|--|--|--|--|--|
| Analysis of Assessed Standards   |   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| Cluster  | Representation and Comparison of Whole Numbers  |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| Subcluster   | Representation of Whole Numbers   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| Content  | Readiness   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| Process  |   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| Stimulus   |   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| Data Analysis  |   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| Item   | State   | Local                          |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| F  | 6   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| G  | 2   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| H*   | 90  |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| J  | 1   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| Error Analysis   |   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early   |   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |
| Learning from Mistakes<br>Instructional Implications   |   |                                |  |  |         |  |  |            |                                 |  |         |           |  |         |  |  |          |  |  |               |  |  |      |       |       |   |   |  |   |   |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |

\*Correct Answer (H)

|  |  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
|--|--|-------------------------------|--|--|---------------------------------|----------------|-----------|----------------|----|-----------------|--|---|----|--|---|----|--|
| <p><b>3.2(A)</b> compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate</p> | <p><b>Analysis of Assessed Standards</b></p>   |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <p>! 2019 – Q27</p>  | <table border="1"> <tr> <td><b>Cluster</b></td><td>Representation and Comparison of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Representation of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> | <b>Cluster</b>                | Representation and Comparison of Whole Numbers                               | <b>Subcluster</b>  | Representation of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> |    | <b>Stimulus</b> |  |   |    |  |   |    |  |
| <b>Cluster</b>   | Representation and Comparison of Whole Numbers   |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <b>Subcluster</b>  | Representation of Whole Numbers  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <b>Content</b>   | Readiness  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <b>Process</b>   |  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <b>Stimulus</b>  |  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <p>Which answer choice does NOT describe the number 7,140?</p>   | <table border="1"> <tr> <td><b>Data Analysis</b></td></tr> <tr> <td><b>Item</b></td><td><b>State</b></td><td><b>Local</b></td></tr> <tr> <td>A</td><td>34</td><td></td></tr> <tr> <td>B*</td><td>32</td><td></td></tr> <tr> <td>C</td><td>14</td><td></td></tr> <tr> <td>D</td><td>20</td><td></td></tr> </table>                            | <b>Data Analysis</b>          | <b>Item</b>  | <b>State</b>   | <b>Local</b>                    | A              | 34        |                | B* | 32              |  | C | 14 |  | D | 20 |  |
| <b>Data Analysis</b>   |  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <b>Item</b>  | <b>State</b>   | <b>Local</b>                  |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| A  | 34   |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| B*   | 32   |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| C  | 14   |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| D  | 20   |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <p><b>A</b> The sum of seven thousands and fourteen tens</p>   | <table border="1"> <tr> <td><b>Error Analysis</b></td></tr> <tr> <td><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</td></tr> </table>   | <b>Error Analysis</b>         | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <b>Error Analysis</b>  |  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts   |  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early   |  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <p><b>B</b> The sum of seven thousands, one hundred, and forty tens</p>  | <table border="1"> <tr> <td><b>Learning from Mistakes</b></td></tr> <tr> <td><b>Instructional Implications</b></td></tr> </table>  | <b>Learning from Mistakes</b> | <b>Instructional Implications</b>  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <b>Learning from Mistakes</b>  |  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <b>Instructional Implications</b>  |  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <p><b>C</b> The sum of seven thousands, one hundred, and four tens</p>   |  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |
| <p><b>D</b> The sum of seven thousands, one hundred, and forty ones</p>  |  |                               |  |  |                                 |                |           |                |    |                 |  |   |    |  |   |    |  |

\*Correct Answer (B)

| <p><b>3.2(A)</b> compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate</p> <p>2018 – Q21</p> <p><b>21</b> The expanded notation of a number is shown.</p> $(9 \times 10,000) + (4 \times 100) + (1 \times 10)$ <p>What is the standard form of this number?</p> <p><b>A</b> 9,410<br/> <b>B</b> 94,010<br/> <b>C</b> 90,401<br/> <b>D</b> 90,410</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center; background-color: #cccccc;">Analysis of Assessed Standards</th></tr> </thead> <tbody> <tr> <td style="width: 15%;"><b>Cluster</b></td><td>Representation and Comparison of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Representation of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> <tr> <td colspan="2" style="text-align: center; background-color: #cccccc;">Data Analysis</td></tr> <tr> <td style="width: 15%;"><b>Item</b></td><td><b>State</b></td><td><b>Local</b></td></tr> <tr> <td>A</td><td>10</td><td></td></tr> <tr> <td>B</td><td>6</td><td></td></tr> <tr> <td>C</td><td>7</td><td></td></tr> <tr> <td>D*</td><td>76</td><td></td></tr> <tr> <td colspan="3" style="text-align: center; background-color: #cccccc;"><b>Error Analysis</b></td></tr> <tr> <td colspan="3"> <input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early         </td></tr> <tr> <td colspan="3" style="text-align: center; background-color: #cccccc;"><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></td></tr> </tbody> </table> | Analysis of Assessed Standards |  | <b>Cluster</b> | Representation and Comparison of Whole Numbers | <b>Subcluster</b> | Representation of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Data Analysis |  | <b>Item</b> | <b>State</b> | <b>Local</b> | A | 10 |  | B | 6 |  | C | 7 |  | D* | 76 |  | <b>Error Analysis</b> |  |  | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |  | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |  |
|--|---|--------------------------------|--|----------------|--|-------------------|---------------------------------|----------------|-----------|----------------|--|-----------------|--|---------------|--|-------------|--------------|--------------|---|----|--|---|---|--|---|---|--|----|----|--|-----------------------|--|--|--|--|--|--|--|--|
| Analysis of Assessed Standards   |   |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| <b>Cluster</b>   | Representation and Comparison of Whole Numbers  |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| <b>Subcluster</b>  | Representation of Whole Numbers   |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| <b>Content</b>   | Readiness   |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| <b>Process</b>   |   |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| <b>Stimulus</b>  |   |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| Data Analysis  |   |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| <b>Item</b>  | <b>State</b>  | <b>Local</b>                   |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| A  | 10  |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| B  | 6   |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| C  | 7   |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| D*   | 76  |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| <b>Error Analysis</b>  |   |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early   |   |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |   |                                |  |                |  |                   |                                 |                |           |                |  |                 |  |               |  |             |              |              |   |    |  |   |   |  |   |   |  |    |    |  |                       |  |  |  |  |  |  |  |  |

\*Correct Answer (D)

|   |   |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
|---|---|-----------------------|--|-----------------------------------|--|---|--|-------------------------------|---|-----------------------------------|----|----|--|---|---|--|
| <p><b>3.2(A)</b> compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate</p>  | <p><b>Analysis of Assessed Standards</b></p>  |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <p>2017 – Q16</p>   | <table border="1"> <tr> <td><b>Cluster</b></td><td>Representation and Comparison of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Representation of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table>  | <b>Cluster</b>        | Representation and Comparison of Whole Numbers | <b>Subcluster</b>                 | Representation of Whole Numbers            | <b>Content</b>                          | Readiness                                  | <b>Process</b>                |   | <b>Stimulus</b>                   |    |    |  |   |   |  |
| <b>Cluster</b>  | Representation and Comparison of Whole Numbers  |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <b>Subcluster</b>   | Representation of Whole Numbers   |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <b>Content</b>  | Readiness   |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <b>Process</b>  |   |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <b>Stimulus</b>   |   |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <p><b>16</b> Which of these describes the number 35,824?</p>  | <table border="1"> <tr> <td><b>Data Analysis</b></td><td></td></tr> </table>  | <b>Data Analysis</b>  |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <b>Data Analysis</b>  |   |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <p><b>F</b> The sum of three thousands, five thousands, eight hundreds, two tens, and four ones</p> <p><b>G</b> The sum of thirty-five hundreds, eight tens, and twenty-four ones</p> <p><b>H</b> The sum of three ten thousands, five thousands, eight hundreds, two tens, and four ones</p> <p><b>J</b> The sum of five ten thousands, three thousands, eight hundreds, two tens, and four ones</p> | <table border="1"> <tr> <td><b>Item</b></td><td><b>State</b></td><td><b>Local</b></td></tr> <tr> <td>F</td><td>19</td><td></td></tr> <tr> <td>G</td><td>6</td><td></td></tr> <tr> <td>H*</td><td>71</td><td></td></tr> <tr> <td>J</td><td>4</td><td></td></tr> </table>   | <b>Item</b>           | <b>State</b>                                   | <b>Local</b>                      | F  | 19                                      |  | G                             | 6 |                                   | H* | 71 |  | J | 4 |  |
| <b>Item</b>   | <b>State</b>  | <b>Local</b>          |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| F   | 19  |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| G   | 6   |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| H*  | 71  |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| J   | 4   |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <p>*Correct Answer (H)</p>  | <table border="1"> <tr> <td><b>Error Analysis</b></td><td></td></tr> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> <tr> <td align="center" colspan="2"><b>Learning from Mistakes</b></td></tr> <tr> <td align="center" colspan="2"><b>Instructional Implications</b></td></tr> </table> | <b>Error Analysis</b> |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early | <b>Learning from Mistakes</b> |   | <b>Instructional Implications</b> |    |    |  |   |   |  |
| <b>Error Analysis</b>   |   |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts  |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early  |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <b>Learning from Mistakes</b>   |   |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |
| <b>Instructional Implications</b>   |   |                       |  |                                   |  |   |  |                               |   |                                   |    |    |  |   |   |  |

|  |  |              |  |
|--|--|--------------|--|
| <p><b>3.2(A)</b> compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate</p> <p>2016 – Q13</p> <p><b>13</b> Which expression represents the number 867?</p> <p><b>A</b> <math>80 + 60 + 70</math></p> <p><b>B</b> <math>800 + 6 + 7</math></p> <p><b>C</b> <math>500 + 300 + 50 + 10 + 7</math></p> <p><b>D</b> <math>500 + 300 + 60 + 70</math></p> | <b>Analysis of Assessed Standards</b>          |              |  |
| <b>Cluster</b>   | Representation and Comparison of Whole Numbers |              |  |
| <b>Subcluster</b>  | Representation of Whole Numbers                |              |  |
| <b>Content</b>   | Readiness                                      |              |  |
| <b>Process</b>   | 3.1(B), 3.1(F)                                 |              |  |
| <b>Stimulus</b>  |  |              |  |
| <b>Data Analysis</b>   |  |              |  |
| <b>Item</b>  | <b>State</b>                                   | <b>Local</b> |  |
| A  | 6  |              |  |
| B  | 22   |              |  |
| C*   | 67   |              |  |
| D  | 5  |              |  |
| <b>Error Analysis</b>  |  |              |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts     |              |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early     |              |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |  |              |  |
|  |  |              |  |

\*Correct Answer (C)

**3.2(A)** compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate

#### Analysis of Assessed Standards

2016 – Q27

**27** The sum of 8 ten thousands, 4 hundreds, and 9 tens can be expressed as what number in standard form?

- A** 80,490
- B** 8,490
- C** 849
- D** 80,049

|                   |  |
|-------------------|--|
| <b>Cluster</b>    | Representation and Comparison of Whole Numbers |
| <b>Subcluster</b> | Representation of Whole Numbers                |
| <b>Content</b>    | Readiness                                      |
| <b>Process</b>    | 3.1(B), 3.1(D), 3.1(F)                         |
| <b>Stimulus</b>   |  |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| A*   | 81    |       |
| B    | 11    |       |
| C    | 4     |       |
| D    | 3     |       |

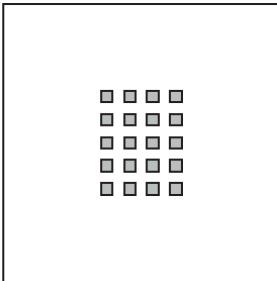
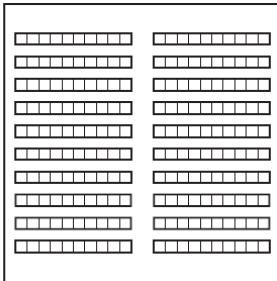
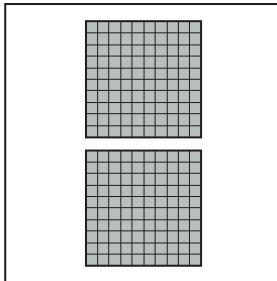
#### Error Analysis

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

\*Correct Answer (A)

| <p><b>3.2(A)</b> compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate</p> | <p><b>Analysis of Assessed Standards</b></p>  |                |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |
|--|---|----------------|--|-------------------|---------------------------------|----------------|-----------|----------------|----------------|-----------------|---|----|--|----|----|--|
| <p>! 2015 – Q1 Sample</p> <p><b>1</b> The expanded notation of a number is shown.</p> $(3 \times 10,000) + (8 \times 100) + (2 \times 10) + (6 \times 1)$ <p>What is this number written in standard form?</p>   | <table border="1"> <tr> <td><b>Cluster</b></td><td>Representation and Comparison of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Representation of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td>3.1(B), 3.1(F)</td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table>  | <b>Cluster</b> | Representation and Comparison of Whole Numbers | <b>Subcluster</b> | Representation of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> | 3.1(B), 3.1(F) | <b>Stimulus</b> |   |    |  |    |    |  |
| <b>Cluster</b>   | Representation and Comparison of Whole Numbers  |                |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |
| <b>Subcluster</b>  | Representation of Whole Numbers   |                |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |
| <b>Content</b>   | Readiness   |                |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |
| <b>Process</b>   | 3.1(B), 3.1(F)  |                |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |
| <b>Stimulus</b>  |   |                |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |
| <p>A 38,026<br/>B 38,260<br/>C 3,826<br/>D 30,826</p>  | <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>A</td><td>NA</td><td></td></tr> <tr> <td>B</td><td>NA</td><td></td></tr> <tr> <td>C</td><td>NA</td><td></td></tr> <tr> <td>D*</td><td>NA</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p> | Item           | State  | Local             | A                               | NA             |           | B              | NA             |                 | C | NA |  | D* | NA |  |
| Item   | State   | Local          |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |
| A  | NA  |                |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |
| B  | NA  |                |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |
| C  | NA  |                |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |
| D*   | NA  |                |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |
| <p>*Correct Answer (D)</p>   | <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p>  |                |  |                   |                                 |                |           |                |                |                 |   |    |  |    |    |  |

| 3.2(B) describe the mathematical relationships found in the base-10 place value system through the hundred thousands place  |  | Analysis of Assessed Standards             |  |  |  |
|---|--|--|--|--|--|
| 2018 – Q4   |  | <b>Cluster</b>                             | Representation and Comparison of Whole Numbers |  |  |
| <b>4</b> Which of these models represent the same number?   |  | <b>Subcluster</b>                          | Representation of Whole Numbers                |  |  |
| Model X   | Model Y  | <b>Content</b>                             | Supporting                                     |  |  |
|    |   | <b>Process</b>                             |  |  |  |
| Model Z   |  | <b>Stimulus</b>                            |  |  |  |
| <b>F</b> Model X and Model Y, because 20 ones is equivalent to 20 tens.<br><b>G</b> Model X and Model Z, because 20 ones is equivalent to 2 hundreds.<br><b>H</b> Model Y and Model Z, because 20 tens is equivalent to 2 hundreds.<br><b>J</b> None of these |  | <b>Data Analysis</b>                       |  |  |  |
|   |  | <b>Item</b>                                | <b>State</b>                                   |  |  |
|   |  | F  | 13   |  |  |
|   |  | G  | 6  |  |  |
|   |  | H*   | 71   |  |  |
|   |  | J  | 10   |  |  |
| <b>Error Analysis</b>   |  | <b>Local</b>                               |  |  |  |
| <input type="checkbox"/> Guessing   |  | <input type="checkbox"/> Mixed Up Concepts |  |  |  |
| <input type="checkbox"/> Careless Error   |  | <input type="checkbox"/> Stopped Too Early |  |  |  |
| <b>Learning from Mistakes</b>   |  |  |  |  |  |
| <b>Instructional Implications</b>   |  |  |  |  |  |
| *Correct Answer (H)   |  |  |  |  |  |

|   |   |  |              |
|---|---|--|--------------|
| <b>3.2(B)</b> describe the mathematical relationships found in the base-10 place value system through the hundred thousands place   | <b>Analysis of Assessed Standards</b>   |  |              |
| <b>!</b> 2016 – Q45   | <b>Cluster</b>  | Representation and Comparison of Whole Numbers |              |
| <b>45</b> What is the relationship between the thousands place and the hundreds place in the number shown?  | <b>Subcluster</b>   | Representation of Whole Numbers                |              |
| 971,111   | <b>Content</b>  | Supporting                                     |              |
| <b>A</b> The thousands place is two times greater than the hundreds place.<br><b>B</b> The thousands place is ten times greater than the hundreds place.<br><b>C</b> The thousands place is seven times greater than the hundreds place.<br><b>D</b> The thousands place is zero times greater than the hundreds place. | <b>Process</b>  | 3.1(B), 3.1(G)                                 |              |
|   | <b>Stimulus</b>   |  |              |
|   | <b>Data Analysis</b>  |  |              |
|   | <b>Item</b>   | <b>State</b>                                   | <b>Local</b> |
|   | A   | 16   |              |
|   | B*  | 46   |              |
|   | C   | 12   |              |
|   | D   | 25   |              |
| *Correct Answer (B)   | <b>Error Analysis</b><br><input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |              |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |  |              |

|   |   |  |              |
|---|---|--|--------------|
| <b>3.2(B)</b> describe the mathematical relationships found in the base-10 place value system through the hundred thousands place   | <b>Analysis of Assessed Standards</b>   |  |              |
| 2015 – Q2 Sample  | <b>Cluster</b>  | Representation and Comparison of Whole Numbers |              |
| <b>2</b> Which statement about the number 5,555 is true?  | <b>Subcluster</b>   | Representation of Whole Numbers                |              |
| <b>A</b> There is a 5 in the tens place, so 5 times 10 equals 50.<br><b>B</b> There is a 5 in the hundreds place, so 5 times 100 equals 50.<br><b>C</b> There is a 5 in the tens place, so 5 times 10 equals 500.<br><b>D</b> There is a 5 in the thousands place, so 5 times 1,000 equals 500. | <b>Content</b>  | Supporting                                     |              |
|   | <b>Process</b>  | 3.1(B), 3.1(G)                                 |              |
|   | <b>Stimulus</b>   |  |              |
|   | <b>Data Analysis</b>  |  |              |
|   | <b>Item</b>   | <b>State</b>                                   | <b>Local</b> |
|   | A*  | NA   |              |
|   | B   | NA   |              |
|   | C   | NA   |              |
|   | D   | NA   |              |
| *Correct Answer (A)   | <b>Error Analysis</b><br><input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |              |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |  |              |



| <b>3.2(D)</b> compare and order whole numbers up to 100,000 and represent comparisons using the symbols >, <, or = |  | <b>Analysis of Assessed Standards</b> |  |
|--|--|---------------------------------------|--|
| 2021 – Q32   |  | <b>Cluster</b>                        | Representation and Comparison of Whole Numbers |
|  |  | <b>Subcluster</b>                     | Comparison of Whole Numbers                    |
|  |  | <b>Content</b>                        | Readiness                                      |
|  |  | <b>Process</b>                        |  |
|  |  | <b>Stimulus</b>                       |  |
| <b>Data Analysis</b>   |  |                                       |  |
| Item   | State                                      | Local                                 |  |
| F  | 8  |                                       |  |
| G*   | 80   |                                       |  |
| H  | 6  |                                       |  |
| J  | 7  |                                       |  |
| <b>Error Analysis</b>  |  |                                       |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts |                                       |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early |                                       |  |
| <b>Learning from Mistakes<br/>Instructional Implications</b>   |  |                                       |  |
|  |  |                                       |  |

\*Correct Answer (G)

|  |   |  |              |
|--|---|--|--------------|
| <b>3.2(D)</b> compare and order whole numbers up to 100,000 and represent comparisons using the symbols >, <, or = | <b>Analysis of Assessed Standards</b>   |  |              |
| 2019 – Q1  | <b>Cluster</b>  | Representation and Comparison of Whole Numbers |              |
| Which list shows the numbers in order from greatest to least value?  | <b>Subcluster</b>   | Comparison of Whole Numbers                    |              |
| <b>A</b> 38,945 9,052 9,181  | <b>Content</b>  | Readiness                                      |              |
| <b>B</b> 6,912 29,013 34,987   | <b>Process</b>  |  |              |
| <b>C</b> 58,702 50,716 581   | <b>Stimulus</b>   |  |              |
| <b>D</b> 6,092 60,019 5,005  | <b>Data Analysis</b>  |  |              |
|  | <b>Item</b>   | <b>State</b>                                   | <b>Local</b> |
|  | A   | 5  |              |
|  | B   | 4  |              |
|  | C*  | 86   |              |
|  | D   | 4  |              |
| *Correct Answer (C)  | <b>Error Analysis</b><br><input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |              |
|  | <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |  |              |

**3.2(D)** compare and order whole numbers up to 100,000 and represent comparisons using the symbols  $>$ ,  $<$ , or  $=$

2018 – Q31

**31** The table shows the weights of four elephants.

Elephant Weights

| Elephant | Weight (pounds) |
|----------|-----------------|
| R        | 12,345          |
| S        | 13,960          |
| T        | 12,509          |
| U        | 11,960          |

Which comparison of these weights is true?

- A** The weight of Elephant R  $<$  the weight of Elephant T
- B** The weight of Elephant U  $>$  the weight of Elephant T
- C** The weight of Elephant S  $=$  the weight of Elephant U
- D** The weight of Elephant S  $<$  the weight of Elephant T

\*Correct Answer (A)

**Analysis of Assessed Standards**

|                   |  |
|-------------------|--|
| <b>Cluster</b>    | Representation and Comparison of Whole Numbers |
| <b>Subcluster</b> | Comparison of Whole Numbers                    |
| <b>Content</b>    | Readiness                                      |
| <b>Process</b>    |  |
| <b>Stimulus</b>   |  |

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| A*   | 73    |       |
| B    | 7     |       |
| C    | 7     |       |
| D    | 11    |       |

**Error Analysis**

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

**Learning from Mistakes  
Instructional Implications**

| <p><b>3.2(D)</b> compare and order whole numbers up to 100,000 and represent comparisons using the symbols <math>&gt;</math>, <math>&lt;</math>, or <math>=</math></p> <p>2017 – Q13</p> <p><b>13</b> The table shows the land areas of some states.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2">Land Areas</th> </tr> <tr> <th>State</th> <th>Area<br/>(square miles)</th> </tr> </thead> <tbody> <tr> <td>Arkansas</td> <td>52,068</td> </tr> <tr> <td>Louisiana</td> <td>43,204</td> </tr> <tr> <td>Alabama</td> <td>50,744</td> </tr> <tr> <td>Oklahoma</td> <td>68,667</td> </tr> <tr> <td>Mississippi</td> <td>46,907</td> </tr> </tbody> </table> <p>Which comparison of two land areas is NOT true?</p> <p><b>A</b> The land area of Alabama <math>&gt;</math> the land area of Mississippi</p> <p><b>B</b> The land area of Arkansas <math>&lt;</math> the land area of Alabama</p> <p><b>C</b> The land area of Oklahoma <math>&gt;</math> the land area of Louisiana</p> <p><b>D</b> The land area of Louisiana <math>&lt;</math> the land area of Mississippi</p> | Land Areas                                     |       | State | Area<br>(square miles) | Arkansas | 52,068 | Louisiana | 43,204 | Alabama | 50,744 | Oklahoma | 68,667 | Mississippi | 46,907 | <p><b>Analysis of Assessed Standards</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td><b>Cluster</b></td><td>Representation and Comparison of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Comparison of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Item</th><th>State</th><th>Local</th></tr> <tr> <td>A</td><td>9</td><td></td></tr> <tr> <td>B*</td><td>72</td><td></td></tr> <tr> <td>C</td><td>9</td><td></td></tr> <tr> <td>D</td><td>10</td><td></td></tr> </table> <p><b>Error Analysis</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Representation and Comparison of Whole Numbers | <b>Subcluster</b> | Comparison of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | A | 9 |  | B* | 72 |  | C | 9 |  | D | 10 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|---|--|-------|-------|------------------------|----------|--------|-----------|--------|---------|--------|----------|--------|-------------|--------|---|----------------|--|-------------------|-----------------------------|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|---|---|--|----|----|--|---|---|--|---|----|--|-----------------------------------|--|---|--|
| Land Areas  |  |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| State   | Area<br>(square miles)                         |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| Arkansas  | 52,068   |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| Louisiana   | 43,204   |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| Alabama   | 50,744   |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| Oklahoma  | 68,667   |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| Mississippi   | 46,907   |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Cluster</b>  | Representation and Comparison of Whole Numbers |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Subcluster</b>   | Comparison of Whole Numbers                    |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Content</b>  | Readiness                                      |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Process</b>  |  |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Stimulus</b>   |  |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| Item  | State  | Local |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| A   | 9  |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| B*  | 72   |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| C   | 9  |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| D   | 10   |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts     |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early     |       |       |                        |          |        |           |        |         |        |          |        |             |        |   |                |  |                   |                             |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |

\*Correct Answer (B)

| <p><b>3.2(D)</b> compare and order whole numbers up to 100,000 and represent comparisons using the symbols &gt;, &lt;, or =</p> <p>2017 – Q27</p> <p><b>27</b> The list shows three clues about a number.</p> <ul style="list-style-type: none"> <li>The number is less than 6,538.</li> <li>The number is greater than 6,355.</li> <li>The number has a digit less than 5 in the hundreds place.</li> </ul> <p>Which of these could be the number described?</p> <p><b>A</b> 6,549<br/> <b>B</b> 6,268<br/> <b>C</b> 6,519<br/> <b>D</b> 6,449</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center; background-color: #cccccc;">Analysis of Assessed Standards</th></tr> </thead> <tbody> <tr> <td style="width: 15%;">Cluster</td><td>Representation and Comparison of Whole Numbers</td></tr> <tr> <td>Subcluster</td><td>Comparison of Whole Numbers</td></tr> <tr> <td>Content</td><td>Readiness</td></tr> <tr> <td>Process</td><td></td></tr> <tr> <td>Stimulus</td><td></td></tr> <tr> <th colspan="2" style="text-align: center; background-color: #cccccc;">Data Analysis</th></tr> <tr> <th style="width: 33%;">Item</th><th style="width: 33%;">State</th><th style="width: 33%;">Local</th></tr> <tr> <td>A</td><td>10</td><td></td></tr> <tr> <td>B</td><td>11</td><td></td></tr> <tr> <td>C</td><td>19</td><td></td></tr> <tr> <td>D*</td><td>60</td><td></td></tr> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Error Analysis</th></tr> <tr> <td colspan="3"> <input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early         </td></tr> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Learning from Mistakes<br/>Instructional Implications</th></tr> <tr> <td colspan="3"></td></tr> </tbody> </table> | Analysis of Assessed Standards |  | Cluster | Representation and Comparison of Whole Numbers | Subcluster | Comparison of Whole Numbers | Content | Readiness | Process |  | Stimulus |  | Data Analysis |  | Item | State | Local | A | 10 |  | B | 11 |  | C | 19 |  | D* | 60 |  | Error Analysis |  |  | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |  | Learning from Mistakes<br>Instructional Implications |  |  |  |  |  |
|---|--|--------------------------------|--|---------|--|------------|-----------------------------|---------|-----------|---------|--|----------|--|---------------|--|------|-------|-------|---|----|--|---|----|--|---|----|--|----|----|--|----------------|--|--|--|--|--|--|--|--|--|--|--|
| Analysis of Assessed Standards  |  |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Cluster   | Representation and Comparison of Whole Numbers   |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Subcluster  | Comparison of Whole Numbers  |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Content   | Readiness  |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Process   |  |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Stimulus  |  |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Data Analysis   |  |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Item  | State  | Local                          |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| A   | 10   |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| B   | 11   |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| C   | 19   |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| D*  | 60   |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Error Analysis  |  |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early  |  |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Learning from Mistakes<br>Instructional Implications  |  |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
|   |  |                                |  |         |  |            |                             |         |           |         |  |          |  |               |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |

\*Correct Answer (D)

| <p><b>3.2(D)</b> compare and order whole numbers up to 100,000 and represent comparisons using the symbols &gt;, &lt;, or =</p> <p>2016 – Q7</p> <p><b>7</b> The table below shows the number of each kind of magazine sold in a store during one month.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">Magazines Sold</th> </tr> <tr> <th>Kind of Magazine</th> <th>Number Sold</th> </tr> </thead> <tbody> <tr> <td>Fashion</td> <td>1,728</td> </tr> <tr> <td>News</td> <td>1,723</td> </tr> <tr> <td>Entertainment</td> <td>2,114</td> </tr> <tr> <td>Sports</td> <td>2,186</td> </tr> </tbody> </table> <p>Which list shows the kinds of magazines in order from greatest to least number sold?</p> <p><b>A</b> Sports, entertainment, fashion, news<br/> <b>B</b> Fashion, sports, entertainment, news<br/> <b>C</b> Sports, fashion, news, entertainment<br/> <b>D</b> Fashion, news, entertainment, sports</p> | Magazines Sold                                 |              | Kind of Magazine | Number Sold | Fashion | 1,728 | News | 1,723 | Entertainment | 2,114 | Sports | 2,186 | <p><b>Analysis of Assessed Standards</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><b>Cluster</b></td><td>Representation and Comparison of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Comparison of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td>3.1(A), 3.1(B), 3.1(E), 3.1(F)</td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><b>Item</b></td><td><b>State</b></td><td><b>Local</b></td></tr> <tr> <td>A*</td><td>90</td><td></td></tr> <tr> <td>B</td><td>3</td><td></td></tr> <tr> <td>C</td><td>4</td><td></td></tr> <tr> <td>D</td><td>4</td><td></td></tr> </table> <p><b>Error Analysis</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: left;"><input type="checkbox"/> Guessing</td><td style="width: 50%; text-align: left;"><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Representation and Comparison of Whole Numbers | <b>Subcluster</b> | Comparison of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> | 3.1(A), 3.1(B), 3.1(E), 3.1(F) | <b>Stimulus</b> |  | <b>Item</b> | <b>State</b> | <b>Local</b> | A* | 90 |  | B | 3 |  | C | 4 |  | D | 4 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|--|--|--------------|------------------|-------------|---------|-------|------|-------|---------------|-------|--------|-------|---|----------------|--|-------------------|-----------------------------|----------------|-----------|----------------|--------------------------------|-----------------|--|-------------|--------------|--------------|----|----|--|---|---|--|---|---|--|---|---|--|-----------------------------------|--|---|--|
| Magazines Sold   |  |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| Kind of Magazine   | Number Sold                                    |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| Fashion  | 1,728  |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| News   | 1,723  |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| Entertainment  | 2,114  |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| Sports   | 2,186  |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Cluster</b>   | Representation and Comparison of Whole Numbers |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Subcluster</b>  | Comparison of Whole Numbers                    |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Content</b>   | Readiness                                      |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Process</b>   | 3.1(A), 3.1(B), 3.1(E), 3.1(F)                 |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Stimulus</b>  |  |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Item</b>  | <b>State</b>                                   | <b>Local</b> |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| A*   | 90   |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| B  | 3  |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| C  | 4  |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| D  | 4  |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts     |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early     |              |                  |             |         |       |      |       |               |       |        |       |   |                |  |                   |                             |                |           |                |                                |                 |  |             |              |              |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |

\*Correct Answer (A)

| <p><b>3.2(D)</b> compare and order whole numbers up to 100,000 and represent comparisons using the symbols &gt;, &lt;, or =</p> <p>! 2016 – Q38</p> <p><b>38</b> The list shows three clues about a number.</p> <ul style="list-style-type: none"> <li>The number is greater than 85,629.</li> <li>The number is less than 88,231.</li> <li>The number has a digit greater than 6 in the hundreds place.</li> </ul> <p>Which of these could be the number described?</p> <p><b>F</b> 88,165<br/> <b>G</b> 85,625<br/> <b>H</b> 88,930<br/> <b>J</b> 87,720</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center; background-color: #cccccc;">Analysis of Assessed Standards</th></tr> </thead> <tbody> <tr> <td style="width: 15%;">Cluster</td><td>Representation and Comparison of Whole Numbers</td></tr> <tr> <td>Subcluster</td><td>Comparison of Whole Numbers</td></tr> <tr> <td>Content</td><td>Readiness</td></tr> <tr> <td>Process</td><td>3.1(B), 3.1(F)</td></tr> <tr> <td>Stimulus</td><td></td></tr> <tr> <th colspan="2" style="text-align: center; background-color: #cccccc;">Data Analysis</th></tr> <tr> <th style="width: 15%;">Item</th><th style="width: 15%;">State</th><th style="width: 15%;">Local</th></tr> <tr> <td>F</td><td>9</td><td></td></tr> <tr> <td>G</td><td>18</td><td></td></tr> <tr> <td>H</td><td>13</td><td></td></tr> <tr> <td>J*</td><td>59</td><td></td></tr> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Error Analysis</th></tr> <tr> <td colspan="3"> <input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early         </td></tr> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Learning from Mistakes<br/>Instructional Implications</th></tr> <tr> <td colspan="3"></td></tr> </tbody> </table> | Analysis of Assessed Standards |  | Cluster | Representation and Comparison of Whole Numbers | Subcluster | Comparison of Whole Numbers | Content | Readiness | Process | 3.1(B), 3.1(F) | Stimulus |  | Data Analysis |  | Item | State | Local | F | 9 |  | G | 18 |  | H | 13 |  | J* | 59 |  | Error Analysis |  |  | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |  | Learning from Mistakes<br>Instructional Implications |  |  |  |  |  |
|--|---|--------------------------------|--|---------|--|------------|-----------------------------|---------|-----------|---------|----------------|----------|--|---------------|--|------|-------|-------|---|---|--|---|----|--|---|----|--|----|----|--|----------------|--|--|--|--|--|--|--|--|--|--|--|
| Analysis of Assessed Standards   |   |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Cluster  | Representation and Comparison of Whole Numbers  |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Subcluster   | Comparison of Whole Numbers   |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Content  | Readiness   |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Process  | 3.1(B), 3.1(F)  |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Stimulus   |   |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Data Analysis  |   |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Item   | State   | Local                          |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| F  | 9   |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| G  | 18  |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| H  | 13  |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| J*   | 59  |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Error Analysis   |   |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early   |   |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Learning from Mistakes<br>Instructional Implications   |   |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |
|  |   |                                |  |         |  |            |                             |         |           |         |                |          |  |               |  |      |       |       |   |   |  |   |    |  |   |    |  |    |    |  |                |  |  |  |  |  |  |  |  |  |  |  |

\*Correct Answer (J)

|   |  |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
|---|--|-------------------------------|--|-----------------------------------|--|---|--|----------------|----------------|-----------------|----|----|--|---|----|--|---|----|--|
| <p><b>3.2(D)</b> compare and order whole numbers up to 100,000 and represent comparisons using the symbols &gt;, &lt;, or =</p> | <p><b>Analysis of Assessed Standards</b></p>   |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
|   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;"><b>Cluster</b></td><td style="padding: 2px;">Representation and Comparison of Whole Numbers</td></tr> <tr> <td style="padding: 2px;"><b>Subcluster</b></td><td style="padding: 2px;">Comparison of Whole Numbers</td></tr> <tr> <td style="padding: 2px;"><b>Content</b></td><td style="padding: 2px;">Readiness</td></tr> <tr> <td style="padding: 2px;"><b>Process</b></td><td style="padding: 2px;">3.1(B), 3.1(F)</td></tr> <tr> <td style="padding: 2px;"><b>Stimulus</b></td><td style="padding: 2px;"></td></tr> </table>   | <b>Cluster</b>                | Representation and Comparison of Whole Numbers | <b>Subcluster</b>                 | Comparison of Whole Numbers                | <b>Content</b>                          | Readiness                                  | <b>Process</b> | 3.1(B), 3.1(F) | <b>Stimulus</b> |    |    |  |   |    |  |   |    |  |
| <b>Cluster</b>  | Representation and Comparison of Whole Numbers   |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| <b>Subcluster</b>   | Comparison of Whole Numbers  |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| <b>Content</b>  | Readiness  |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| <b>Process</b>  | 3.1(B), 3.1(F)   |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| <b>Stimulus</b>   |  |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
|   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="text-align: center; padding: 2px;"><b>Data Analysis</b></td></tr> <tr> <td style="width: 33.33%; padding: 2px;"><b>Item</b></td><td style="width: 33.33%; padding: 2px;"><b>State</b></td><td style="width: 33.33%; padding: 2px;"><b>Local</b></td></tr> <tr> <td style="padding: 2px;">A</td><td style="padding: 2px;">NA</td><td style="padding: 2px;"></td></tr> <tr> <td style="padding: 2px;">B*</td><td style="padding: 2px;">NA</td><td style="padding: 2px;"></td></tr> <tr> <td style="padding: 2px;">C</td><td style="padding: 2px;">NA</td><td style="padding: 2px;"></td></tr> <tr> <td style="padding: 2px;">D</td><td style="padding: 2px;">NA</td><td style="padding: 2px;"></td></tr> </table> | <b>Data Analysis</b>          |  |                                   | <b>Item</b>                                | <b>State</b>                            | <b>Local</b>                               | A              | NA             |                 | B* | NA |  | C | NA |  | D | NA |  |
| <b>Data Analysis</b>  |  |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| <b>Item</b>   | <b>State</b>   | <b>Local</b>                  |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| A   | NA   |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| B*  | NA   |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| C   | NA   |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| D   | NA   |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
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| <b>Error Analysis</b>   |  |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts   |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early   |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
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| <b>Learning from Mistakes</b>   |  |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |
| <b>Instructional Implications</b>   |  |                               |  |                                   |  |   |  |                |                |                 |    |    |  |   |    |  |   |    |  |

\*Correct Answer (B)

| <b>3.2(C)</b> represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers |  | <b>Analysis of Assessed Standards</b>                              |  |
|--|--|--|--|
| 2017 – Q31   |  | <b>Cluster</b>   | Representation and Comparison of Whole Numbers |
| <b>31</b> The point on the number line represents the amount of money needed to build a garage.  |  | <b>Subcluster</b>  | Rounding of Whole Numbers                      |
|  |  | <b>Content</b>   | Supporting                                     |
|  |  | <b>Process</b>   |  |
|  |  | <b>Stimulus</b>  |  |
|  |  | <b>Data Analysis</b>   |  |
|  |  | Item   | State  |
|  |  | A  | 6  |
|  |  | B  | 6  |
|  |  | C*   | 81   |
|  |  | D  | 7  |
|  |  | <b>Error Analysis</b>  |  |
|  |  | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts     |
|  |  | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early     |
|  |  | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |
|  |  |  |  |

\*Correct Answer (C)

| <p><b>3.2(C)</b> represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers</p> <p>2015 – Q3 Sample</p> <p><b>3</b> The Leija family is on a road trip. The number line represents the distance the family drove on Monday from their home to point A.</p> <p>About how many miles did the family drive on Monday?</p> <p><b>A</b> 300, because point A is less than halfway between 300 and 400<br/> <b>B</b> 500, because point A is more than halfway between 300 and 500<br/> <b>C</b> 200, because point A is less than halfway between 200 and 400<br/> <b>D</b> 400, because point A is more than halfway between 300 and 400</p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Representation and Comparison of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Rounding of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Supporting</td></tr> <tr> <td><b>Process</b></td><td>3.1(A), 3.1(B), 3.1(C), 3.1(E), 3.1(G)</td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>A</td><td>NA</td><td></td></tr> <tr> <td>B</td><td>NA</td><td></td></tr> <tr> <td>C</td><td>NA</td><td></td></tr> <tr> <td>D*</td><td>NA</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Representation and Comparison of Whole Numbers | <b>Subcluster</b> | Rounding of Whole Numbers | <b>Content</b> | Supporting | <b>Process</b> | 3.1(A), 3.1(B), 3.1(C), 3.1(E), 3.1(G) | <b>Stimulus</b> |  | Item | State | Local | A | NA |  | B | NA |  | C | NA |  | D* | NA |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|--|--|----------------|--|-------------------|---------------------------|----------------|------------|----------------|--|-----------------|--|------|-------|-------|---|----|--|---|----|--|---|----|--|----|----|--|-----------------------------------|--|---|--|
| <b>Cluster</b>   | Representation and Comparison of Whole Numbers   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |
| <b>Subcluster</b>  | Rounding of Whole Numbers  |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |
| <b>Content</b>   | Supporting   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |
| <b>Process</b>   | 3.1(A), 3.1(B), 3.1(C), 3.1(E), 3.1(G)   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |
| <b>Stimulus</b>  |  |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |
| Item   | State  | Local          |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |
| A  | NA   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |
| B  | NA   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |
| C  | NA   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |
| D*   | NA   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |   |    |  |   |    |  |   |    |  |    |    |  |                                   |  |   |  |

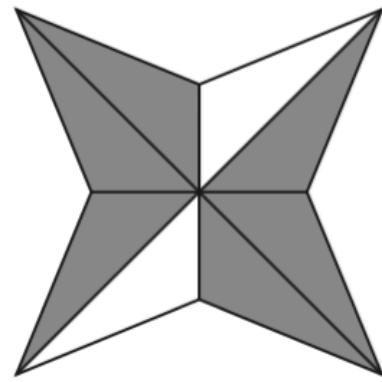
\*Correct Answer (D)

# Fractions

**3.3 Number and operations.** The student applies mathematical process standards to represent and explain fractional units.

**Connected Knowledge and Skills 3.6, 3.7**

| 3.3(A) represent fractions greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 using concrete objects and pictorial models, including strip diagrams and number lines |    | Analysis of Assessed Standards                       |  |
|--|----|--|--|
| 2016 – Q1  |    | Cluster  | Fractions                                  |
|  |    | Subcluster   | Representation of Fractions                |
|  |    | Content  | Supporting                                 |
|  |    | Process  | 3.1(A), 3.1(B), 3.1(D), 3.1(F)             |
|  |    | Stimulus   |  |
|  |    | Data Analysis  |  |
|  |    | Item   | State                                      |
|  | A* | 89   |  |
|  | B  | 0  |  |
|  | C  | 8  |  |
|  | D  | 3  |  |
|  |    | Error Analysis                                       |  |
|  |    | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |
|  |    | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |
|  |    | Learning from Mistakes<br>Instructional Implications |  |
| *Correct Answer (A)  |    |  |  |



What fraction of the figure is shaded?

**A**  $\frac{6}{8}$

**B**  $\frac{1}{6}$

**C**  $\frac{2}{8}$

**D**  $\frac{2}{6}$

\*Correct Answer (A)

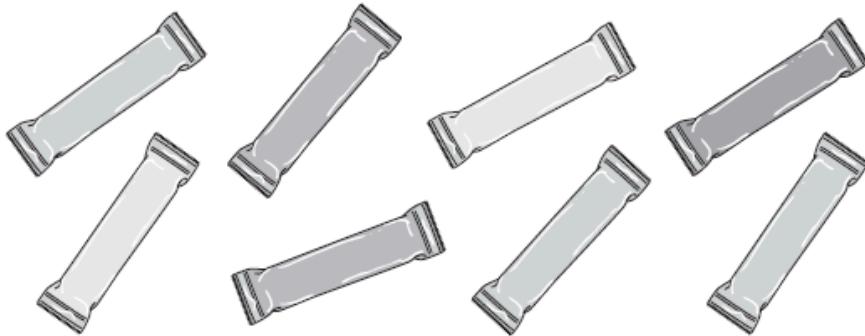
| 3.3(E) solve problems involving partitioning an object or a set of objects among two or more recipients using pictorial representations of fractions with denominators of 2, 3, 4, 6, and 8 |  | Analysis of Assessed Standards |                             |
|---|--|--------------------------------|-----------------------------|
| Cluster   | Fractions                                  | Subcluster                     | Representation of Fractions |
| Content   | Supporting                                 | Process                        |                             |
| Stimulus  |  |                                |                             |
| Data Analysis   |  |                                |                             |
| Item  | State                                      | Local                          |                             |
| A   | 10   |                                |                             |
| B*  | 57   |                                |                             |
| C   | 25   |                                |                             |
| D   | 7  |                                |                             |
| Error Analysis  |  |                                |                             |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts |                                |                             |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early |                                |                             |
| Learning from Mistakes<br>Instructional Implications  |  |                                |                             |
| *Correct Answer (B)   |  |                                |                             |

**3.3(E)** solve problems involving partitioning an object or a set of objects among two or more recipients using pictorial representations of fractions with denominators of 2, 3, 4, 6, and 8

#### Analysis of Assessed Standards

! 2016 – Q32

- 32** Lonny opened a new box of granola bars. Lonny and three of his friends equally shared the granola bars shown in the picture.



What fraction of the granola bars did each of them get?

F  $\frac{3}{8}$

G  $\frac{2}{8}$

H  $\frac{1}{8}$

J  $\frac{4}{8}$

|                   |                                |
|-------------------|--------------------------------|
| <b>Cluster</b>    | Fractions                      |
| <b>Subcluster</b> | Representation of Fractions    |
| <b>Content</b>    | Supporting                     |
| <b>Process</b>    | 3.1(A), 3.1(B), 3.1(E), 3.1(F) |
| <b>Stimulus</b>   |                                |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F    | 12    |       |
| G*   | 64    |       |
| H    | 4     |       |
| J    | 20    |       |

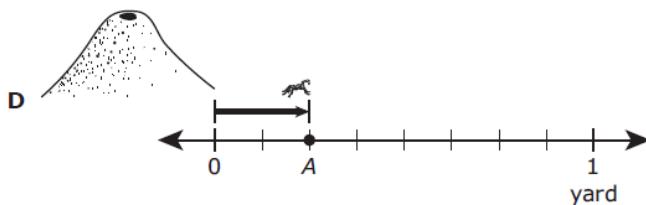
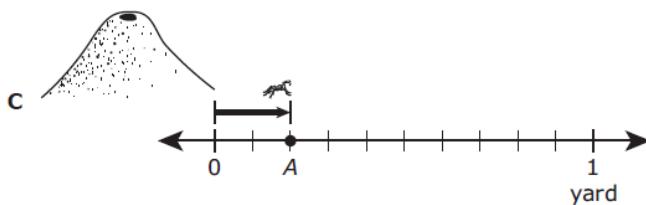
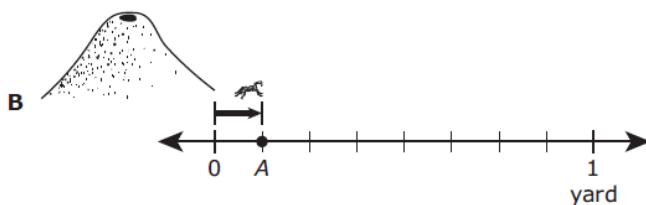
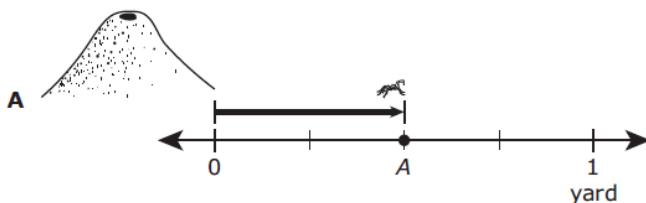
#### Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

\*Correct Answer (G)

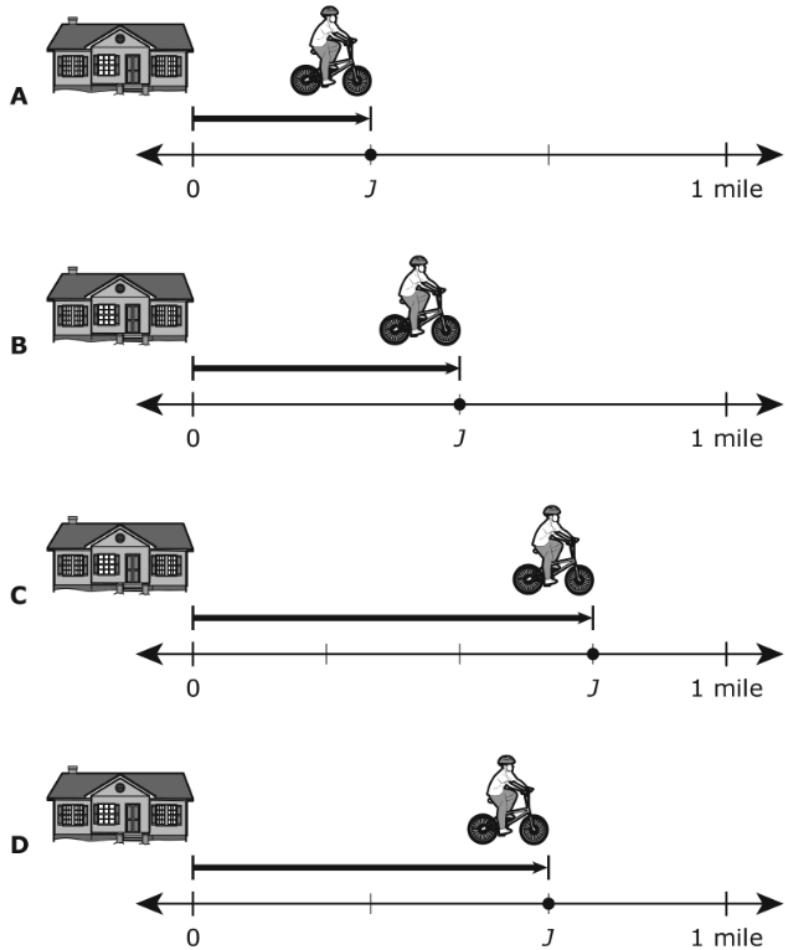
| 3.7(A) represent fractions of halves, fourths, and eighths as distances from zero on a number line   |    | Analysis of Assessed Standards                       |  |
|--|----|--|--|
| 2021 – Q19   |    | Cluster  | Fractions                                  |
| <b>19</b> An ant crawled $\frac{2}{8}$ yard from an ant mound. On which number line does point A represent the ant's position after crawling $\frac{2}{8}$ yard? |    | Subcluster   | Representation of Fractions                |
|  |    | Content  | Supporting                                 |
|  |    | Process  |  |
|  |    | Stimulus   |  |
|  |    | Data Analysis  |  |
|  |    | Item   | State                                      |
|  | A  | 18   |  |
|  | B  | 12   |  |
|  | C  | 9  |  |
|  | D* | 61   |  |
|  |    | Error Analysis                                       |  |
|  |    | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |
|  |    | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |
|  |    | Learning from Mistakes<br>Instructional Implications |  |
| *Correct Answer (D)  |    |  |  |



**3.7(A)** represent fractions of halves, fourths, and eighths as distances from zero on a number line

2019 – Q29

Javier rode his bike a distance of  $\frac{1}{2}$  mile from his house. On which number line does point J represent Javier's position after riding his bike?



\*Correct Answer (B)

**Analysis of Assessed Standards**

|                   |                             |
|-------------------|-----------------------------|
| <b>Cluster</b>    | Fractions                   |
| <b>Subcluster</b> | Representation of Fractions |
| <b>Content</b>    | Supporting                  |
| <b>Process</b>    |                             |
| <b>Stimulus</b>   |                             |

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| A    | 7     |       |
| B*   | 81    |       |
| C    | 5     |       |
| D    | 6     |       |

**Error Analysis**

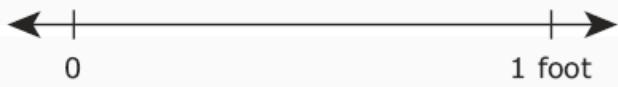
- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

**Learning from Mistakes  
Instructional Implications**

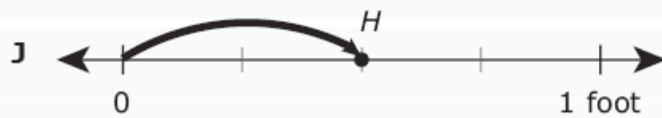
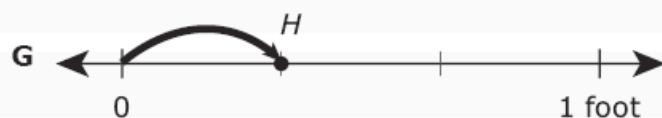
**3.7(A)** represent fractions of halves, fourths, and eighths as distances from zero on a number line

! 2017 – Q2

**2** The number line represents a distance of 1 foot.



On which of these number lines does point H represent  $\frac{1}{2}$  foot?



\*Correct Answer (J)

#### Analysis of Assessed Standards

|            |                             |
|------------|-----------------------------|
| Cluster    | Fractions                   |
| Subcluster | Representation of Fractions |
| Content    | Supporting                  |
| Process    |                             |
| Stimulus   |                             |

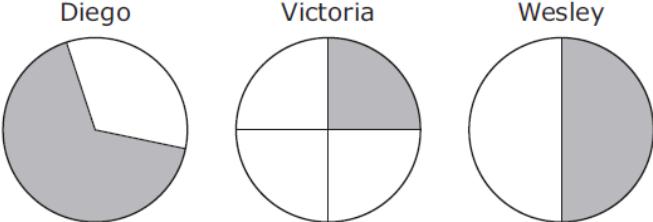
#### Data Analysis

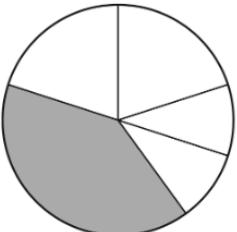
| Item | State | Local |
|------|-------|-------|
| F    | 16    |       |
| G    | 5     |       |
| H    | 4     |       |
| J*   | 75    |       |

#### Error Analysis

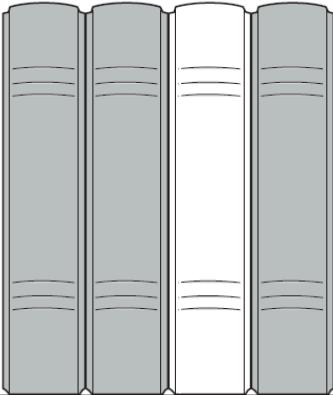
- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

| <p><b>3.3(C)</b> explain that the unit fraction <math>1/b</math> represents the quantity formed by one part of a whole that has been partitioned into <math>b</math> equal parts where <math>b</math> is a non-zero whole number</p>  | <p><b>Analysis of Assessed Standards</b></p>   |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
|---|--|-----------------------------------|--|---|--|----------------|------------|----------------|----|-----------------|----|----|--|---|---|--|
| <p>2021 – Q2</p> <p>2 Three friends divided three pizzas into pieces. The shaded parts of the models represent the pieces that the friends ate.</p>   | <table border="1"> <tr> <td><b>Cluster</b></td><td>Fractions</td></tr> <tr> <td><b>Subcluster</b></td><td>Unit Fractions</td></tr> <tr> <td><b>Content</b></td><td>Supporting</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table>  | <b>Cluster</b>                    | Fractions                                  | <b>Subcluster</b>                       | Unit Fractions                             | <b>Content</b> | Supporting | <b>Process</b> |    | <b>Stimulus</b> |    |    |  |   |   |  |
| <b>Cluster</b>  | Fractions  |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
| <b>Subcluster</b>   | Unit Fractions   |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
| <b>Content</b>  | Supporting   |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
| <b>Process</b>  |  |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
| <b>Stimulus</b>   |  |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
|    | <p><b>Data Analysis</b></p> <table border="1"> <tr> <th>Item</th><th>State</th><th>Local</th></tr> <tr> <td>F</td><td>9</td><td></td></tr> <tr> <td>G</td><td>15</td><td></td></tr> <tr> <td>H*</td><td>69</td><td></td></tr> <tr> <td>J</td><td>7</td><td></td></tr> </table>   | Item                              | State                                      | Local                                   | F  | 9              |            | G              | 15 |                 | H* | 69 |  | J | 7 |  |
| Item  | State  | Local                             |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
| F   | 9  |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
| G   | 15   |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
| H*  | 69   |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
| J   | 7  |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
| <p>Which statement describes the fraction of a pizza that one of the friends ate?</p> <p>F Diego ate <math>\frac{1}{2}</math> of a pizza, because he ate the largest piece of his 2 pieces.</p> <p>G Victoria ate <math>\frac{1}{3}</math> of a pizza, because she ate 1 piece and had 3 equal-size pieces left over.</p> <p>H Wesley ate <math>\frac{1}{2}</math> of a pizza, because he ate 1 piece of his 2 equal-size pieces.</p> <p>J Victoria ate <math>\frac{3}{1}</math> of a pizza, because she ate 1 piece and had 3 pieces left over.</p> <p>*Correct Answer (H)</p> | <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td> <td><input type="checkbox"/> Mixed Up Concepts</td> </tr> <tr> <td><input type="checkbox"/> Careless Error</td> <td><input type="checkbox"/> Stopped Too Early</td> </tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |                |            |                |    |                 |    |    |  |   |   |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts   |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early   |                                   |  |   |  |                |            |                |    |                 |    |    |  |   |   |  |

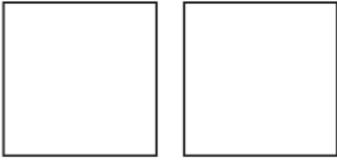
|  |   |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
|--|---|-----------------------|-----------|-----------------------------------|--|---|--|-------------------------------|----|-----------------------------------|----|----|--|---|---|--|---|---|--|
| <p><b>3.3(C)</b> explain that the unit fraction <math>1/b</math> represents the quantity formed by one part of a whole that has been partitioned into <math>b</math> equal parts where <math>b</math> is a non-zero whole number</p>   | <p><b>Analysis of Assessed Standards</b></p>  |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| <p>2019 – Q17</p> <p>Models R and T are shown.</p>   | <table border="1"> <tr> <td><b>Cluster</b></td><td>Fractions</td></tr> <tr> <td><b>Subcluster</b></td><td>Unit Fractions</td></tr> <tr> <td><b>Content</b></td><td>Supporting</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table>   | <b>Cluster</b>        | Fractions | <b>Subcluster</b>                 | Unit Fractions                             | <b>Content</b>                          | Supporting                                 | <b>Process</b>                |    | <b>Stimulus</b>                   |    |    |  |   |   |  |   |   |  |
| <b>Cluster</b>   | Fractions   |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| <b>Subcluster</b>  | Unit Fractions  |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| <b>Content</b>   | Supporting  |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| <b>Process</b>   |   |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| <b>Stimulus</b>  |   |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
|  <p>Model R</p>   | <table border="1"> <tr> <td colspan="3"><b>Data Analysis</b></td></tr> <tr> <td><b>Item</b></td><td><b>State</b></td><td><b>Local</b></td></tr> <tr> <td>A</td><td>17</td><td></td></tr> <tr> <td>B*</td><td>69</td><td></td></tr> <tr> <td>C</td><td>6</td><td></td></tr> <tr> <td>D</td><td>7</td><td></td></tr> </table>   | <b>Data Analysis</b>  |           |                                   | <b>Item</b>                                | <b>State</b>                            | <b>Local</b>                               | A                             | 17 |                                   | B* | 69 |  | C | 6 |  | D | 7 |  |
| <b>Data Analysis</b>   |   |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| <b>Item</b>  | <b>State</b>  | <b>Local</b>          |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| A  | 17  |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| B*   | 69  |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| C  | 6   |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| D  | 7   |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| <p>Which statement is true?</p> <p><b>A</b> The shaded parts of Model R and Model T are different sizes, but each model represents the same fraction of the whole.</p> <p><b>B</b> The shaded part of Model R cannot be written as the fraction <math>\frac{1}{5}</math>, because the parts are not all equal in size.</p> <p><b>C</b> The shaded part of Model T is <math>\frac{1}{4}</math>, because the parts are all equal in size.</p> <p><b>D</b> The total number of parts in Model R is 5, so <math>\frac{1}{5}</math> of Model R is shaded.</p> | <table border="1"> <tr> <td><b>Error Analysis</b></td><td></td></tr> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> <tr> <td colspan="2"><b>Learning from Mistakes</b></td></tr> <tr> <td colspan="2"><b>Instructional Implications</b></td></tr> </table> | <b>Error Analysis</b> |           | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early | <b>Learning from Mistakes</b> |    | <b>Instructional Implications</b> |    |    |  |   |   |  |   |   |  |
| <b>Error Analysis</b>  |   |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts  |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early  |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| <b>Learning from Mistakes</b>  |   |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |
| <b>Instructional Implications</b>  |   |                       |           |                                   |  |   |  |                               |    |                                   |    |    |  |   |   |  |   |   |  |

\*Correct Answer (B)

| <p><b>3.3(D)</b> compose and decompose a fraction <math>a/b</math> with a numerator greater than zero and less than or equal to <math>b</math> as a sum of parts <math>1/b</math></p>   | <b>Analysis of Assessed Standards</b>  |  |  |       |       |   |    |  |    |    |  |   |    |  |   |   |  |  |
|---|--|--|--|-------|-------|---|----|--|----|----|--|---|----|--|---|---|--|--|
| <p>! 2018 – Q23</p> <p><b>23</b> There are 4 books on a shelf. In the model the shaded books represent nonfiction books.</p>   | <b>Cluster</b><br><b>Subcluster</b><br><b>Content</b><br><b>Process</b><br><b>Stimulus</b> | Fractions<br>Unit Fractions<br>Supporting<br><br>  |  |       |       |   |    |  |    |    |  |   |    |  |   |   |  |  |
|   | <b>Data Analysis</b>   | <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>16</td> <td></td> </tr> <tr> <td>B*</td> <td>69</td> <td></td> </tr> <tr> <td>C</td> <td>10</td> <td></td> </tr> <tr> <td>D</td> <td>4</td> <td></td> </tr> </tbody> </table> | Item   | State | Local | A | 16 |  | B* | 69 |  | C | 10 |  | D | 4 |  |  |
| Item  | State  | Local  |  |       |       |   |    |  |    |    |  |   |    |  |   |   |  |  |
| A   | 16   |  |  |       |       |   |    |  |    |    |  |   |    |  |   |   |  |  |
| B*  | 69   |  |  |       |       |   |    |  |    |    |  |   |    |  |   |   |  |  |
| C   | 10   |  |  |       |       |   |    |  |    |    |  |   |    |  |   |   |  |  |
| D   | 4  |  |  |       |       |   |    |  |    |    |  |   |    |  |   |   |  |  |
| <p>Which expression represents the fraction of the books on the shelf that are nonfiction?</p> <p><b>A</b> <math>\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}</math></p> <p><b>B</b> <math>\frac{1}{4} + \frac{1}{4} + \frac{1}{4}</math></p> <p><b>C</b> <math>\frac{1}{3} + \frac{1}{3} + \frac{1}{3}</math></p> <p><b>D</b> <math>\frac{3}{1} + \frac{3}{1} + \frac{3}{1}</math></p> <p>*Correct Answer (B)</p> | <b>Error Analysis</b>  | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |       |       |   |    |  |    |    |  |   |    |  |   |   |  |  |

| <b>3.3(D)</b> compose and decompose a fraction a/b with a numerator greater than zero and less than or equal to b as a sum of parts 1/b   | <b>Analysis of Assessed Standards</b>   |       |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
|---|---|-------|------|-------|-------|----|----|--|---|----|--|---|----|--|---|----|--|
| <span style="color: #0070C0;">!</span> 2015 – Q5 Sample   | <b>Cluster</b> Fractions<br><b>Subcluster</b> Unit Fractions<br><b>Content</b> Supporting<br><b>Process</b> 3.1(A), 3.1(B), 3.1(D), 3.1(F)<br><b>Stimulus</b>   |       |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <p><b>5</b> A farmer gave <math>\frac{1}{4}</math> of a bale of hay to a horse each day on Monday, Tuesday, and Wednesday. Which equation can be used to find the fraction of a bale of hay the farmer gave the horse on these three days?</p>  | <b>Data Analysis</b><br><table border="1" data-bbox="1106 369 1512 644"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>A*</td> <td>NA</td> <td></td> </tr> <tr> <td>B</td> <td>NA</td> <td></td> </tr> <tr> <td>C</td> <td>NA</td> <td></td> </tr> <tr> <td>D</td> <td>NA</td> <td></td> </tr> </tbody> </table> |       | Item | State | Local | A* | NA |  | B | NA |  | C | NA |  | D | NA |  |
| Item  | State   | Local |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| A*  | NA  |       |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| B   | NA  |       |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| C   | NA  |       |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| D   | NA  |       |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <p><b>A</b> <math>\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}</math></p> <p><b>B</b> <math>\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{12}</math></p> <p><b>C</b> <math>\frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{3}{7}</math></p> <p><b>D</b> <math>\frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{3}{21}</math></p> | <b>Error Analysis</b><br><input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early   |       |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |   |       |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |

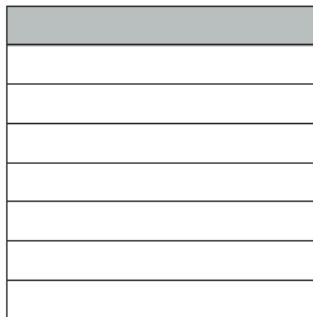
\*Correct Answer (A)

| <p><b>3.6(E)</b> decompose two congruent two-dimensional figures into parts with equal areas and express the area of each part as a unit fraction of the whole and recognize that equal shares of identical wholes need not have the same shape</p>  | <p><b>Analysis of Assessed Standards</b></p>  |                |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |
|--|---|----------------|-----------|-------------------|----------------|----------------|------------|----------------|---|-----------------|---|----|--|---|----|--|
| <p>! 2019 – Q8</p> <p>Brandon drew the two congruent squares shown.</p>   | <table border="1"> <tr> <td><b>Cluster</b></td><td>Fractions</td></tr> <tr> <td><b>Subcluster</b></td><td>Unit Fractions</td></tr> <tr> <td><b>Content</b></td><td>Supporting</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table>                           | <b>Cluster</b> | Fractions | <b>Subcluster</b> | Unit Fractions | <b>Content</b> | Supporting | <b>Process</b> |   | <b>Stimulus</b> |   |    |  |   |    |  |
| <b>Cluster</b>   | Fractions   |                |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |
| <b>Subcluster</b>  | Unit Fractions  |                |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |
| <b>Content</b>   | Supporting  |                |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |
| <b>Process</b>   |   |                |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |
| <b>Stimulus</b>  |   |                |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |
| <ul style="list-style-type: none"> <li>He divided one square into 2 congruent triangular parts.</li> <li>He divided the other square into 2 congruent rectangular parts.</li> </ul> <p>Which statement is true?</p>  | <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>F*</td><td>69</td><td></td></tr> <tr> <td>G</td><td>8</td><td></td></tr> <tr> <td>H</td><td>12</td><td></td></tr> <tr> <td>J</td><td>10</td><td></td></tr> </tbody> </table> | Item           | State     | Local             | F*             | 69             |            | G              | 8 |                 | H | 12 |  | J | 10 |  |
| Item   | State   | Local          |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |
| F*   | 69  |                |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |
| G  | 8   |                |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |
| H  | 12  |                |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |
| J  | 10  |                |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |
| <p><b>F</b> Each triangular part and each rectangular part represents <math>\frac{1}{2}</math> the area of one square.</p> <p><b>G</b> Each triangular part has an area that is greater than the area of each rectangular part.</p> <p><b>H</b> Each triangular part and each rectangular part represents <math>\frac{1}{4}</math> the area of one square.</p> <p><b>J</b> Each rectangular part has an area that is greater than the area of each triangular part.</p> <p>*Correct Answer (F)</p> | <p><b>Error Analysis</b></p> <p><input type="checkbox"/> Guessing   <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error   <input type="checkbox"/> Stopped Too Early</p> <p><b>Learning from Mistakes</b><br/> <b>Instructional Implications</b></p>                          |                |           |                   |                |                |            |                |   |                 |   |    |  |   |    |  |

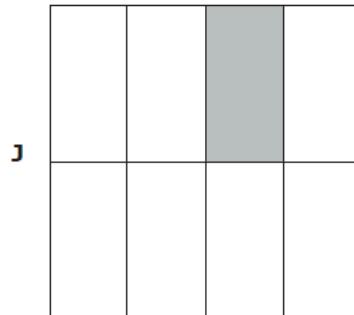
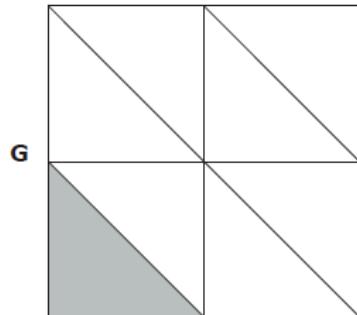
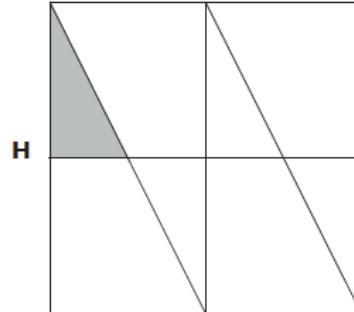
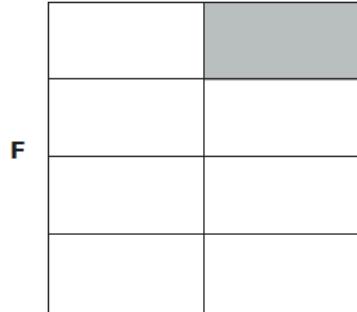
**3.6(E)** decompose two congruent two-dimensional figures into parts with equal areas and express the area of each part as a unit fraction of the whole and recognize that equal shares of identical wholes need not have the same shape

2018 – Q26

- 26** Kailani drew four congruent squares. She shaded the same fraction of each square. This is one of Kailani's squares.



Which square CANNOT be another one of Kailani's squares?



\*Correct Answer (H)

#### Analysis of Assessed Standards

|            |                |
|------------|----------------|
| Cluster    | Fractions      |
| Subcluster | Unit Fractions |
| Content    | Supporting     |
| Process    |                |
| Stimulus   |                |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F    | 10    |       |
| G    | 10    |       |
| H*   | 74    |       |
| J    | 6     |       |

#### Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

**3.6(E)** decompose two congruent two-dimensional figures into parts with equal areas and express the area of each part as a unit fraction of the whole and recognize that equal shares of identical wholes need not have the same shape

#### Analysis of Assessed Standards

|                   |                        |
|-------------------|------------------------|
| <b>Cluster</b>    | Fractions              |
| <b>Subcluster</b> | Unit Fractions         |
| <b>Content</b>    | Supporting             |
| <b>Process</b>    | 3.1(B), 3.1(E), 3.1(G) |
| <b>Stimulus</b>   |                        |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    | NA    |       |
| B    | NA    |       |
| C*   | NA    |       |
| D    | NA    |       |

#### Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

2015 – Q20 Sample

**20** The two figures shown are congruent, and one-fourth of each figure is shaded.

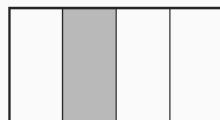


Figure M

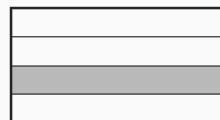


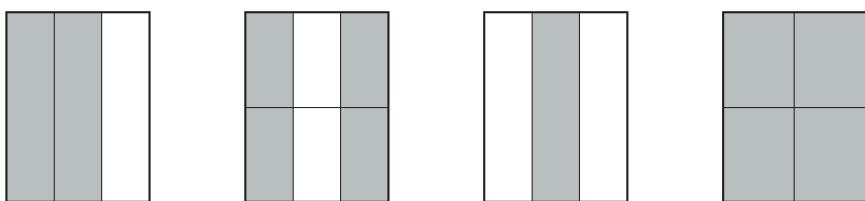
Figure N

Which statement about the shaded parts of these figures is true?

- A** The area of the shaded part of Figure M is greater than the area of the shaded part of Figure N.
- B** The area of the shaded part of Figure M is less than the area of the shaded part of Figure N.
- C** The area of the shaded part of Figure M is equal to the area of the shaded part of Figure N.
- D** None of the above

\*Correct Answer (C)

| 3.3(F) represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines |             | Analysis of Assessed Standards             |                          |  |  |
|--|-------------|--|--------------------------|--|--|
| <b>!</b> 2021 – Q21  |             | <b>Cluster</b>                             | Fractions                |  |  |
| <b>21</b> Irene has a group of counters, as shown.   |             | <b>Subcluster</b>                          | Equivalency of Fractions |  |  |
|  |             | <b>Content</b>                             | Readiness                |  |  |
|  |             | <b>Process</b>                             |                          |  |  |
|  |             | <b>Stimulus</b>                            |                          |  |  |
| Data Analysis  |             |  |                          |  |  |
|  | <b>Item</b> | <b>State</b>                               | <b>Local</b>             |  |  |
| A  | 44          |  |                          |  |  |
| B  | 7           |  |                          |  |  |
| C*   | 40          |  |                          |  |  |
| D  | 8           |  |                          |  |  |
| Error Analysis   |             |  |                          |  |  |
| <input type="checkbox"/> Guessing  |             | <input type="checkbox"/> Mixed Up Concepts |                          |  |  |
| <input type="checkbox"/> Careless Error  |             | <input type="checkbox"/> Stopped Too Early |                          |  |  |
| Learning from Mistakes<br>Instructional Implications   |             |  |                          |  |  |
| *Correct Answer (C)  |             |  |                          |  |  |

| <p><b>3.3(F)</b> represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines</p>   | <p><b>Analysis of Assessed Standards</b></p>  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
|--|---|-----------------------------------|--|---|--|----|--|---|----|--|----|----|--|---|----|--|-----------------------------------|--|---|--|
| <p>! 2019 – Q19</p>  | <p><b>Cluster</b> Fractions<br/> <b>Subcluster</b> Equivalency of Fractions<br/> <b>Content</b> Readiness<br/> <b>Process</b><br/> <b>Stimulus</b></p>  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <p>Point <math>P</math> on the number line represents two equivalent fractions.</p>    | <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>20</td> <td></td> </tr> <tr> <td>B</td> <td>11</td> <td></td> </tr> <tr> <td>C*</td> <td>55</td> <td></td> </tr> <tr> <td>D</td> <td>14</td> <td></td> </tr> </tbody> </table>   | Item                              | State                                      | Local                                   | A  | 20 |  | B | 11 |  | C* | 55 |  | D | 14 |  |                                   |  |   |  |
| Item   | State   | Local                             |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| A  | 20  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| B  | 11  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| C*   | 55  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| D  | 14  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <p>Which two equivalent fractions can point <math>P</math> represent?</p>  | <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td> <td><input type="checkbox"/> Mixed Up Concepts</td> </tr> <tr> <td><input type="checkbox"/> Careless Error</td> <td><input type="checkbox"/> Stopped Too Early</td> </tr> </table>   | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <p><b>A</b> <math>\frac{1}{4}</math> and <math>\frac{1}{8}</math><br/> <b>B</b> <math>\frac{1}{3}</math> and <math>\frac{2}{6}</math><br/> <b>C</b> <math>\frac{1}{4}</math> and <math>\frac{2}{8}</math><br/> <b>D</b> <math>\frac{1}{4}</math> and <math>\frac{3}{4}</math></p>  | <p><b>Learning from Mistakes</b><br/> <b>Instructional Implications</b></p>   |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <p>*Correct Answer (C)</p>   |   |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <p><b>3.3(F)</b> represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines</p>   | <p><b>Analysis of Assessed Standards</b></p>  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <p>2018 – Q8</p> <p>8 Four fraction models are shown.</p> <p>Model 1      Model 2      Model 3      Model 4</p>  <p>Which two models are shaded to show equivalent fractions?</p> <p><b>F</b> Models 1 and 2<br/> <b>G</b> Models 1 and 3<br/> <b>H</b> Models 2 and 4<br/> <b>J</b> Models 2 and 3</p> <p>*Correct Answer (F)</p> | <p><b>Cluster</b> Fractions<br/> <b>Subcluster</b> Equivalency of Fractions<br/> <b>Content</b> Readiness<br/> <b>Process</b><br/> <b>Stimulus</b></p> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>F*</td> <td>70</td> <td></td> </tr> <tr> <td>G</td> <td>11</td> <td></td> </tr> <tr> <td>H</td> <td>12</td> <td></td> </tr> <tr> <td>J</td> <td>7</td> <td></td> </tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td> <td><input type="checkbox"/> Mixed Up Concepts</td> </tr> <tr> <td><input type="checkbox"/> Careless Error</td> <td><input type="checkbox"/> Stopped Too Early</td> </tr> </table> <p><b>Learning from Mistakes</b><br/> <b>Instructional Implications</b></p> | Item                              | State                                      | Local                                   | F*   | 70 |  | G | 11 |  | H  | 12 |  | J | 7  |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
| Item   | State   | Local                             |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| F*   | 70  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| G  | 11  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| H  | 12  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| J  | 7   |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early  |                                   |  |   |  |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |

**3.3(F)** represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines

#### Analysis of Assessed Standards

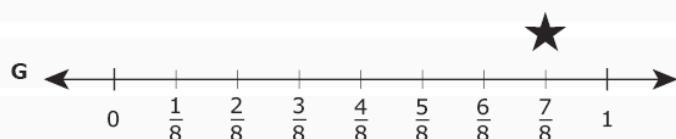
|                   |                          |
|-------------------|--------------------------|
| <b>Cluster</b>    | Fractions                |
| <b>Subcluster</b> | Equivalency of Fractions |
| <b>Content</b>    | Readiness                |
| <b>Process</b>    |                          |
| <b>Stimulus</b>   |                          |

! 2017 – Q20

- 20 Eddie marked the fraction  $\frac{3}{4}$  with a star on the number line shown.



Which of these number lines shows a fraction equivalent to  $\frac{3}{4}$  marked with a star?



\*Correct Answer (H)

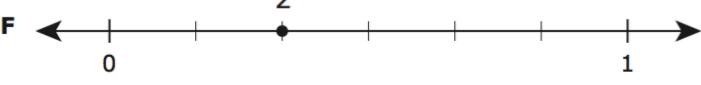
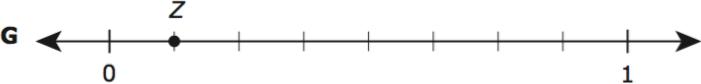
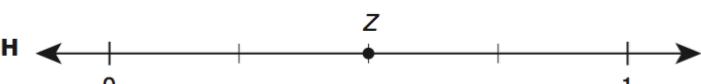
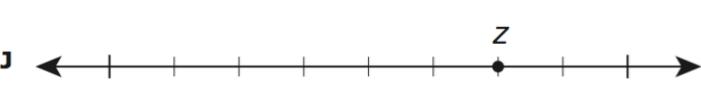
#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F    | 25    |       |
| G    | 18    |       |
| H*   | 47    |       |
| J    | 10    |       |

#### Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

| <b>3.3(F)</b> represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines | <b>Analysis of Assessed Standards</b>  |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
|---|--|-------|-------|-------|---|---|--|---|---|--|----|----|--|---|---|--|
| 2016 – Q10  | <b>Cluster</b> Fractions<br><b>Subcluster</b> Equivalency of Fractions<br><b>Content</b> Readiness<br><b>Process</b> 3.1(B), 3.1(E), 3.1(F)<br><b>Stimulus</b>   |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
| <p><b>10</b> Point X on the number line represents a fraction.</p>         |  |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
| <p>On which number line does point Z represent a fraction equivalent to the one represented by point X?</p>   |  |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
| <p><b>F</b> </p>   |  |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
| <p><b>G</b> </p>   |  |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
| <p><b>H</b> </p>   |  |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
| <p><b>J</b> </p>  |  |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
| <p>*Correct Answer (H)</p>  | <b>Data Analysis</b><br><table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>F</td> <td>5</td> <td></td> </tr> <tr> <td>G</td> <td>7</td> <td></td> </tr> <tr> <td>H*</td> <td>79</td> <td></td> </tr> <tr> <td>J</td> <td>8</td> <td></td> </tr> </tbody> </table> <b>Error Analysis</b><br><input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early<br><b>Learning from Mistakes</b><br><b>Instructional Implications</b> | Item  | State | Local | F | 5 |  | G | 7 |  | H* | 79 |  | J | 8 |  |
| Item  | State  | Local |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
| F   | 5  |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
| G   | 7  |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
| H*  | 79   |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |
| J   | 8  |       |       |       |   |   |  |   |   |  |    |    |  |   |   |  |

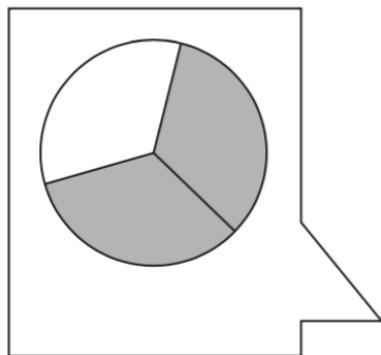
**3.3(F)** represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines

**Analysis of Assessed Standards**

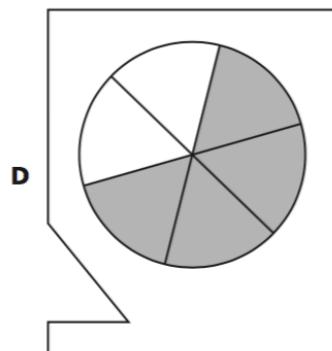
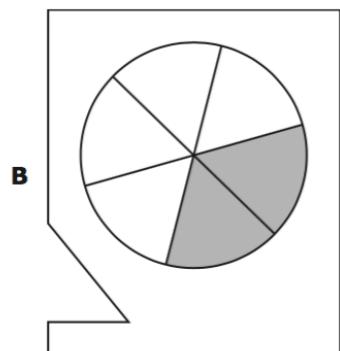
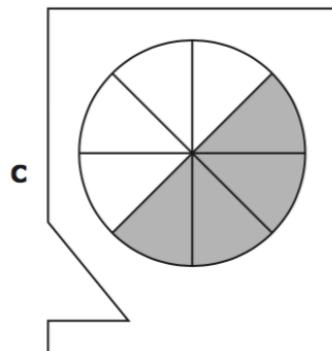
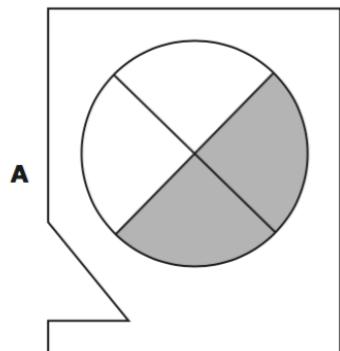
2016 – Q25

- 25** Nelson is playing a math game. He needs to match two cards that show equivalent shaded fractions.

Nelson's Card



Which of these cards shows a fraction that is equivalent to the fraction on Nelson's card?



\*Correct Answer (D)

|                   |                                |
|-------------------|--------------------------------|
| <b>Cluster</b>    | Fractions                      |
| <b>Subcluster</b> | Equivalency of Fractions       |
| <b>Content</b>    | Readiness                      |
| <b>Process</b>    | 3.1(A), 3.1(B), 3.1(E), 3.1(F) |
| <b>Stimulus</b>   |                                |

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| A    | 17    |       |
| B    | 7     |       |
| C    | 3     |       |
| D*   | 73    |       |

**Error Analysis**

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

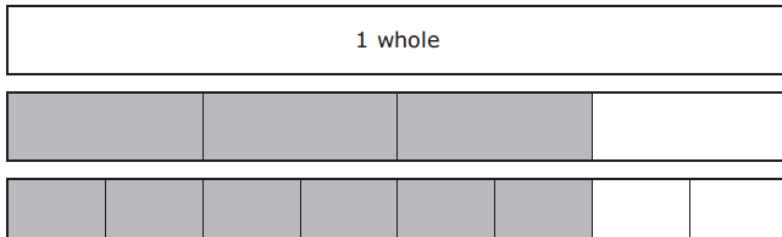
**Learning from Mistakes**  
**Instructional Implications**

| <p><b>3.3(F)</b> represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines</p> <p>2015 – Q6 Sample</p> <p><b>6</b> Alyssa used fraction strips like the ones shown in the diagram in order to find equivalent fractions.</p> | <p style="text-align: center;"><b>Fraction Strips</b></p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Fractions</td></tr> <tr> <td><b>Subcluster</b></td><td>Equivalency of Fractions</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td>3.1(A), 3.1(B), 3.1(E), 3.1(F)</td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>A*</td><td>NA</td><td></td></tr> <tr> <td>B</td><td>NA</td><td></td></tr> <tr> <td>C</td><td>NA</td><td></td></tr> <tr> <td>D</td><td>NA</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Fractions | <b>Subcluster</b> | Equivalency of Fractions | <b>Content</b> | Readiness | <b>Process</b> | 3.1(A), 3.1(B), 3.1(E), 3.1(F) | <b>Stimulus</b> |  | Item | State | Local | A* | NA |  | B | NA |  | C | NA |  | D | NA |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|--|---|---|----------------|-----------|-------------------|--------------------------|----------------|-----------|----------------|--------------------------------|-----------------|--|------|-------|-------|----|----|--|---|----|--|---|----|--|---|----|--|-----------------------------------|--|---|--|
| <b>Cluster</b>   | Fractions   |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Subcluster</b>  | Equivalency of Fractions                                  |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Content</b>   | Readiness   |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Process</b>   | 3.1(A), 3.1(B), 3.1(E), 3.1(F)                            |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Stimulus</b>  |   |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| Item   | State   | Local   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| A*   | NA  |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| B  | NA  |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| C  | NA  |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| D  | NA  |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts                |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early                |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <p>*Correct Answer (A)</p>   |   |   |                |           |                   |                          |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |

**3.3(G)** explain that two fractions are equivalent if and only if they are both represented by the same point on the number line or represent the same portion of a same size whole for an area model

! 2021 – Q12

- 12** Each strip of the diagram is shaded to represent a fraction of 1 whole.



The fractions represented are —

- F** equivalent, because the shaded area of Strip B is greater than the shaded area of Strip A
- G** not equivalent, because Strip A has 4 parts in all and Strip B has 8 parts in all
- H** equivalent, because the shaded area of Strip A is the same as the shaded area of Strip B
- J** not equivalent, because Strip A has 3 shaded parts and Strip B has 6 shaded parts

\*Correct Answer (H)

#### Analysis of Assessed Standards

|                   |                          |
|-------------------|--------------------------|
| <b>Cluster</b>    | Fractions                |
| <b>Subcluster</b> | Equivalency of Fractions |
| <b>Content</b>    | Supporting               |
| <b>Process</b>    |                          |
| <b>Stimulus</b>   |                          |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F    | 13    |       |
| G    | 9     |       |
| H*   | 65    |       |
| J    | 14    |       |

#### Error Analysis

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

**3.3(G)** explain that two fractions are equivalent if and only if they are both represented by the same point on the number line or represent the same portion of a same size whole for an area model

**Analysis of Assessed Standards**

! 2015 – Q7 Sample

- 7 Point Y is labeled on the number line.



Which statement is true?

- A Point Y represents  $\frac{3}{6}$  and  $\frac{3}{4}$ , because both fractions represent 3 equal parts of a whole.
- B Point Y represents  $\frac{3}{6}$  and  $\frac{1}{2}$ , because both fractions are exactly halfway between 0 and 1 on the number line.
- C Point Y represents  $\frac{4}{6}$  and  $\frac{3}{6}$ , because both fractions represent 6 equal parts of a whole.
- D Point Y represents  $\frac{4}{6}$  and  $\frac{1}{2}$ , because both fractions are exactly halfway between 0 and 1 on the number line.

|                   |                          |
|-------------------|--------------------------|
| <b>Cluster</b>    | Fractions                |
| <b>Subcluster</b> | Equivalency of Fractions |
| <b>Content</b>    | Supporting               |
| <b>Process</b>    | 3.1(B), 3.1(E), 3.1(G)   |
| <b>Stimulus</b>   |                          |

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| A    | NA    |       |
| B*   | NA    |       |
| C    | NA    |       |
| D    | NA    |       |

**Error Analysis**

- Guessing     Mixed Up Concepts  
 Careless Error     Stopped Too Early

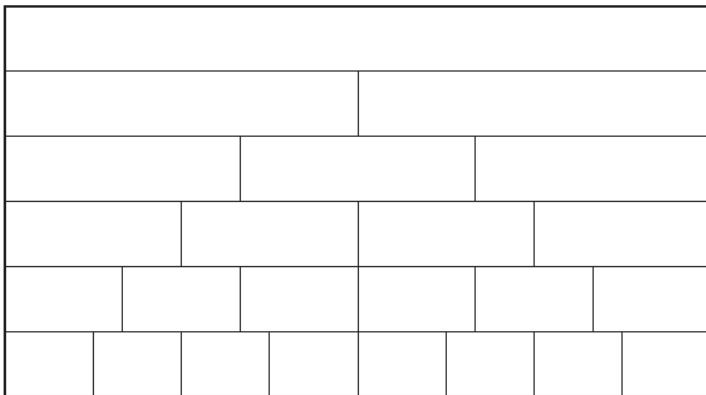
**Learning from Mistakes**  
**Instructional Implications**

\*Correct Answer (B)

**3.3(H)** compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models

2021 – Q17

**17** Fraction strips are shown.



Which comparison is true?

A  $\frac{1}{6} < \frac{1}{4}$

B  $\frac{1}{3} < \frac{1}{8}$

C  $\frac{1}{4} > \frac{1}{2}$

D  $\frac{1}{8} = \frac{2}{8}$

\*Correct Answer (A)

#### Analysis of Assessed Standards

|            |                         |
|------------|-------------------------|
| Cluster    | Fractions               |
| Subcluster | Comparison of Fractions |
| Content    | Readiness               |
| Process    |                         |
| Stimulus   |                         |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| A*   | 61    |       |
| B    | 17    |       |
| C    | 13    |       |
| D    | 8     |       |

#### Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

| <p><b>3.3(H)</b> compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models</p> <p>2021 – Q26</p> <p><b>26</b> The models shown are the same size. Each model is divided into equal-size parts and is shaded to represent a fraction.</p>  <p>Which statement is true?</p> <p><b>F</b> <math>\frac{6}{8} &lt; \frac{8}{8}</math>, because sixths are smaller parts than eighths</p> <p><b>G</b> <math>\frac{6}{8} &lt; \frac{8}{8}</math>, because 6 out of 8 parts is less than 8 out of 8 parts</p> <p><b>H</b> <math>\frac{6}{8} &gt; \frac{8}{8}</math>, because sixths are larger parts than eighths</p> <p><b>J</b> <math>\frac{6}{8} &gt; \frac{8}{8}</math>, because 6 out of 8 parts is greater than 8 out of 8 parts</p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Fractions</td></tr> <tr> <td><b>Subcluster</b></td><td>Comparison of Fractions</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>F</td><td>30</td><td></td></tr> <tr> <td>G*</td><td>43</td><td></td></tr> <tr> <td>H</td><td>17</td><td></td></tr> <tr> <td>J</td><td>9</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Fractions | <b>Subcluster</b> | Comparison of Fractions | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | F | 30 |  | G* | 43 |  | H | 17 |  | J | 9 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|--|---|----------------|-----------|-------------------|-------------------------|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|---|----|--|----|----|--|---|----|--|---|---|--|-----------------------------------|--|---|--|
| <b>Cluster</b>   | Fractions   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Subcluster</b>  | Comparison of Fractions   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Content</b>   | Readiness   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Process</b>   |   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Stimulus</b>  |   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| Item   | State   | Local          |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| F  | 30  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| G*   | 43  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| H  | 17  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| J  | 9   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |

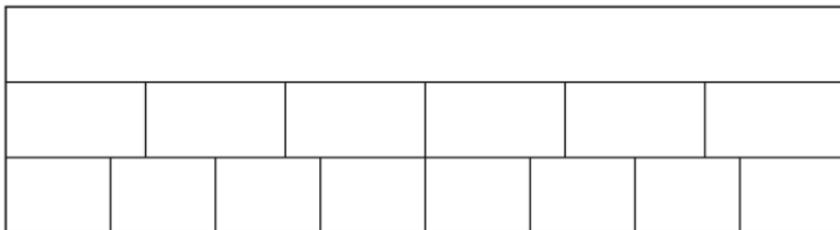
\*Correct Answer (G)

**3.3(H)** compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models

**Analysis of Assessed Standards**

! 2019 – Q13

Fraction strips are shown.



Which comparison and explanation are true?

- A  $\frac{5}{6} < \frac{5}{8}$ , because eighths are larger than sixths
- B  $\frac{5}{6} < \frac{5}{8}$ , because sixths are larger than eighths
- C  $\frac{5}{6} > \frac{5}{8}$ , because eighths are larger than sixths
- D  $\frac{5}{6} > \frac{5}{8}$ , because sixths are larger than eighths

|                   |                         |
|-------------------|-------------------------|
| <b>Cluster</b>    | Fractions               |
| <b>Subcluster</b> | Comparison of Fractions |
| <b>Content</b>    | Readiness               |
| <b>Process</b>    |                         |
| <b>Stimulus</b>   |                         |

| <b>Data Analysis</b> |              |              |
|----------------------|--------------|--------------|
| <b>Item</b>          | <b>State</b> | <b>Local</b> |
| A                    | 17           |              |
| B                    | 8            |              |
| C                    | 13           |              |
| D*                   | 62           |              |

|  |
|--|
| <b>Error Analysis</b>  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts       |
| <input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |

| <b>Learning from Mistakes</b>     |
|-----------------------------------|
| <b>Instructional Implications</b> |

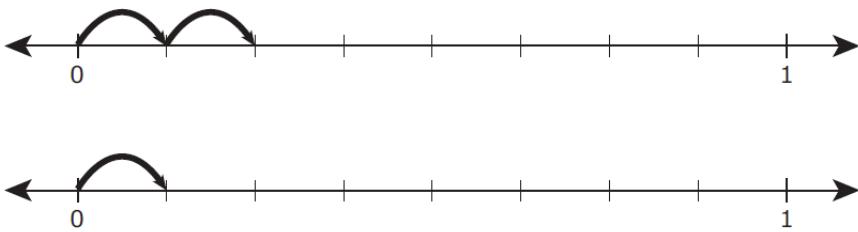
\*Correct Answer (D)

**3.3(H)** compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models

**Analysis of Assessed Standards**

2018 – Q6

**6** The number lines model two different fractions.



Which comparison of these fractions is true?

**F**  $\frac{1}{2} > \frac{1}{1}$

**G**  $\frac{2}{8} > \frac{1}{8}$

**H**  $\frac{1}{8} = \frac{2}{8}$

**J**  $\frac{2}{8} < \frac{1}{8}$

**Cluster** Fractions

**Subcluster** Comparison of Fractions

**Content** Readiness

**Process**

**Stimulus**

**Data Analysis**

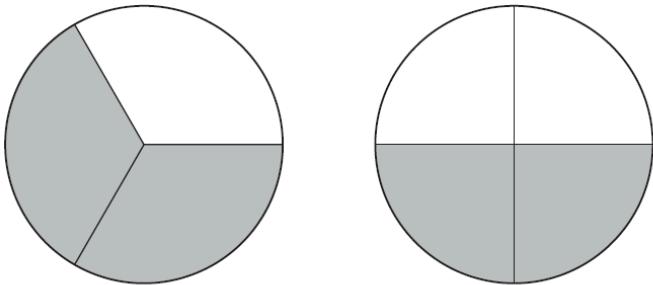
| Item | State | Local |
|------|-------|-------|
| F    | 10    |       |
| G*   | 74    |       |
| H    | 3     |       |
| J    | 13    |       |

**Error Analysis**

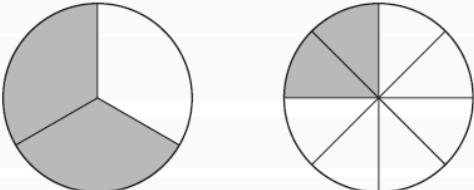
- Guessing     Mixed Up Concepts  
 Careless Error     Stopped Too Early

**Learning from Mistakes**  
**Instructional Implications**

\*Correct Answer (G)

| <p><b>3.3(H)</b> compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models</p> <p>2018 – Q28</p> <p><b>28</b> The models shown are the same size and are each divided into equal-size parts. The models are shaded to represent two fractions.</p>  <p>Which statement is true?</p> <p><b>F</b> <math>\frac{2}{3} &gt; \frac{2}{4}</math>, because thirds are larger than fourths.</p> <p><b>G</b> <math>\frac{2}{3} = \frac{2}{4}</math>, because each model has 2 parts shaded.</p> <p><b>H</b> <math>\frac{1}{3} &lt; \frac{1}{4}</math>, because 3 is less than 4.</p> <p><b>J</b> <math>\frac{1}{3} = \frac{1}{4}</math>, because each model shows 1 whole.</p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Fractions</td></tr> <tr> <td><b>Subcluster</b></td><td>Comparison of Fractions</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>F*</td><td>80</td><td></td></tr> <tr> <td>G</td><td>9</td><td></td></tr> <tr> <td>H</td><td>10</td><td></td></tr> <tr> <td>J</td><td>2</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Fractions | <b>Subcluster</b> | Comparison of Fractions | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | F* | 80 |  | G | 9 |  | H | 10 |  | J | 2 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|---|--|----------------|-----------|-------------------|-------------------------|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|----|----|--|---|---|--|---|----|--|---|---|--|-----------------------------------|--|---|--|
| <b>Cluster</b>  | Fractions  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Subcluster</b>   | Comparison of Fractions  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Content</b>  | Readiness  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Process</b>  |  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Stimulus</b>   |  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |
| Item  | State  | Local          |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |
| F*  | 80   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |
| G   | 9  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |
| H   | 10   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |
| J   | 2  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |    |  |   |   |  |                                   |  |   |  |

\*Correct Answer (F)

| <p><b>3.3(H)</b> compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models</p> <p>2017 – Q11</p> <p><b>11</b> The models shown are the same size and are each divided into equal parts. The models are shaded to show two fractions.</p>  <p>Based on the models, which statement is true?</p> <p><b>A</b> <math>\frac{1}{3}</math> is greater than <math>\frac{6}{8}</math>, because thirds are larger than eighths</p> <p><b>B</b> <math>\frac{2}{3}</math> is greater than <math>\frac{2}{8}</math>, because 2 shaded parts out of 3 parts is greater than 2 shaded parts out of 8 parts</p> <p><b>C</b> <math>\frac{1}{3}</math> is less than <math>\frac{2}{8}</math>, because 1 shaded part out of 3 parts is less than 2 shaded parts out of 8 parts</p> <p><b>D</b> <math>\frac{2}{3}</math> is less than <math>\frac{2}{8}</math>, because thirds are smaller than eighths</p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Fractions</td></tr> <tr> <td><b>Subcluster</b></td><td>Comparison of Fractions</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>A</td><td>13</td><td></td></tr> <tr> <td>B*</td><td>70</td><td></td></tr> <tr> <td>C</td><td>6</td><td></td></tr> <tr> <td>D</td><td>11</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Fractions | <b>Subcluster</b> | Comparison of Fractions | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | A | 13 |  | B* | 70 |  | C | 6 |  | D | 11 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|--|---|----------------|-----------|-------------------|-------------------------|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|---|----|--|----|----|--|---|---|--|---|----|--|-----------------------------------|--|---|--|
| <b>Cluster</b>   | Fractions   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Subcluster</b>  | Comparison of Fractions   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Content</b>   | Readiness   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Process</b>   |   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Stimulus</b>  |   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| Item   | State   | Local          |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| A  | 13  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| B*   | 70  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| C  | 6   |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| D  | 11  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early  |                |           |                   |                         |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |

\*Correct Answer (B)

|  |   |  |  |
|--|---|--|--|
| 3.3(H) compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models |   | Analysis of Assessed Standards                       |  |
| !  | 2016 – Q16  | Cluster  | Fractions                                  |
|  | <b>16</b> Bailey and Dylan each had pies that were the same size. Bailey ate $\frac{1}{3}$ of his pie. Dylan ate $\frac{1}{4}$ of his pie. Which statement is true? | Subcluster   | Comparison of Fractions                    |
|  | <b>F</b> The boys ate the same amount of pie, because both fractions have a numerator of 1.   | Content  | Readiness                                  |
|  | <b>G</b> Bailey ate more pie, because each slice of a pie cut into 3 equal parts is larger than each slice of a pie cut into 4 equal parts.                         | Process  | 3.1(A), 3.1(B), 3.1(G)                     |
|  | <b>H</b> Dylan ate more pie, because a denominator of 4 is larger than a denominator of 3.  | Stimulus   |  |
|  | <b>J</b> There is not enough information to determine who ate more pie.   | Data Analysis  |  |
|  |   | Item   | State Local                                |
|  |   | F  | 10   |
|  |   | G*   | 65   |
|  |   | H  | 21   |
|  |   | J  | 4  |
|  |   | Error Analysis                                       |  |
|  |   | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |
|  |   | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |
|  |   | Learning from Mistakes<br>Instructional Implications |  |
| *Correct Answer (G)  |   |  |  |

|  |  |  |  |
|--|--|--|--|
| 3.3(H) compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models |  | Analysis of Assessed Standards                       |  |
| 2016 – Q41   |  | Cluster  | Fractions                                  |
|  | <b>41</b> Lily is painting two identical walls. The models are shaded to represent the fraction of each wall that is painted purple. | Subcluster   | Comparison of Fractions                    |
|  |  | Content  | Readiness                                  |
|  |  | Process  | 3.1(A), 3.1(B), 3.1(E), 3.1(F)             |
|  |  | Stimulus   |  |
|  |  | Data Analysis  |  |
|  |  | Item   | State Local                                |
|  |  | A  | 3  |
|  |  | B*   | 80   |
|  |  | C  | 4  |
|  |  | D  | 14   |
|  |  | Error Analysis                                       |  |
|  |  | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |
|  |  | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |
|  |  | Learning from Mistakes<br>Instructional Implications |  |
| *Correct Answer (B)  |  |  |  |

**3.3(H)** compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models

2015 – Q8 Sample

- 8** Daniel shaded these two number lines to model two different fractions.



Based on the number lines, which comparison is true?

**A**  $\frac{1}{3} > \frac{1}{2}$

**B**  $\frac{1}{3} = \frac{1}{2}$

**C**  $\frac{1}{3} < \frac{1}{2}$

**D**  $\frac{2}{3} < \frac{1}{2}$

#### Analysis of Assessed Standards

|                   |                                |
|-------------------|--------------------------------|
| <b>Cluster</b>    | Fractions                      |
| <b>Subcluster</b> | Comparison of Fractions        |
| <b>Content</b>    | Readiness                      |
| <b>Process</b>    | 3.1(A), 3.1(B), 3.1(E), 3.1(F) |
| <b>Stimulus</b>   |                                |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    | NA    |       |
| B    | NA    |       |
| C*   | NA    |       |
| D    | NA    |       |

#### Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

\*Correct Answer (C)

# Addition and Subtraction of Whole Numbers

**3.4 Number and operations.** The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy.

**3.5 Algebraic reasoning.** The student applies mathematical process standards to analyze and create patterns and relationships.

| <p><b>3.4(A)</b> solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction</p> <p>2021 – Q3</p> <p>3 A theater sold tickets for three movies. The table shows the number of tickets sold for each movie.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Movie</th><th>1</th><th>2</th><th>3</th></tr> </thead> <tbody> <tr> <td>Number of Tickets</td><td>143</td><td>158</td><td>175</td></tr> </tbody> </table> <p>What was the total number of tickets the theater sold for these three movies?</p> <p>A 476<br/>B 366<br/>C 376<br/>D 473</p> |  | Movie | 1   | 2 | 3 | Number of Tickets | 143 | 158 | 175 | <p><b>Analysis of Assessed Standards</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><b>Cluster</b></td><td>Addition and Subtraction of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Addition/Subtraction of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Item</th><th style="width: 20%;">State</th><th style="width: 20%;">Local</th></tr> </thead> <tbody> <tr> <td>A*</td><td>78</td><td></td></tr> <tr> <td>B</td><td>7</td><td></td></tr> <tr> <td>C</td><td>8</td><td></td></tr> <tr> <td>D</td><td>7</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Guessing</td><td style="width: 50%;"><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> |  | <b>Cluster</b> | Addition and Subtraction of Whole Numbers | <b>Subcluster</b> | Addition/Subtraction of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | A* | 78 |  | B | 7 |  | C | 8 |  | D | 7 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|--|--|-------|-----|---|---|-------------------|-----|-----|-----|---|--|----------------|---|-------------------|---------------------------------------|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|----|----|--|---|---|--|---|---|--|---|---|--|-----------------------------------|--|---|--|
| Movie  | 1  | 2     | 3   |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| Number of Tickets  | 143  | 158   | 175 |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Cluster</b>   | Addition and Subtraction of Whole Numbers  |       |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Subcluster</b>  | Addition/Subtraction of Whole Numbers      |       |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Content</b>   | Readiness                                  |       |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Process</b>   |  |       |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Stimulus</b>  |  |       |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| Item   | State                                      | Local |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| A*   | 78   |       |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| B  | 7  |       |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| C  | 8  |       |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| D  | 7  |       |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts |       |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early |       |     |   |   |                   |     |     |     |   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |                                   |  |   |  |

\*Correct Answer (A)

| <p><b>3.4(A)</b> solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction</p> <p>2021 – Q20</p> <p><b>20</b> There are two lions at a zoo. The weight of the younger lion is 379 pounds. The weight of the older lion is 514 pounds.</p> <p>What is the difference in pounds between these two weights?</p> <p><b>F</b> 235 lb<br/> <b>G</b> 135 lb<br/> <b>H</b> 265 lb<br/> <b>J</b> 145 lb</p>   | <b>Analysis of Assessed Standards</b> |   |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
|---|---------------------------------------|---|------|-------|-------|---|----|--|----|----|--|---|----|--|---|---|--|
|   | <b>Cluster</b>                        | Addition and Subtraction of Whole Numbers |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
|   | <b>Subcluster</b>                     | Addition/Subtraction of Whole Numbers     |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
|   | <b>Content</b>                        | Readiness                                 |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
|   | <b>Process</b>                        |   |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
|   | <b>Stimulus</b>                       |   |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <b>Data Analysis</b>  |                                       |   |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Item</th><th style="text-align: center;">State</th><th style="text-align: center;">Local</th></tr> </thead> <tbody> <tr> <td style="text-align: center;">F</td><td style="text-align: center;">13</td><td></td></tr> <tr> <td style="text-align: center;">G*</td><td style="text-align: center;">52</td><td></td></tr> <tr> <td style="text-align: center;">H</td><td style="text-align: center;">25</td><td></td></tr> <tr> <td style="text-align: center;">J</td><td style="text-align: center;">9</td><td></td></tr> </tbody> </table> |                                       |   | Item | State | Local | F | 13 |  | G* | 52 |  | H | 25 |  | J | 9 |  |
| Item  | State                                 | Local                                     |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| F   | 13                                    |   |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| G*  | 52                                    |   |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| H   | 25                                    |   |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| J   | 9                                     |   |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <b>Error Analysis</b> <div style="display: flex; justify-content: space-around; font-size: small;"> <input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early       </div>   |                                       |   |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |                                       |   |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |

\*Correct Answer (G)

| <p><b>3.4(A)</b> solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction</p> <p>2019 – Q15</p> <p>Roger has two boxes of nails. One box has 438 nails, and the other box has 375 nails.</p> <p>How many nails does Roger have in these two boxes?</p> <p><b>A</b> 813<br/> <b>B</b> 703<br/> <b>C</b> 814<br/> <b>D</b> 713</p>  | <b>Analysis of Assessed Standards</b> |   |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
|---|---------------------------------------|---|------|-------|-------|----|----|--|---|---|--|---|---|--|---|---|--|
|   | <b>Cluster</b>                        | Addition and Subtraction of Whole Numbers |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
|   | <b>Subcluster</b>                     | Addition/Subtraction of Whole Numbers     |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
|   | <b>Content</b>                        | Readiness                                 |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
|   | <b>Process</b>                        |   |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
|   | <b>Stimulus</b>                       |   |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
| <b>Data Analysis</b>  |                                       |   |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Item</th><th style="text-align: center;">State</th><th style="text-align: center;">Local</th></tr> </thead> <tbody> <tr> <td style="text-align: center;">A*</td><td style="text-align: center;">89</td><td></td></tr> <tr> <td style="text-align: center;">B</td><td style="text-align: center;">3</td><td></td></tr> <tr> <td style="text-align: center;">C</td><td style="text-align: center;">4</td><td></td></tr> <tr> <td style="text-align: center;">D</td><td style="text-align: center;">4</td><td></td></tr> </tbody> </table> |                                       |   | Item | State | Local | A* | 89 |  | B | 3 |  | C | 4 |  | D | 4 |  |
| Item  | State                                 | Local                                     |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
| A*  | 89                                    |   |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
| B   | 3                                     |   |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
| C   | 4                                     |   |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
| D   | 4                                     |   |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
| <b>Error Analysis</b> <div style="display: flex; justify-content: space-around; font-size: small;"> <input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early       </div>   |                                       |   |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |                                       |   |      |       |       |    |    |  |   |   |  |   |   |  |   |   |  |

\*Correct Answer (A)

| <p><b>3.4(A)</b> solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction</p> <p>2019 – Q24</p> <p>Samantha, Gordon, and Diego each brought an ice chest to a picnic.</p> <ul style="list-style-type: none"> <li>The weight of Samantha's ice chest was 83 pounds.</li> <li>The weight of Gordon's ice chest was 28 pounds.</li> <li>The weight of Diego's ice chest was 37 pounds.</li> </ul> <p>What was the difference in pounds between the weight of Samantha's ice chest and the combined weight of Gordon's and Diego's ice chests?</p> <p>Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.</p> |  | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Addition and Subtraction of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Addition/Subtraction of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>18</td><td>44*</td><td></td></tr> <tr> <td></td><td>55</td><td></td></tr> <tr> <td></td><td></td><td></td></tr> <tr> <td></td><td></td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Addition and Subtraction of Whole Numbers | <b>Subcluster</b> | Addition/Subtraction of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | 18 | 44* |  |  | 55 |  |  |  |  |  |  |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|---|--|--|----------------|---|-------------------|---------------------------------------|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|----|-----|--|--|----|--|--|--|--|--|--|--|-----------------------------------|--|---|--|
| <b>Cluster</b>  | Addition and Subtraction of Whole Numbers  |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
| <b>Subcluster</b>   | Addition/Subtraction of Whole Numbers      |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
| <b>Content</b>  | Readiness                                  |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
| <b>Process</b>  |  |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
| <b>Stimulus</b>   |  |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
| Item  | State                                      | Local  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
| 18  | 44*  |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
|   | 55   |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
|   |  |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
|   |  |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |
| <p>*Correct Answer (18)</p>   |  |  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                                   |  |   |  |

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|---|--|---|-------|--|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----------------------------------|--|---|--|-------------|-------|-------|
| <p><b>3.4(A)</b> solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction</p> <p>2018 – Q14</p> <p><b>14</b> There are 297 peach trees on a farm. There are 615 peach trees on a different farm. What is the difference between the numbers of peach trees on these farms?</p> <p>Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.</p>   | <b>Analysis of Assessed Standards</b>      |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|   | <b>Cluster</b>                             | Addition and Subtraction of Whole Numbers |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|   | <b>Subcluster</b>                          | Addition/Subtraction of Whole Numbers     |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|   | <b>Content</b>                             | Readiness                                 |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|   | <b>Process</b>                             |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|   | <b>Stimulus</b>                            |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|   | <b>Data Analysis</b>                       |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| <p><b>Item</b></p> <table border="1"> <tr> <td>318</td> <td>State<br/>51*</td> <td>Local</td> </tr> <tr> <td></td> <td>49</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td> <td><input type="checkbox"/> Mixed Up Concepts</td> </tr> <tr> <td><input type="checkbox"/> Careless Error</td> <td><input type="checkbox"/> Stopped Too Early</td> </tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | 318  | State<br>51*                              | Local |  | 49 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early | <b>Item</b> | State | Local |
| 318   | State<br>51*                               | Local                                     |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|   | 49   |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
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|   |  |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| 318   | 51*  |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|   | 49   |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|   |  |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
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|   |  |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|   |  |   |       |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |

\*Correct Answer (318)

|  |  |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|--|--|---|-------|----|----|--|---|---|--|---|---|--|--|--|--|--|--|--|--|--|--|-----------------------------------|--|---|--|-------------|-------|-------|
| <p><b>3.4(A)</b> solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction</p> <p>2018 – Q27</p> <p><b>27</b> Elisha listed the amounts she paid for guitar lessons for three months.</p> <ul style="list-style-type: none"> <li>February: \$78</li> <li>March: \$90</li> <li>April: \$156</li> </ul> <p>What is the amount Elisha paid for guitar lessons for these three months?</p> <p><b>A</b> \$314<br/> <b>B</b> \$324<br/> <b>C</b> \$114<br/> <b>D</b> \$325</p>  | <b>Analysis of Assessed Standards</b>      |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|  | <b>Cluster</b>                             | Addition and Subtraction of Whole Numbers |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|  | <b>Subcluster</b>                          | Addition/Subtraction of Whole Numbers     |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|  | <b>Content</b>                             | Readiness                                 |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|  | <b>Process</b>                             |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|  | <b>Stimulus</b>                            |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|  | <b>Data Analysis</b>                       |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| <p><b>Item</b></p> <table border="1"> <tr> <td>A</td> <td>State<br/>11</td> <td>Local</td> </tr> <tr> <td>B*</td> <td>77</td> <td></td> </tr> <tr> <td>C</td> <td>4</td> <td></td> </tr> <tr> <td>D</td> <td>8</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td> <td><input type="checkbox"/> Mixed Up Concepts</td> </tr> <tr> <td><input type="checkbox"/> Careless Error</td> <td><input type="checkbox"/> Stopped Too Early</td> </tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | A  | State<br>11                               | Local | B* | 77 |  | C | 4 |  | D | 8 |  |  |  |  |  |  |  |  |  |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early | <b>Item</b> | State | Local |
| A  | State<br>11                                | Local                                     |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| B*   | 77   |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| C  | 4  |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| D  | 8  |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|  |  |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|  |  |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|  |  |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| A  | 11   |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| B*   | 77   |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| C  | 4  |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
| D  | 8  |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|  |  |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |
|  |  |   |       |    |    |  |   |   |  |   |   |  |  |  |  |  |  |  |  |  |  |                                   |  |   |  |             |       |       |

\*Correct Answer (B)

| <p><b>3.4(A)</b> solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction</p> <p>2017 – Q7</p> <p><b>7</b> Erika's goal is to practice playing her guitar for 300 minutes this week.</p> <ul style="list-style-type: none"> <li>On Sunday she practiced for 117 minutes.</li> <li>On Tuesday she practiced for 58 minutes.</li> </ul> <p>How many more minutes does Erika need to practice in order to meet her goal?</p> <p><b>A</b> 125 minutes<br/> <b>B</b> 235 minutes<br/> <b>C</b> 475 minutes<br/> <b>D</b> 175 minutes</p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Addition and Subtraction of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Addition/Subtraction of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>A*</td><td>58</td><td></td></tr> <tr> <td>B</td><td>10</td><td></td></tr> <tr> <td>C</td><td>9</td><td></td></tr> <tr> <td>D</td><td>23</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Addition and Subtraction of Whole Numbers | <b>Subcluster</b> | Addition/Subtraction of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | A* | 58 |  | B | 10 |  | C | 9 |  | D | 23 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|---|---|----------------|---|-------------------|---------------------------------------|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|----|----|--|---|----|--|---|---|--|---|----|--|-----------------------------------|--|---|--|
| <b>Cluster</b>  | Addition and Subtraction of Whole Numbers   |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Subcluster</b>   | Addition/Subtraction of Whole Numbers   |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Content</b>  | Readiness   |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Process</b>  |   |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Stimulus</b>   |   |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |
| Item  | State   | Local          |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |
| A*  | 58  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |
| B   | 10  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |
| C   | 9   |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |
| D   | 23  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early  |                |   |                   |                                       |                |           |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |    |  |                                   |  |   |  |

\*Correct Answer (A)

**3.4(A)** solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction

**Analysis of Assessed Standards**

2017 – Q19

- 19** The table shows the numbers of puzzle pieces in four puzzles. Derek put together the two puzzles that had the greatest numbers of pieces.

Puzzle Pieces

| Puzzle    | Number of Pieces |
|-----------|------------------|
| Lion      | 402              |
| Boat      | 498              |
| Garden    | 419              |
| Waterfall | 473              |

What is the total number of pieces in these two puzzles?

- A** 961
- B** 900
- C** 861
- D** Not here

|                   |   |
|-------------------|---|
| <b>Cluster</b>    | Addition and Subtraction of Whole Numbers |
| <b>Subcluster</b> | Addition/Subtraction of Whole Numbers     |
| <b>Content</b>    | Readiness                                 |
| <b>Process</b>    |   |
| <b>Stimulus</b>   |   |

|                      |              |              |
|----------------------|--------------|--------------|
| <b>Data Analysis</b> |              |              |
| <b>Item</b>          | <b>State</b> | <b>Local</b> |
| A                    | 16           |              |
| B                    | 9            |              |
| C                    | 4            |              |
| D*                   | 71           |              |

|   |  |
|---|--|
| <b>Error Analysis</b>                   |  |
| <input type="checkbox"/> Guessing       | <input type="checkbox"/> Mixed Up Concepts |
| <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |

**Learning from Mistakes  
Instructional Implications**

\*Correct Answer (D)

|  |  |              |
|--|--|--------------|
| <p><b>3.4(A)</b> solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction</p> <p>2016 – Q8</p> <p><b>8</b> Wanda traveled on an airplane three times last year.</p> <ul style="list-style-type: none"> <li>• In January she traveled 278 miles.</li> <li>• In April she traveled 652 miles.</li> <li>• In September she traveled 767 miles.</li> </ul> <p>How many more miles did Wanda travel in January and April combined than she traveled in September?</p> <p><b>F</b> 930 mi<br/> <b>G</b> 147 mi<br/> <b>H</b> 163 mi<br/> <b>J</b> 237 mi</p> | <b>Analysis of Assessed Standards</b>      |              |
| <b>Cluster</b>   | Addition and Subtraction of Whole Numbers  |              |
| <b>Subcluster</b>  | Addition/Subtraction of Whole Numbers      |              |
| <b>Content</b>   | Readiness                                  |              |
| <b>Process</b>   | 3.1(A), 3.1(B), 3.1(F)                     |              |
| <b>Stimulus</b>  |  |              |
|  |  |              |
| <b>Data Analysis</b>   |  |              |
| <b>Item</b>  | <b>State</b>                               | <b>Local</b> |
| F  | 23   |              |
| G  | 5  |              |
| H*   | 65   |              |
| J  | 8  |              |
| <b>Error Analysis</b>  |  |              |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts |              |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early |              |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |  |              |
|  |  |              |
| *Correct Answer (H)  |  |              |

|  |  |              |
|--|--|--------------|
| <p><b>3.4(A)</b> solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction</p> <p>2016 – Q35</p> <p><b>35</b> Adyssen started with \$87 in her bank account. She put \$213 into her account last week and another \$137 this week. What is the total amount Adyssen now has in her bank account?</p> <p>Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.</p> | <b>Analysis of Assessed Standards</b>      |              |
| <b>Cluster</b>   | Addition and Subtraction of Whole Numbers  |              |
| <b>Subcluster</b>  | Addition/Subtraction of Whole Numbers      |              |
| <b>Content</b>   | Readiness                                  |              |
| <b>Process</b>   | 3.1(A), 3.1(B), 3.1(F)                     |              |
| <b>Stimulus</b>  |  |              |
|  |  |              |
| <b>Data Analysis</b>   |  |              |
| <b>Item</b>  | <b>State</b>                               | <b>Local</b> |
| 437  | 67*  |              |
|  | 32   |              |
|  |  |              |
|  |  |              |
| <b>Error Analysis</b>  |  |              |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts |              |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early |              |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |  |              |
|  |  |              |
| *Correct Answer (437)  |  |              |

**3.4(A)** solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction

! 2016 – Q46

**46** Mr. Thompson sold 247 meals on Tuesday at his restaurant. He sold 516 meals on Wednesday. What is the difference between the numbers of meals Mr. Thompson sold on these two days?

**F** 763

**G** 331

**H** 379

**J** 269

#### Analysis of Assessed Standards

|            |   |
|------------|---|
| Cluster    | Addition and Subtraction of Whole Numbers |
| Subcluster | Addition/Subtraction of Whole Numbers     |
| Content    | Readiness                                 |
| Process    | 3.1(A), 3.1(B), 3.1(F)                    |
| Stimulus   |   |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F    | 27    |       |
| G    | 8     |       |
| H    | 5     |       |
| J*   | 59    |       |

#### Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

\*Correct Answer (J)

**3.4(A)** solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction

**Analysis of Assessed Standards**

2015 – Q9 Sample

**9** Ms. Elizondo shipped yogurt cups to stores on Monday.

- She shipped 648 cups of strawberry yogurt.
- She shipped 216 cups of peach yogurt.
- She shipped 264 cups of vanilla yogurt.

How many more cups of strawberry yogurt did Ms. Elizondo ship than cups of peach and vanilla yogurt combined?

**A** 168

**B** 480

**C** 248

**D** 178

|                   |   |
|-------------------|---|
| <b>Cluster</b>    | Addition and Subtraction of Whole Numbers |
| <b>Subcluster</b> | Addition/Subtraction of Whole Numbers     |
| <b>Content</b>    | Readiness                                 |
| <b>Process</b>    | 3.1(A), 3.1(B), 3.1(F)                    |
| <b>Stimulus</b>   |   |

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| A*   | NA    |       |
| B    | NA    |       |
| C    | NA    |       |
| D    | NA    |       |

**Error Analysis**

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

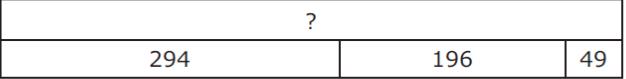
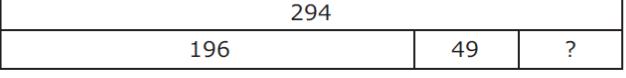
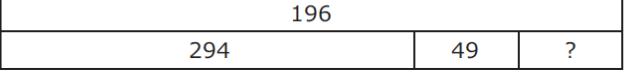
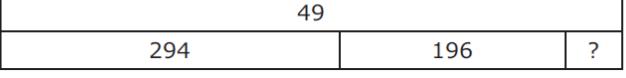
**Learning from Mistakes**  
**Instructional Implications**

\*Correct Answer (A)

| <b>3.5(A)</b> represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations                     |  | <b>Analysis of Assessed Standards</b>      |   |  |  |
|---|--|--|---|--|--|
| 2021 – Q22  |  | <b>Cluster</b>                             | Addition and Subtraction of Whole Numbers |  |  |
| <b>22</b> A cafeteria sold a total of 513 drinks on Wednesday. The table shows the number of each type of drink that was sold. The number of bottles of milk is missing from the table. |  | <b>Subcluster</b>                          | Addition/Subtraction of Whole Numbers     |  |  |
|   |  | <b>Content</b>                             | Readiness                                 |  |  |
|   |  | <b>Process</b>                             |   |  |  |
|   |  | <b>Stimulus</b>                            |   |  |  |
|   |  |  |   |  |  |
| <b>Data Analysis</b>  |  |  |   |  |  |
|   |  | <b>Item</b>                                | <b>State</b>                              |  |  |
| <b>F</b> $172 + 263 = 435$  |  | <b>20</b>                                  |   |  |  |
| $513 + 435 = \square$   |  |  |   |  |  |
| <b>G</b> $263 - 172 = 91$   |  | <b>13</b>                                  |   |  |  |
| $513 - 91 = \square$  |  |  |   |  |  |
| <b>H</b> $513 - 172 = 341$  |  | <b>18</b>                                  |   |  |  |
| $341 + 263 = \square$   |  |  |   |  |  |
| <b>J</b> $172 + 263 = 435$  |  | <b>48</b>                                  |   |  |  |
| $513 - 435 = \square$   |  |  |   |  |  |
| <b>Error Analysis</b>   |  |  |   |  |  |
| <input type="checkbox"/> Guessing   |  | <input type="checkbox"/> Mixed Up Concepts |   |  |  |
| <input type="checkbox"/> Careless Error   |  | <input type="checkbox"/> Stopped Too Early |   |  |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |  |  |   |  |  |
| *Correct Answer (J)   |  |  |   |  |  |

|   |  |  |
|---|--|--|
| <b>3.5(A)</b> represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations | <b>Analysis of Assessed Standards</b>                        |  |
| 2019 – Q7   | <b>Cluster</b>   | Addition and Subtraction of Whole Numbers  |
| Freddie had \$256 in his bank account.  | <b>Subcluster</b>  | Addition/Subtraction of Whole Numbers      |
| <ul style="list-style-type: none"> <li>On Monday he put \$50 more into his account.</li> <li>On Tuesday he took out \$87 to buy a bicycle.</li> </ul>               | <b>Content</b>   | Readiness                                  |
| Which equation can be used to find the amount of money Freddie had in his bank account after he took out money on Tuesday?  | <b>Process</b>   |  |
| <b>A</b> $256 - 50 - 87 = \square$  | <b>Stimulus</b>  |  |
| <b>B</b> $256 + 50 + 87 = \square$  | <b>Data Analysis</b>   |  |
| <b>C</b> $250 - 50 + 87 = \square$  | <b>Item</b>  | <b>State</b>                               |
| <b>D</b> $256 + 50 - 87 = \square$  | A  | 4  |
|   | B  | 3  |
|   | C  | 3  |
|   | D*   | 90   |
|   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                            | <input type="checkbox"/> Mixed Up Concepts |
|   | <input type="checkbox"/> Careless Error                      | <input type="checkbox"/> Stopped Too Early |
| *Correct Answer (D)   | <b>Learning from Mistakes<br/>Instructional Implications</b> |  |

|   |  |  |
|---|--|--|
| <b>3.5(A)</b> represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations | <b>Analysis of Assessed Standards</b>                        |  |
| <b>!</b> 2018 – Q12   | <b>Cluster</b>   | Addition and Subtraction of Whole Numbers  |
| <b>12</b> Tyrese had 572 baseball cards. He sold some of the baseball cards and then had 98 baseball cards left.  | <b>Subcluster</b>  | Addition/Subtraction of Whole Numbers      |
| Which equation could NOT be used to find the number of baseball cards Tyrese sold?  | <b>Content</b>   | Readiness                                  |
| <b>F</b> $572 - \square = 98$   | <b>Process</b>   |  |
| <b>G</b> $572 - 98 = \square$   | <b>Stimulus</b>  |  |
| <b>H</b> $98 + \square = 572$   | <b>Data Analysis</b>   |  |
| <b>J</b> $98 + 572 = \square$   | <b>Item</b>  | <b>State</b>                               |
|   | F  | 15   |
|   | G  | 17   |
|   | H  | 10   |
|   | J*   | 58   |
|   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                            | <input type="checkbox"/> Mixed Up Concepts |
|   | <input type="checkbox"/> Careless Error                      | <input type="checkbox"/> Stopped Too Early |
| *Correct Answer (J)   | <b>Learning from Mistakes<br/>Instructional Implications</b> |  |

| <b>3.5(A)</b> represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations   | <b>Analysis of Assessed Standards</b>   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
|---|---|----------------|---|-------------------|---------------------------------------|----------------|-----------|----------------|--|-----------------|--|----------------------|--|--|------|-------|-------|---|----|--|----|----|--|---|---|--|---|---|--|-----------------------|--|-----------------------------------|--|---|--|--|--|--|--|
| 2018 – Q30<br><b>30</b> There are a total of 294 restaurants in a city. <ul style="list-style-type: none"> <li>• Of these restaurants, 196 are along the highways, and 49 are downtown.</li> <li>• The rest of the restaurants are in shopping malls.</li> </ul> <p>Which model can be used to find the number of restaurants in the city that are in shopping malls?</p> <p><b>F</b> </p> <p><b>G</b> </p> <p><b>H</b> </p> <p><b>J</b> </p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;"><b>Cluster</b></td><td style="padding: 2px;">Addition and Subtraction of Whole Numbers</td></tr> <tr> <td style="padding: 2px;"><b>Subcluster</b></td><td style="padding: 2px;">Addition/Subtraction of Whole Numbers</td></tr> <tr> <td style="padding: 2px;"><b>Content</b></td><td style="padding: 2px;">Readiness</td></tr> <tr> <td style="padding: 2px;"><b>Process</b></td><td style="padding: 2px;"></td></tr> <tr> <td style="padding: 2px;"><b>Stimulus</b></td><td style="padding: 2px;"></td></tr> </table><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="text-align: center; background-color: #cccccc;"><b>Data Analysis</b></td></tr> <tr> <th style="background-color: #cccccc;">Item</th><th style="background-color: #cccccc;">State</th><th style="background-color: #cccccc;">Local</th></tr> <tr> <td style="text-align: center;">F</td><td style="text-align: center;">19</td><td></td></tr> <tr> <td style="text-align: center;">G*</td><td style="text-align: center;">68</td><td></td></tr> <tr> <td style="text-align: center;">H</td><td style="text-align: center;">7</td><td></td></tr> <tr> <td style="text-align: center;">J</td><td style="text-align: center;">6</td><td></td></tr> </table><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center; background-color: #cccccc;"><b>Error Analysis</b></td></tr> <tr> <td style="text-align: center;"><input type="checkbox"/> Guessing</td><td style="text-align: center;"><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td style="text-align: center;"><input type="checkbox"/> Careless Error</td><td style="text-align: center;"><input type="checkbox"/> Stopped Too Early</td></tr> </table><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center; background-color: #cccccc;"><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></td></tr> <tr> <td colspan="2"></td></tr> </table> | <b>Cluster</b> | Addition and Subtraction of Whole Numbers | <b>Subcluster</b> | Addition/Subtraction of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | <b>Data Analysis</b> |  |  | Item | State | Local | F | 19 |  | G* | 68 |  | H | 7 |  | J | 6 |  | <b>Error Analysis</b> |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |  |  |
| <b>Cluster</b>  | Addition and Subtraction of Whole Numbers   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| <b>Subcluster</b>   | Addition/Subtraction of Whole Numbers   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| <b>Content</b>  | Readiness   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| <b>Process</b>  |   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| <b>Stimulus</b>   |   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| <b>Data Analysis</b>  |   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| Item  | State   | Local          |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| F   | 19  |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| G*  | 68  |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| H   | 7   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| J   | 6   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| <b>Error Analysis</b>   |   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts  |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early  |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |
|   |   |                |   |                   |                                       |                |           |                |  |                 |  |                      |  |  |      |       |       |   |    |  |    |    |  |   |   |  |   |   |  |                       |  |                                   |  |   |  |  |  |  |  |

\*Correct Answer (G)

|   |  |  |
|---|--|--|
| <b>3.5(A)</b> represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations | <b>Analysis of Assessed Standards</b>                              |  |
| 2017 – Q1   | <b>Cluster</b>   | Addition and Subtraction of Whole Numbers  |
| <b>1</b> An art teacher had 736 crayons.  | <b>Subcluster</b>  | Addition/Subtraction of Whole Numbers      |
| • She threw away 197 broken crayons.<br>• Then she bought 150 more crayons.   | <b>Content</b>   | Readiness                                  |
| Which equation shows how to find the number of crayons the art teacher has now?   | <b>Process</b>   |  |
| <b>A</b> $736 - 197 - 150 = \square$  | <b>Stimulus</b>  |  |
| <b>B</b> $736 - 197 + 150 = \square$  | <b>Data Analysis</b>   |  |
| <b>C</b> $736 + 197 + 150 = \square$  | <b>Item</b>  | <b>State</b>                               |
| <b>D</b> $736 + 197 - 150 = \square$  | A  | 4  |
|   | B*   | 91   |
|   | C  | 2  |
|   | D  | 3  |
| *Correct Answer (B)   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts |
|   | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |

|   |                                       |   |
|---|---------------------------------------|---|
| <b>3.5(A)</b> represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations | <b>Analysis of Assessed Standards</b> |   |
| 2017 – Q28  | <b>Cluster</b>                        | Addition and Subtraction of Whole Numbers |
| <b>28</b> Timothy wants to buy a camera that costs \$75. He has saved \$23, as shown in the model.  | <b>Subcluster</b>                     | Addition/Subtraction of Whole Numbers     |
|   | <b>Content</b>                        | Readiness                                 |
|   | <b>Process</b>                        |   |
|   | <b>Stimulus</b>                       |   |
| <b>Data Analysis</b>  |                                       |   |
|   | <b>Item</b>                           | <b>State</b>                              |
| F   | 7                                     |   |
| G   | 20                                    |   |
| H*  | 70                                    |   |
| J   | 3                                     |   |
| <b>Error Analysis</b>   |                                       |   |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early  |                                       |   |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |                                       |   |
|   |                                       |   |

\*Correct Answer (H)

|  |  |   |
|--|--|---|
| <b>3.5(A)</b> represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations  | <b>Analysis of Assessed Standards</b>      |   |
| 2016 – Q4  | <b>Cluster</b>                             | Addition and Subtraction of Whole Numbers |
| <b>4</b> Rita had two boxes of ribbons.  | <b>Subcluster</b>                          | Addition/Subtraction of Whole Numbers     |
| <ul style="list-style-type: none"> <li>She had 37 large ribbons in the first box.</li> <li>She had 56 small ribbons in the second box.</li> <li>She gave 28 of the large ribbons to her sister.</li> </ul> | <b>Content</b>                             | Readiness                                 |
| Which number sentence can be used to find the number of ribbons Rita had left in the two boxes?  | <b>Process</b>                             | 3.1(A), 3.1(B), 3.1(D), 3.1(F)            |
| <b>F</b> $56 + 28 + 37 = \square$  | <b>Stimulus</b>                            |   |
| <b>G</b> $37 - 28 + 56 = \square$  |  |   |
| <b>H</b> $37 + 28 - 56 = \square$  |  |   |
| <b>J</b> $56 + 28 - 37 = \square$  |  |   |
| <b>Data Analysis</b>   |  |   |
| <b>Item</b>  | <b>State</b>                               | <b>Local</b>                              |
| <b>F</b>   | 6  |   |
| <b>G*</b>  | 60   |   |
| <b>H</b>   | 17   |   |
| <b>J</b>   | 17   |   |
| <b>Error Analysis</b>  |  |   |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts |   |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early |   |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |  |   |
|  |  |   |

\*Correct Answer (G)

|   |  |   |
|---|--|---|
| <b>3.5(A)</b> represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations   | <b>Analysis of Assessed Standards</b>      |   |
| <b>!</b> 2016 – Q28   | <b>Cluster</b>                             | Addition and Subtraction of Whole Numbers |
| <b>28</b> There were 25 people in a library. Some people left the library and went home. Then there were 13 people remaining in the library. Which number line represents one way to determine the number of people who left the library? | <b>Subcluster</b>                          | Addition/Subtraction of Whole Numbers     |
|   | <b>Content</b>                             | Readiness                                 |
|   | <b>Process</b>                             | 3.1(A), 3.1(B), 3.1(D), 3.1(F)            |
|   | <b>Stimulus</b>                            |   |
| <b>Data Analysis</b>  |  |   |
| <b>Item</b>   | <b>State</b>                               | <b>Local</b>                              |
| <b>F</b>  | 11   |   |
| <b>G</b>  | 11   |   |
| <b>H</b>  | 8  |   |
| <b>J*</b>   | 71   |   |
| <b>Error Analysis</b>   |  |   |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts |   |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early |   |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |  |   |
|   |  |   |

\*Correct Answer (J)

| <p><b>3.5(A)</b> represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations</p>                  | <p><b>Analysis of Assessed Standards</b></p>  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
|---|---|-------|-------|-------|---|----|--|---|----|--|---|----|--|----|----|--|
| <p>2015 – Q12 Sample</p>  | <p><b>Cluster</b> Addition and Subtraction of Whole Numbers</p>   |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p><b>12</b> There were 35 pretzels at a bakery. A baker made 20 more pretzels. The baker then sold 11 pretzels. Which equation shows how to find the number of pretzels there are now?</p> | <p><b>Subcluster</b> Addition/Subtraction of Whole Numbers</p>  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p><b>A</b> <math>35 + 20 + 11 = \square</math></p>   | <p><b>Content</b> Readiness</p>   |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p><b>B</b> <math>35 - 20 + 11 = \square</math></p>   | <p><b>Process</b> 3.1(A), 3.1(B), 3.1(D), 3.1(F)</p>  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p><b>C</b> <math>35 - 20 - 11 = \square</math></p>   | <p><b>Stimulus</b></p>  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p><b>D</b> <math>35 + 20 - 11 = \square</math></p>   | <p><b>Data Analysis</b></p>   |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p></p>   | <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>NA</td> <td></td> </tr> <tr> <td>B</td> <td>NA</td> <td></td> </tr> <tr> <td>C</td> <td>NA</td> <td></td> </tr> <tr> <td>D*</td> <td>NA</td> <td></td> </tr> </tbody> </table> | Item  | State | Local | A | NA |  | B | NA |  | C | NA |  | D* | NA |  |
| Item  | State   | Local |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| A   | NA  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| B   | NA  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| C   | NA  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| D*  | NA  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p></p>   | <p><b>Error Analysis</b></p> <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts</p> <p><input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p>  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p></p>   | <p><b>Learning from Mistakes</b></p> <p><b>Instructional Implications</b></p>   |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p>*Correct Answer (D)</p>  | <p></p>   |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |

| <p><b>3.4(B)</b> round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems</p>               | <p><b>Analysis of Assessed Standards</b></p>   |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
|--|--|--|---|-------------------|-----------------------------|----------------|--------------|----------------|-----|-----------------|-----|----|--|---|---|--|---|---|--|-----------------------|--|--|-----------------------------------|--|--|---|--|--|-------------------------------|--|--|-----------------------------------|--|--|
| <p>! 2021 – Q8</p> <p>8 The table shows the number of snow cones sold at a shop on each of three days.</p>   | <table border="1"> <tr> <th colspan="2">Snow Cones</th> </tr> <tr> <th>Day</th> <th>Number Sold</th> </tr> <tr> <td>Friday</td> <td>273</td> </tr> <tr> <td>Saturday</td> <td>123</td> </tr> <tr> <td>Sunday</td> <td>305</td> </tr> </table>  | Snow Cones                                 |   | Day               | Number Sold                 | Friday         | 273          | Saturday       | 123 | Sunday          | 305 |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| Snow Cones   |  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| Day  | Number Sold  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| Friday   | 273  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| Saturday   | 123  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| Sunday   | 305  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <p>Which answer choice is the best estimate of the total number of snow cones sold on these three days?</p> <p>F 600<br/>G 700<br/>H 900<br/>J 800</p> | <table border="1"> <tr> <td><b>Cluster</b></td><td>Addition and Subtraction of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Estimation of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Supporting</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table>   | <b>Cluster</b>                             | Addition and Subtraction of Whole Numbers | <b>Subcluster</b> | Estimation of Whole Numbers | <b>Content</b> | Supporting   | <b>Process</b> |     | <b>Stimulus</b> |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <b>Cluster</b>   | Addition and Subtraction of Whole Numbers  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <b>Subcluster</b>  | Estimation of Whole Numbers  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <b>Content</b>   | Supporting   |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <b>Process</b>   |  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <b>Stimulus</b>  |  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <p>*Correct Answer (G)</p>   | <table border="1"> <tr> <td colspan="3"><b>Data Analysis</b></td> </tr> <tr> <td><b>Item</b></td><td><b>State</b></td><td><b>Local</b></td></tr> <tr> <td>F</td><td>19</td><td></td></tr> <tr> <td>G*</td><td>71</td><td></td></tr> <tr> <td>H</td><td>5</td><td></td></tr> <tr> <td>J</td><td>5</td><td></td></tr> <tr> <td colspan="3"><b>Error Analysis</b></td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td colspan="2"><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> <tr> <td colspan="3"><b>Learning from Mistakes</b></td> </tr> <tr> <td colspan="3"><b>Instructional Implications</b></td> </tr> </table> | <b>Data Analysis</b>                       |   |                   | <b>Item</b>                 | <b>State</b>   | <b>Local</b> | F              | 19  |                 | G*  | 71 |  | H | 5 |  | J | 5 |  | <b>Error Analysis</b> |  |  | <input type="checkbox"/> Guessing |  | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error |  | <input type="checkbox"/> Stopped Too Early | <b>Learning from Mistakes</b> |  |  | <b>Instructional Implications</b> |  |  |
| <b>Data Analysis</b>   |  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <b>Item</b>  | <b>State</b>   | <b>Local</b>                               |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| F  | 19   |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| G*   | 71   |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| H  | 5  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| J  | 5  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <b>Error Analysis</b>  |  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <input type="checkbox"/> Guessing  |  | <input type="checkbox"/> Mixed Up Concepts |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <input type="checkbox"/> Careless Error  |  | <input type="checkbox"/> Stopped Too Early |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <b>Learning from Mistakes</b>  |  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |
| <b>Instructional Implications</b>  |  |  |   |                   |                             |                |              |                |     |                 |     |    |  |   |   |  |   |   |  |                       |  |  |                                   |  |  |   |  |  |                               |  |  |                                   |  |  |

| 3.4(B) round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems   | Analysis of Assessed Standards   |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
|--|--|-------|-------|-------|---|----|--|---|----|--|---|---|--|----|----|--|--|
| <p>! 2016 – Q33</p> <p><b>33</b> Vicente hung three posters in his bedroom.</p> <ul style="list-style-type: none"> <li>The first poster had a length of 59 centimeters.</li> <li>The second poster had a length of 92 centimeters.</li> <li>The third poster had a length of 127 centimeters.</li> </ul> <p>What is the best estimate of the total length of these three posters in centimeters?</p> <p><b>A</b> 260 cm<br/> <b>B</b> 350 cm<br/> <b>C</b> 240 cm<br/> <b>D</b> 280 cm</p> | <p><b>Cluster</b> Addition and Subtraction of Whole Numbers</p> <p><b>Subcluster</b> Estimation of Whole Numbers</p> <p><b>Content</b> Supporting</p> <p><b>Process</b> 3.1(A), 3.1(B), 3.1(C), 3.1(F)</p> <p><b>Stimulus</b></p>  |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
|  |  |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
|  | <b>Data Analysis</b>   |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
|  | <table border="1"> <thead> <tr> <th data-bbox="1114 466 1220 498">Item</th> <th data-bbox="1220 466 1326 498">State</th> <th data-bbox="1326 466 1486 498">Local</th> </tr> </thead> <tbody> <tr> <td data-bbox="1114 498 1220 530">A</td> <td data-bbox="1220 498 1326 530">14</td> <td data-bbox="1326 498 1486 530"></td> </tr> <tr> <td data-bbox="1114 530 1220 561">B</td> <td data-bbox="1220 530 1326 561">10</td> <td data-bbox="1326 530 1486 561"></td> </tr> <tr> <td data-bbox="1114 561 1220 593">C</td> <td data-bbox="1220 561 1326 593">9</td> <td data-bbox="1326 561 1486 593"></td> </tr> <tr> <td data-bbox="1114 593 1220 671">D*</td> <td data-bbox="1220 593 1326 671">67</td> <td data-bbox="1326 593 1486 671"></td> </tr> </tbody> </table> | Item  | State | Local | A | 14 |  | B | 10 |  | C | 9 |  | D* | 67 |  |  |
| Item   | State  | Local |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
| A  | 14   |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
| B  | 10   |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
| C  | 9  |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
| D*   | 67   |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
|  | <b>Error Analysis</b>  |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
|  | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts   |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
|  | <input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early   |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
|  | <b>Learning from Mistakes</b>  |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
|  | <b>Instructional Implications</b>  |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |
| *Correct Answer (D)  |  |       |       |       |   |    |  |   |    |  |   |   |  |    |    |  |  |

| 3.4(C) determine the value of a collection of coins and bills  |             | Analysis of Assessed Standards             |   |  |  |
|--|-------------|--|---|--|--|
| <b>!</b> 2021 – Q4   |             | <b>Cluster</b>                             | Addition and Subtraction of Whole Numbers |  |  |
| <b>4</b> Owen received the coins and bills shown when he sold lemonade.  |             | <b>Subcluster</b>                          | Money                                     |  |  |
|  |             | <b>Content</b>                             | Supporting                                |  |  |
|  |             | <b>Process</b>                             |   |  |  |
|  |             | <b>Stimulus</b>                            |   |  |  |
| <b>Data Analysis</b>   |             |  |   |  |  |
|  | <b>Item</b> | <b>State</b>                               | <b>Local</b>                              |  |  |
| F  | 17          |  |   |  |  |
| G  | 11          |  |   |  |  |
| H*   | 62          |  |   |  |  |
| J  | 11          |  |   |  |  |
| <b>Error Analysis</b>  |             |  |   |  |  |
| <input type="checkbox"/> Guessing  |             | <input type="checkbox"/> Mixed Up Concepts |   |  |  |
| <input type="checkbox"/> Careless Error  |             | <input type="checkbox"/> Stopped Too Early |   |  |  |
| <b>Learning from Mistakes</b>  |             |  |   |  |  |
| <b>Instructional Implications</b>  |             |  |   |  |  |
| <p>What is the value of the coins and bills Owen received?</p> <p><b>F</b> \$8.85<br/> <b>G</b> \$9.00<br/> <b>H</b> \$9.10<br/> <b>J</b> \$8.90</p> |             |  |   |  |  |
| <p>*Correct Answer (H)</p>   |             |  |   |  |  |

**3.4(C)** determine the value of a collection of coins and bills

2019 – Q31

Dana used the money shown to buy a snack.



What amount of money did Dana use to buy the snack?

- A** \$1.37
- B** \$1.32
- C** \$1.40
- D** \$1.27

\*Correct Answer (B)

#### Analysis of Assessed Standards

|            |   |
|------------|---|
| Cluster    | Addition and Subtraction of Whole Numbers |
| Subcluster | Money                                     |
| Content    | Supporting                                |
| Process    |   |
| Stimulus   |   |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    | 6     |       |
| B*   | 85    |       |
| C    | 6     |       |
| D    | 3     |       |

#### Error Analysis

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

**3.4(C) determine the value of a collection of coins and bills**

2017 – Q4

- 4 Inez did laundry. She found \$6.47 in the pocket of her dad's pants. Which of the following could NOT represent the amount of money Inez found?

F



G



H



J



\*Correct Answer (H)

**Analysis of Assessed Standards**

|                   |   |
|-------------------|---|
| <b>Cluster</b>    | Addition and Subtraction of Whole Numbers |
| <b>Subcluster</b> | Money                                     |
| <b>Content</b>    | Supporting                                |
| <b>Process</b>    |   |
| <b>Stimulus</b>   |   |

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| F    | 7     |       |
| G    | 7     |       |
| H*   | 81    |       |
| J    | 5     |       |

**Error Analysis**

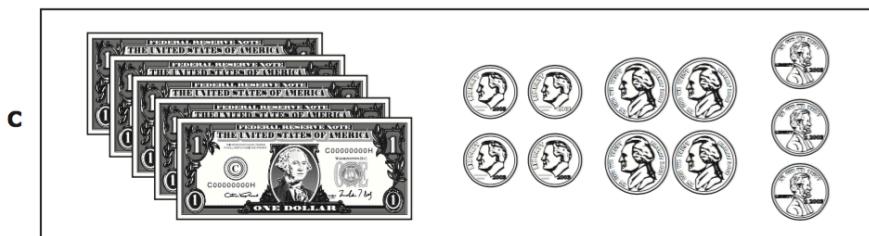
- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

**Learning from Mistakes  
Instructional Implications**

**3.4(C) determine the value of a collection of coins and bills**

! 2016 – Q29

- 29** Charlie emptied his piggy bank and counted \$5.63 in savings. Which set of bills and coins could **not** be the total amount of money that was in Charlie's piggy bank?



\*Correct Answer (B)

**Analysis of Assessed Standards**

|                   |   |
|-------------------|---|
| <b>Cluster</b>    | Addition and Subtraction of Whole Numbers |
| <b>Subcluster</b> | Money                                     |
| <b>Content</b>    | Supporting                                |
| <b>Process</b>    | 3.1(A), 3.1(B), 3.1(C), 3.1(D), 3.1(F)    |
| <b>Stimulus</b>   |   |

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| A    | 10    |       |
| B*   | 80    |       |
| C    | 6     |       |
| D    | 4     |       |

**Error Analysis**

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

**Learning from Mistakes**  
**Instructional Implications**

| 3.5(E) represent real-world relationships using number pairs in a table and verbal descriptions   |    | Analysis of Assessed Standards                       |   |    |    |    |                   |    |    |    |    |          |       |
|---|----|--|---|----|----|----|-------------------|----|----|----|----|----------|-------|
| 2021 – Q27  |    | Cluster  | Addition and Subtraction of Whole Numbers |    |    |    |                   |    |    |    |    |          |       |
| 27 Each day a bakery makes cookies and muffins. The number of cookies the bakery makes is always 12 more than the number of muffins it makes.   |    | Subcluster   | Numerical Patterns                        |    |    |    |                   |    |    |    |    |          |       |
| Which table shows the relationship between the number of muffins and the number of cookies this bakery makes?   |    | Content  | Readiness                                 |    |    |    |                   |    |    |    |    |          |       |
| <b>A</b> Bakery Muffins and Cookies   |    | Process  |   |    |    |    |                   |    |    |    |    |          |       |
| <table border="1"> <tr> <td>Number of Muffins</td><td>6</td><td>18</td><td>30</td><td>42</td></tr> <tr> <td>Number of Cookies</td><td>12</td><td>24</td><td>36</td><td>48</td></tr> </table>  |    | Number of Muffins                                    | 6   | 18 | 30 | 42 | Number of Cookies | 12 | 24 | 36 | 48 | Stimulus |       |
| Number of Muffins   | 6  | 18   | 30  | 42 |    |    |                   |    |    |    |    |          |       |
| Number of Cookies   | 12 | 24   | 36  | 48 |    |    |                   |    |    |    |    |          |       |
| <b>B</b> Bakery Muffins and Cookies   |    | Data Analysis  |   |    |    |    |                   |    |    |    |    |          |       |
| <table border="1"> <tr> <td>Number of Muffins</td><td>24</td><td>36</td><td>48</td><td>60</td></tr> <tr> <td>Number of Cookies</td><td>12</td><td>24</td><td>36</td><td>48</td></tr> </table> |    | Number of Muffins                                    | 24  | 36 | 48 | 60 | Number of Cookies | 12 | 24 | 36 | 48 | Item     | State |
| Number of Muffins   | 24 | 36   | 48  | 60 |    |    |                   |    |    |    |    |          |       |
| Number of Cookies   | 12 | 24   | 36  | 48 |    |    |                   |    |    |    |    |          |       |
|   |    | A  | 23  |    |    |    |                   |    |    |    |    |          |       |
|   |    | B  | 14  |    |    |    |                   |    |    |    |    |          |       |
|   |    | C  | 18  |    |    |    |                   |    |    |    |    |          |       |
|   |    | D*   | 45  |    |    |    |                   |    |    |    |    |          |       |
| Error Analysis  |    | Local  |   |    |    |    |                   |    |    |    |    |          |       |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts  |    |  |   |    |    |    |                   |    |    |    |    |          |       |
| <input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early  |    |  |   |    |    |    |                   |    |    |    |    |          |       |
| <b>C</b> Bakery Muffins and Cookies   |    | Learning from Mistakes<br>Instructional Implications |   |    |    |    |                   |    |    |    |    |          |       |
| <table border="1"> <tr> <td>Number of Muffins</td><td>1</td><td>2</td><td>2</td><td>4</td></tr> <tr> <td>Number of Cookies</td><td>12</td><td>24</td><td>36</td><td>48</td></tr> </table>     |    | Number of Muffins                                    | 1   | 2  | 2  | 4  | Number of Cookies | 12 | 24 | 36 | 48 |          |       |
| Number of Muffins   | 1  | 2  | 2   | 4  |    |    |                   |    |    |    |    |          |       |
| Number of Cookies   | 12 | 24   | 36  | 48 |    |    |                   |    |    |    |    |          |       |
| <b>D</b> Bakery Muffins and Cookies   |    |  |   |    |    |    |                   |    |    |    |    |          |       |
| <table border="1"> <tr> <td>Number of Muffins</td><td>12</td><td>24</td><td>36</td><td>48</td></tr> <tr> <td>Number of Cookies</td><td>24</td><td>36</td><td>48</td><td>60</td></tr> </table> |    | Number of Muffins                                    | 12  | 24 | 36 | 48 | Number of Cookies | 24 | 36 | 48 | 60 |          |       |
| Number of Muffins   | 12 | 24   | 36  | 48 |    |    |                   |    |    |    |    |          |       |
| Number of Cookies   | 24 | 36   | 48  | 60 |    |    |                   |    |    |    |    |          |       |

## 3.5(E) represent real-world relationships using number pairs in a table and verbal descriptions

! 2019 – Q21

Four people at a snack bar each bought a drink. The table shows the amount of money each person gave the cashier and the amount of money each person got back in change.

Snack-Bar Drinks

| Name   | Amount Given to Cashier (cents) | Amount of Change (cents) |
|--------|---------------------------------|--------------------------|
| Caleb  | 55                              | 3                        |
| Andrew | 60                              | 8                        |
| Morgan | 75                              | 23                       |
| Trish  | 100                             | 48                       |

Based on the relationship shown in the table, which statement is true?

- A A drink at the snack bar costs 52 cents, because the amount given to the cashier minus 52 equals the amount of change.
- B A drink at the snack bar costs 52 cents, because the amount given to the cashier plus 52 equals the amount of change.
- C A drink at the snack bar costs 48 cents, because the amount given to the cashier minus 48 equals the amount of change.
- D A drink at the snack bar costs 48 cents, because the amount given to the cashier plus 48 equals the amount of change.

\*Correct Answer (A)

## Analysis of Assessed Standards

|            |   |
|------------|---|
| Cluster    | Addition and Subtraction of Whole Numbers |
| Subcluster | Numerical Patterns                        |
| Content    | Readiness                                 |
| Process    |   |
| Stimulus   |   |

## Data Analysis

| Item | State | Local |
|------|-------|-------|
| A*   | 51    |       |
| B    | 21    |       |
| C    | 16    |       |
| D    | 12    |       |

## Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

Learning from Mistakes  
Instructional Implications

|   |  |  |   |      |      |            |      |      |      |      |               |           |  |
|---|--|--|---|------|------|------------|------|------|------|------|---------------|-----------|--|
| 3.5(E) represent real-world relationships using number pairs in a table and verbal descriptions   |  | Analysis of Assessed Standards             |   |      |      |            |      |      |      |      |               |           |  |
| 2018 – Q18  |  | Cluster                                    | Addition and Subtraction of Whole Numbers |      |      |            |      |      |      |      |               |           |  |
| <b>18</b> A store is having a sale on books. The sale price of each book is \$6 less than the regular price. Which table shows prices of different books at this store?   |  | Subcluster                                 | Numerical Patterns                        |      |      |            |      |      |      |      |               |           |  |
| <b>F</b><br><br>Book Sale<br><br><table border="1"> <tr> <td>Regular Price</td><td>\$12</td><td>\$19</td><td>\$26</td><td>\$33</td></tr> <tr> <td>Sale Price</td><td>\$18</td><td>\$25</td><td>\$32</td><td>\$39</td></tr> </table> | Regular Price  | \$12                                       | \$19                                      | \$26 | \$33 | Sale Price | \$18 | \$25 | \$32 | \$39 | Content       | Readiness |  |
| Regular Price   | \$12   | \$19                                       | \$26                                      | \$33 |      |            |      |      |      |      |               |           |  |
| Sale Price  | \$18   | \$25                                       | \$32                                      | \$39 |      |            |      |      |      |      |               |           |  |
| <b>G</b><br><br>Book Sale<br><br><table border="1"> <tr> <td>Regular Price</td><td>\$18</td><td>\$25</td><td>\$32</td><td>\$39</td></tr> <tr> <td>Sale Price</td><td>\$12</td><td>\$19</td><td>\$26</td><td>\$33</td></tr> </table> | Regular Price  | \$18                                       | \$25                                      | \$32 | \$39 | Sale Price | \$12 | \$19 | \$26 | \$33 | Process       |           |  |
| Regular Price   | \$18   | \$25                                       | \$32                                      | \$39 |      |            |      |      |      |      |               |           |  |
| Sale Price  | \$12   | \$19                                       | \$26                                      | \$33 |      |            |      |      |      |      |               |           |  |
| <b>H</b><br><br>Book Sale<br><br><table border="1"> <tr> <td>Regular Price</td><td>\$36</td><td>\$30</td><td>\$24</td><td>\$18</td></tr> <tr> <td>Sale Price</td><td>\$34</td><td>\$28</td><td>\$22</td><td>\$16</td></tr> </table> | Regular Price  | \$36                                       | \$30                                      | \$24 | \$18 | Sale Price | \$34 | \$28 | \$22 | \$16 | Stimulus      |           |  |
| Regular Price   | \$36   | \$30                                       | \$24                                      | \$18 |      |            |      |      |      |      |               |           |  |
| Sale Price  | \$34   | \$28                                       | \$22                                      | \$16 |      |            |      |      |      |      |               |           |  |
| <b>J</b><br><br>Book Sale<br><br><table border="1"> <tr> <td>Regular Price</td><td>\$36</td><td>\$30</td><td>\$24</td><td>\$18</td></tr> <tr> <td>Sale Price</td><td>\$6</td><td>\$5</td><td>\$4</td><td>\$3</td></tr> </table>     | Regular Price  | \$36                                       | \$30                                      | \$24 | \$18 | Sale Price | \$6  | \$5  | \$4  | \$3  | Data Analysis |           |  |
| Regular Price   | \$36   | \$30                                       | \$24                                      | \$18 |      |            |      |      |      |      |               |           |  |
| Sale Price  | \$6  | \$5  | \$4                                       | \$3  |      |            |      |      |      |      |               |           |  |
| *Correct Answer (G)   | Item   | State                                      | Local                                     |      |      |            |      |      |      |      |               |           |  |
|   | F  | 13   |   |      |      |            |      |      |      |      |               |           |  |
|   | G*   | 62   |   |      |      |            |      |      |      |      |               |           |  |
|   | H  | 7  |   |      |      |            |      |      |      |      |               |           |  |
|   | J  | 18   |   |      |      |            |      |      |      |      |               |           |  |
|   | Error Analysis                                       |  |   |      |      |            |      |      |      |      |               |           |  |
|   | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |   |      |      |            |      |      |      |      |               |           |  |
|   | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |   |      |      |            |      |      |      |      |               |           |  |
|   | Learning from Mistakes<br>Instructional Implications |  |   |      |      |            |      |      |      |      |               |           |  |
|   |  |  |   |      |      |            |      |      |      |      |               |           |  |

|   |   |  |   |
|---|---|--|---|
| 3.5(E) represent real-world relationships using number pairs in a table and verbal descriptions |   | Analysis of Assessed Standards             |   |
| <b>!</b>  | 2017 – Q25  | Cluster                                    | Addition and Subtraction of Whole Numbers |
| <b>25</b>   | Mr. Morales gives bonus points when a challenge question on a test is answered correctly. The table shows the relationship between test scores before and after Mr. Morales gives the bonus points. | Subcluster                                 | Numerical Patterns                        |
|   |   | Content                                    | Readiness                                 |
|   |   | Process                                    |   |
|   |   | Stimulus                                   |   |
| Data Analysis   |   |  |   |
|   | Item  | State                                      | Local                                     |
|   | A   | 9  |   |
|   | B   | 23   |   |
|   | C   | 12   |   |
|   | D*  | 56   |   |
| Error Analysis  |   |  |   |
|   | <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts |   |
|   | <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early |   |
| Learning from Mistakes<br>Instructional Implications  |   |  |   |
| <b>*Correct Answer (D)</b>  |   |  |   |

**3.5(E)** represent real-world relationships using number pairs in a table and verbal descriptions

! 2016 – Q12

- 12** Campers at a lake rented 18 more canoes than paddleboats each week during five weeks. Which table could show the numbers of canoes and paddleboats rented during these five weeks?

Canoes and Paddleboats

| Number of Canoes | Number of Paddleboats |
|------------------|-----------------------|
| 72               | 90                    |
| 37               | 55                    |
| 61               | 79                    |
| 85               | 103                   |
| 68               | 86                    |

Canoes and Paddleboats

| Number of Canoes | Number of Paddleboats |
|------------------|-----------------------|
| 72               | 54                    |
| 37               | 72                    |
| 61               | 90                    |
| 85               | 108                   |
| 68               | 126                   |

Canoes and Paddleboats

| Number of Canoes | Number of Paddleboats |
|------------------|-----------------------|
| 72               | 54                    |
| 37               | 19                    |
| 61               | 43                    |
| 85               | 67                    |
| 68               | 50                    |

Canoes and Paddleboats

| Number of Canoes | Number of Paddleboats |
|------------------|-----------------------|
| 72               | 18                    |
| 37               | 36                    |
| 61               | 54                    |
| 85               | 72                    |
| 68               | 90                    |

\*Correct Answer (H)

#### Analysis of Assessed Standards

|            |   |
|------------|---|
| Cluster    | Addition and Subtraction of Whole Numbers |
| Subcluster | Numerical Patterns                        |
| Content    | Readiness                                 |
| Process    | 3.1(A), 3.1(B), 3.1(D), 3.1(F)            |
| Stimulus   |   |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F    | 28    |       |
| G    | 9     |       |
| H*   | 43    |       |
| J    | 20    |       |

#### Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

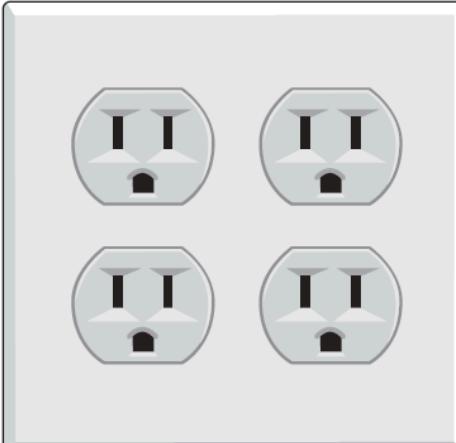
#### Learning from Mistakes Instructional Implications

# Multiplication and Division of Whole Numbers

**3.4 Number and operations.** The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy.

**3.5 Algebraic reasoning.** The student applies mathematical process standards to analyze and create patterns and relationships.

**Connected Knowledge and Skills 3.6**

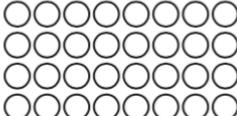
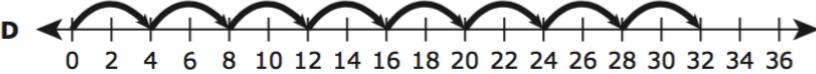
| <p><b>3.4(D)</b> determine the total number of objects when equally-sized groups of objects are combined or arranged in arrays up to 10 by 10</p> <p>2021 – Q16</p> <p><b>16</b> The electrical panel shown has 4 outlets.</p>  | <p><b>Analysis of Assessed Standards</b></p> <table border="1"><tr><td><b>Cluster</b></td><td>Multiplication and Division of Whole Numbers</td></tr><tr><td><b>Subcluster</b></td><td>Multiplication of Whole Numbers</td></tr><tr><td><b>Content</b></td><td>Supporting</td></tr><tr><td><b>Process</b></td><td></td></tr><tr><td><b>Stimulus</b></td><td></td></tr></table> <p><b>Data Analysis</b></p> <table border="1"><thead><tr><th>Item</th><th>State</th><th>Local</th></tr></thead><tbody><tr><td>F</td><td>6</td><td></td></tr><tr><td>G</td><td>7</td><td></td></tr><tr><td>H*</td><td>68</td><td></td></tr><tr><td>J</td><td>18</td><td></td></tr></tbody></table> <p><b>Error Analysis</b></p> <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/><input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Multiplication and Division of Whole Numbers | <b>Subcluster</b> | Multiplication of Whole Numbers | <b>Content</b> | Supporting | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | F | 6 |  | G | 7 |  | H* | 68 |  | J | 18 |  |
|--|--|----------------|--|-------------------|---------------------------------|----------------|------------|----------------|--|-----------------|--|------|-------|-------|---|---|--|---|---|--|----|----|--|---|----|--|
| <b>Cluster</b>   | Multiplication and Division of Whole Numbers   |                |  |                   |                                 |                |            |                |  |                 |  |      |       |       |   |   |  |   |   |  |    |    |  |   |    |  |
| <b>Subcluster</b>  | Multiplication of Whole Numbers  |                |  |                   |                                 |                |            |                |  |                 |  |      |       |       |   |   |  |   |   |  |    |    |  |   |    |  |
| <b>Content</b>   | Supporting   |                |  |                   |                                 |                |            |                |  |                 |  |      |       |       |   |   |  |   |   |  |    |    |  |   |    |  |
| <b>Process</b>   |  |                |  |                   |                                 |                |            |                |  |                 |  |      |       |       |   |   |  |   |   |  |    |    |  |   |    |  |
| <b>Stimulus</b>  |  |                |  |                   |                                 |                |            |                |  |                 |  |      |       |       |   |   |  |   |   |  |    |    |  |   |    |  |
| Item   | State  | Local          |  |                   |                                 |                |            |                |  |                 |  |      |       |       |   |   |  |   |   |  |    |    |  |   |    |  |
| F  | 6  |                |  |                   |                                 |                |            |                |  |                 |  |      |       |       |   |   |  |   |   |  |    |    |  |   |    |  |
| G  | 7  |                |  |                   |                                 |                |            |                |  |                 |  |      |       |       |   |   |  |   |   |  |    |    |  |   |    |  |
| H*   | 68   |                |  |                   |                                 |                |            |                |  |                 |  |      |       |       |   |   |  |   |   |  |    |    |  |   |    |  |
| J  | 18   |                |  |                   |                                 |                |            |                |  |                 |  |      |       |       |   |   |  |   |   |  |    |    |  |   |    |  |

\*Correct Answer (H)

| <p><b>3.4(D)</b> determine the total number of objects when equally-sized groups of objects are combined or arranged in arrays up to 10 by 10</p> | <p><b>Analysis of Assessed Standards</b></p>  |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|---|---|-------|-------|-------|---|---|--|---|---|--|---|----|--|----|----|--|
| <p>2019 – Q20</p>   | <p><b>Cluster</b> Multiplication and Division of Whole Numbers</p>  |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <p>There are 6 photographs on each page of an album. One page of the album is shown.</p>  | <p><b>Subcluster</b> Multiplication of Whole Numbers</p>  |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Content</b> Supporting</p>  |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Process</b></p>   |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Stimulus</b></p>  |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Data Analysis</b></p>   |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|    | <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>F</td> <td>5</td> <td></td> </tr> <tr> <td>G</td> <td>5</td> <td></td> </tr> <tr> <td>H</td> <td>10</td> <td></td> </tr> <tr> <td>J*</td> <td>81</td> <td></td> </tr> </tbody> </table> | Item  | State | Local | F | 5 |  | G | 5 |  | H | 10 |  | J* | 81 |  |
| Item  | State   | Local |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| F   | 5   |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| G   | 5   |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| H   | 10  |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| J*  | 81  |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <p>How many photographs are on 9 pages of the album?</p>  | <p><b>Error Analysis</b></p>  |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <p><b>F</b> 48</p>  | <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts</p>  |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <p><b>G</b> 45</p>  | <p><input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p>  |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <p><b>H</b> 15</p>  |   |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <p><b>J</b> 54</p>  |   |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p>  |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <p>*Correct Answer (J)</p>  |   |       |       |       |   |   |  |   |   |  |   |    |  |    |    |  |

| 3.4(E) represent multiplication facts by using a variety of approaches such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line, and skip counting |                                 | Analysis of Assessed Standards                       |  |
|--|---------------------------------|--|--|
| 2018 – Q25   |                                 | Cluster  | Multiplication and Division of Whole Numbers |
| Subcluster   | Multiplication of Whole Numbers | Content  | Supporting                                   |
| Process  |                                 | Stimulus   |  |
| 25 The model shown can represent two number sentences.   |                                 | Data Analysis  |  |
|    |                                 | Item   | State  |
| A $3 \times 3 =$ <input type="text"/>  |                                 | A  | 16   |
| B* $3 + 3 =$ <input type="text"/>  |                                 | B*   | 69   |
| C $3 \times 2 =$ <input type="text"/>  |                                 | C  | 12   |
| D $3 + 3 + 3 =$ <input type="text"/>   |                                 | D  | 3  |
| Which two number sentences can the model represent?  |                                 | Error Analysis                                       |  |
| <b>A</b> $3 \times 3 =$ <input type="text"/><br>$3 + 3 =$ <input type="text"/>   |                                 | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts   |
| <b>B</b> $3 \times 2 =$ <input type="text"/><br>$3 + 3 =$ <input type="text"/>   |                                 | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early   |
| <b>C</b> $2 \times 3 =$ <input type="text"/><br>$2 \times 2 \times 2 =$ <input type="text"/>   |                                 | Learning from Mistakes<br>Instructional Implications |  |
| <b>D</b> $3 + 3 + 3 =$ <input type="text"/><br>$2 + 2 + 2 =$ <input type="text"/>  |                                 |  |  |

\*Correct Answer (B)

| <p><b>3.4(E)</b> represent multiplication facts by using a variety of approaches such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line, and skip counting</p> <p>! 2016 – Q21</p> <p><b>21</b> Zachary lists some different methods he thinks he can use to solve the multiplication problem shown.</p> $8 \times 4 = ?$ <p>Which of these is <b>not</b> a method Zachary can use to get the correct answer?</p> <p><b>A</b> </p> <p><b>B</b> <math>8 \times 8 \times 8 \times 8</math></p> <p><b>C</b> 4, 8, 12, 16, 20, 24, 28, 32</p> <p><b>D</b> </p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Multiplication and Division of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Multiplication of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Supporting</td></tr> <tr> <td><b>Process</b></td><td>3.1(A), 3.1(B), 3.1(D), 3.1(F)</td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>A</td><td>11</td><td></td></tr> <tr> <td>B*</td><td>61</td><td></td></tr> <tr> <td>C</td><td>11</td><td></td></tr> <tr> <td>D</td><td>17</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Multiplication and Division of Whole Numbers | <b>Subcluster</b> | Multiplication of Whole Numbers | <b>Content</b> | Supporting | <b>Process</b> | 3.1(A), 3.1(B), 3.1(D), 3.1(F) | <b>Stimulus</b> |  | Item | State | Local | A | 11 |  | B* | 61 |  | C | 11 |  | D | 17 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|---|--|----------------|--|-------------------|---------------------------------|----------------|------------|----------------|--------------------------------|-----------------|--|------|-------|-------|---|----|--|----|----|--|---|----|--|---|----|--|-----------------------------------|--|---|--|
| <b>Cluster</b>  | Multiplication and Division of Whole Numbers   |                |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Subcluster</b>   | Multiplication of Whole Numbers  |                |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Content</b>  | Supporting   |                |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Process</b>  | 3.1(A), 3.1(B), 3.1(D), 3.1(F)   |                |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Stimulus</b>   |  |                |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |
| Item  | State  | Local          |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |
| A   | 11   |                |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |
| B*  | 61   |                |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |
| C   | 11   |                |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |
| D   | 17   |                |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts   |                |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early   |                |  |                   |                                 |                |            |                |                                |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |    |  |                                   |  |   |  |

\*Correct Answer (B)

| 3.4(F) recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts |   | Analysis of Assessed Standards             |  |
|--|---|--|--|
| 2021 – Q14   |   | Cluster                                    | Multiplication and Division of Whole Numbers |
|  |   | Subcluster                                 | Multiplication of Whole Numbers              |
|  |   | Content                                    | Supporting                                   |
|  |   | Process                                    |  |
|  |   | Stimulus                                   |  |
| Data Analysis  |   |  |  |
|  | Item                                    | State                                      | Local  |
|  | 20                                      | 62*  |  |
|  |   | 38   |  |
|  |   |  |  |
|  |   |  |  |
| Error Analysis   |   |  |  |
| *Correct Answer (20)   | <input type="checkbox"/> Guessing       | <input type="checkbox"/> Mixed Up Concepts |  |
|  | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |  |
| Learning from Mistakes<br>Instructional Implications   |   |  |  |
|  |   |  |  |

| 3.4(F) recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts |   | Analysis of Assessed Standards             |  |
|--|---|--|--|
| 2015 – Q10 Sample  |   | Cluster                                    | Multiplication and Division of Whole Numbers |
|  |   | Subcluster                                 | Multiplication of Whole Numbers              |
|  |   | Content                                    | Supporting                                   |
|  |   | Process                                    | 3.1(A), 3.1(B), 3.1(F)                       |
|  |   | Stimulus                                   |  |
| Data Analysis  |   |  |  |
|  | Item                                    | State                                      | Local  |
|  | 7*                                      | NA   |  |
|  |   |  |  |
|  |   |  |  |
|  |   |  |  |
| Error Analysis   |   |  |  |
| *Correct Answer (7)  | <input type="checkbox"/> Guessing       | <input type="checkbox"/> Mixed Up Concepts |  |
|  | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |  |
| Learning from Mistakes<br>Instructional Implications   |   |  |  |
|  |   |  |  |



|   |   |  |
|---|---|--|
| <p><b>3.4(G)</b> use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties</p> | <b>Analysis of Assessed Standards</b>   |  |
| <p>! 2021 – Q25</p>   | <b>Cluster</b>  | Multiplication and Division of Whole Numbers |
| <p><b>25</b> A softball team played in 6 tournaments last year. The team paid \$95 to play in each tournament.</p> <p>What was the total amount the softball team paid to play in these 6 tournaments?</p> <p>A \$570<br/>B \$540<br/>C \$101<br/>D \$480</p>   | <b>Subcluster</b>   | Multiplication of Whole Numbers              |
|   | <b>Content</b>  | Supporting                                   |
|   | <b>Process</b>  |  |
|   | <b>Stimulus</b>   |  |
|   | <b>Data Analysis</b>  |  |
|   | <b>Item</b>   | <b>State</b>                                 |
|   | A*  | 52   |
|   | B   | 14   |
|   | C   | 20   |
|   | D   | 14   |
| <p>*Correct Answer (A)</p>  | <b>Error Analysis</b><br><input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |  |

| <p><b>3.4(G)</b> use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties</p> <p>2017 – Q12</p> <p><b>12</b> A baseball league bought 9 boxes of baseballs. Each box contained 36 baseballs. How many baseballs did the league buy?</p> <p><b>F</b> 324</p> <p><b>G</b> 274</p> <p><b>H</b> 84</p> <p><b>J</b> 34</p>  | <b>Analysis of Assessed Standards</b> |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
|--|---------------------------------------|--|------|-------|-------|----|----|--|---|----|--|---|---|--|---|---|--|
|  | <b>Cluster</b>                        | Multiplication and Division of Whole Numbers |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
|  | <b>Subcluster</b>                     | Multiplication of Whole Numbers              |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
|  | <b>Content</b>                        | Supporting                                   |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
|  | <b>Process</b>                        |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
|  | <b>Stimulus</b>                       |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| <b>Data Analysis</b>   |                                       |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Item</th><th style="text-align: center;">State</th><th style="text-align: center;">Local</th></tr> </thead> <tbody> <tr> <td style="text-align: center;">F*</td><td style="text-align: center;">73</td><td></td></tr> <tr> <td style="text-align: center;">G</td><td style="text-align: center;">12</td><td></td></tr> <tr> <td style="text-align: center;">H</td><td style="text-align: center;">8</td><td></td></tr> <tr> <td style="text-align: center;">J</td><td style="text-align: center;">7</td><td></td></tr> </tbody> </table> |                                       |  | Item | State | Local | F* | 73 |  | G | 12 |  | H | 8 |  | J | 7 |  |
| Item   | State                                 | Local  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| F*   | 73                                    |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| G  | 12                                    |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| H  | 8                                     |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| J  | 7                                     |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| <b>Error Analysis</b>  |                                       |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early   |                                       |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |                                       |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |

\*Correct Answer (F)

| <p><b>3.4(G)</b> use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties</p> <p>2016 – Q2</p> <p><b>2</b> The members of a gym use 98 towels every day. How many towels are used in 7 days?</p> <p><b>F</b> 636</p> <p><b>G</b> 14</p> <p><b>H</b> 686</p> <p><b>J</b> 91</p>  | <b>Analysis of Assessed Standards</b> |  |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
|---|---------------------------------------|--|------|-------|-------|---|----|--|---|---|--|----|----|--|---|----|--|
|   | <b>Cluster</b>                        | Multiplication and Division of Whole Numbers |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
|   | <b>Subcluster</b>                     | Multiplication of Whole Numbers              |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
|   | <b>Content</b>                        | Supporting                                   |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
|   | <b>Process</b>                        | 3.1(A), 3.1(B), 3.1(F)                       |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
|   | <b>Stimulus</b>                       |  |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
| <b>Data Analysis</b>  |                                       |  |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Item</th><th style="text-align: center;">State</th><th style="text-align: center;">Local</th></tr> </thead> <tbody> <tr> <td style="text-align: center;">F</td><td style="text-align: center;">12</td><td></td></tr> <tr> <td style="text-align: center;">G</td><td style="text-align: center;">6</td><td></td></tr> <tr> <td style="text-align: center;">H*</td><td style="text-align: center;">70</td><td></td></tr> <tr> <td style="text-align: center;">J</td><td style="text-align: center;">12</td><td></td></tr> </tbody> </table> |                                       |  | Item | State | Local | F | 12 |  | G | 6 |  | H* | 70 |  | J | 12 |  |
| Item  | State                                 | Local  |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
| F   | 12                                    |  |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
| G   | 6                                     |  |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
| H*  | 70                                    |  |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
| J   | 12                                    |  |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
| <b>Error Analysis</b>   |                                       |  |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early  |                                       |  |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |                                       |  |      |       |       |   |    |  |   |   |  |    |    |  |   |    |  |

\*Correct Answer (H)



| <b>3.5(C)</b> describe a multiplication expression as a comparison such as $3 \times 24$ represents 3 times as much as 24 |  | <b>Analysis of Assessed Standards</b> |  |  |  |
|---|--|---------------------------------------|--|--|--|
| 2019 – Q28  |  | <b>Cluster</b>                        | Multiplication and Division of Whole Numbers |  |  |
| There are 18 spoons in a drawer. This expression represents the number of forks in the same drawer.                       |  | <b>Subcluster</b>                     | Multiplication of Whole Numbers              |  |  |
| $2 \times 18$   |  | <b>Content</b>                        | Supporting                                   |  |  |
| Which statement is true?  |  | <b>Process</b>                        |  |  |  |
| <b>F</b> There are 2 more spoons than forks in the drawer.  |  | <b>Stimulus</b>                       |  |  |  |
| <b>G</b> There are 2 more forks than spoons in the drawer.  |  |                                       |  |  |  |
| <b>H</b> There are 2 times as many forks as spoons in the drawer.   |  |                                       |  |  |  |
| <b>J</b> There are 2 times as many spoons as forks in the drawer.   |  |                                       |  |  |  |
| <b>Data Analysis</b>  |  |                                       |  |  |  |
| Item  | State                                      | Local                                 |  |  |  |
| F   | 9  |                                       |  |  |  |
| G   | 9  |                                       |  |  |  |
| H*  | 58   |                                       |  |  |  |
| J   | 24   |                                       |  |  |  |
| <b>Error Analysis</b>   |  |                                       |  |  |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts |                                       |  |  |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early |                                       |  |  |  |
| <b>Learning from Mistakes<br/>Instructional Implications</b>  |  |                                       |  |  |  |
| *Correct Answer (H)   |  |                                       |  |  |  |

|   |  |  |
|---|--|--|
| <b>3.5(C)</b> describe a multiplication expression as a comparison such as $3 \times 24$ represents 3 times as much as 24                   | <b>Analysis of Assessed Standards</b>                              |  |
| 2018 – Q20  | <b>Cluster</b>   | Multiplication and Division of Whole Numbers |
| <b>20</b> Hakeem received 13 phone calls on Tuesday. This expression can be used to show the number of phone calls he received on Saturday. | <b>Subcluster</b>  | Multiplication of Whole Numbers              |
| $13 \times 4$   | <b>Content</b>   | Supporting                                   |
| Which statement is true?  | <b>Process</b>   |  |
| <b>F</b> Hakeem received 4 more phone calls on Saturday than he received on Tuesday.  | <b>Stimulus</b>  |  |
| <b>G</b> Hakeem received 4 more phone calls on Tuesday than he received on Saturday.  | <b>Data Analysis</b>   |  |
| <b>H</b> Hakeem received 4 times as many phone calls on Saturday as he received on Tuesday.   | <b>Item</b>  | <b>State</b>                                 |
| <b>J</b> Hakeem received 4 times as many phone calls on Tuesday as he received on Saturday.   | <b>F</b>   | 13   |
|   | <b>G</b>   | 11   |
|   | <b>H*</b>  | 55   |
|   | <b>J</b>   | 21   |
| *Correct Answer (H)   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts   |
|   | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early   |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |

|   |  |  |
|---|--|--|
| <b>3.5(C)</b> describe a multiplication expression as a comparison such as $3 \times 24$ represents 3 times as much as 24 | <b>Analysis of Assessed Standards</b>                              |  |
| 2015 – Q14 Sample   | <b>Cluster</b>   | Multiplication and Division of Whole Numbers |
| <b>14</b> Tyler read 10 books. The number of books Eli read can be represented by this expression.                        | <b>Subcluster</b>  | Multiplication of Whole Numbers              |
| $4 \times 10$   | <b>Content</b>   | Supporting                                   |
| Which statement is true?  | <b>Process</b>   | 3.1(A), 3.1(B), 3.1(G)                       |
| <b>A</b> Tyler read 10 times the number of books Eli read.  | <b>Stimulus</b>  |  |
| <b>B</b> Eli read 10 times the number of books Tyler read.  | <b>Data Analysis</b>   |  |
| <b>C</b> Tyler read 4 times the number of books Eli read.   | <b>Item</b>  | <b>State</b>                                 |
| <b>D</b> Eli read 4 times the number of books Tyler read.   | <b>A</b>   | NA   |
|   | <b>B</b>   | NA   |
|   | <b>C</b>   | NA   |
|   | <b>D*</b>  | NA   |
| *Correct Answer (D)   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts   |
|   | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early   |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |

| 3.5(D) determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is either a missing factor or product |   | Analysis of Assessed Standards             |  |
|--|---|--|--|
| 2018 – Q10   |   | Cluster                                    | Multiplication and Division of Whole Numbers |
|  |   | Subcluster                                 | Multiplication of Whole Numbers              |
|  |   | Content                                    | Supporting                                   |
|  |   | Process                                    |  |
|  |   | Stimulus                                   |  |
| Data Analysis  |   |  |  |
|  | Item                                    | State                                      | Local  |
|  | F*                                      | 77   |  |
|  | G                                       | 5  |  |
|  | H                                       | 8  |  |
|  | J                                       | 10   |  |
| Error Analysis   |   |  |  |
|  | <input type="checkbox"/> Guessing       | <input type="checkbox"/> Mixed Up Concepts |  |
|  | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |  |
| Learning from Mistakes<br>Instructional Implications   |   |  |  |
| *Correct Answer (F)  |   |  |  |

|   |  |  |
|---|--|--|
| <b>3.5(D)</b> determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is either a missing factor or product | <b>Analysis of Assessed Standards</b>                              |  |
| 2016 – Q42  | <b>Cluster</b>   | Multiplication and Division of Whole Numbers |
| <b>42</b> What number goes in the $\square$ to make a true statement?   | <b>Subcluster</b>  | Multiplication of Whole Numbers              |
| $\square \times 5 = 45$   | <b>Content</b>   | Supporting                                   |
| <b>F</b> 50   | <b>Process</b>   | 3.1(B), 3.1(F)                               |
| <b>G</b> 8  | <b>Stimulus</b>  |  |
| <b>H</b> 9  | <b>Data Analysis</b>   |  |
| <b>J</b> 40   | <b>Item</b>  | <b>State</b>                                 |
|   | F  | 2  |
|   | G  | 7  |
|   | H*   | 89   |
|   | J  | 2  |
| *Correct Answer (H)   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts   |
|   | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early   |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |

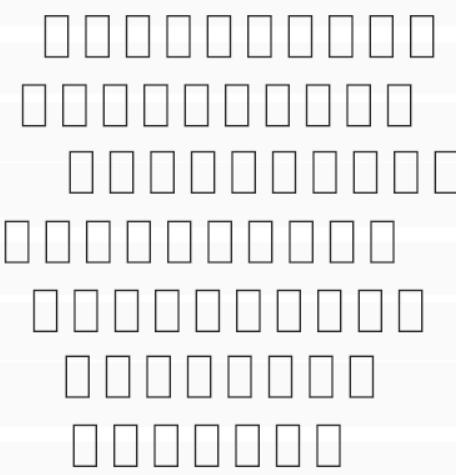
|   |  |  |
|---|--|--|
| <b>3.5(D)</b> determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is either a missing factor or product | <b>Analysis of Assessed Standards</b>                              |  |
| 2015 – Q15 Sample   | <b>Cluster</b>   | Multiplication and Division of Whole Numbers |
| <b>15</b> What number belongs in the $\square$ to make the equation true?   | <b>Subcluster</b>  | Multiplication of Whole Numbers              |
| $13 = \square \div 3$   | <b>Content</b>   | Supporting                                   |
| <b>A</b> 10   | <b>Process</b>   | 3.1(B), 3.1(F)                               |
| <b>B</b> 39   | <b>Stimulus</b>  |  |
| <b>C</b> 16   | <b>Data Analysis</b>   |  |
| <b>D</b> 3  | <b>Item</b>  | <b>State</b>                                 |
|   | A  | NA   |
|   | B*   | NA   |
|   | C  | NA   |
|   | D  | NA   |
| *Correct Answer (B)   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts   |
|   | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early   |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |

|   |  |  |
|---|--|--|
| <b>3.4(F)</b> recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts | <b>Analysis of Assessed Standards</b>                              |  |
| 2019 – Q5   | <b>Cluster</b>   | Multiplication and Division of Whole Numbers |
| Serafina put a total of 42 cupcakes into packages. She put 6 cupcakes into each package.                            | <b>Subcluster</b>  | Division of Whole Numbers                    |
| What is the total number of packages Serafina used for these cupcakes?  | <b>Content</b>   | Supporting                                   |
| Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.         | <b>Process</b>   |  |
|   | <b>Stimulus</b>  |  |
|   | <b>Data Analysis</b>   |  |
|   | <b>Item</b>  | State      Local                             |
|   | 7  | 66*  |
|   |  | 34   |
|   |  |  |
|   |  |  |
|   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts   |
|   | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early   |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |
| *Correct Answer (7)   |  |  |

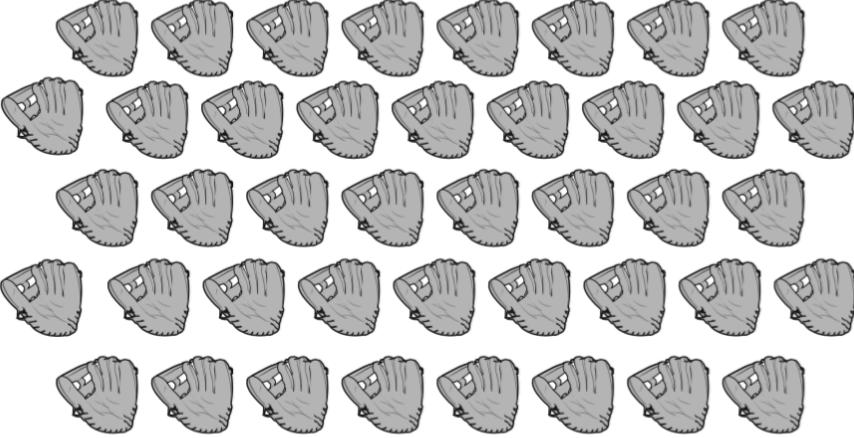
|   |  |  |
|---|--|--|
| <b>3.4(F)</b> recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts | <b>Analysis of Assessed Standards</b>                              |  |
| 2018 – Q5   | <b>Cluster</b>   | Multiplication and Division of Whole Numbers |
| 5 Lin has a total of 36 sodas in packs. There are 6 sodas in each pack. How many packs of sodas does Lin have?      | <b>Subcluster</b>  | Division of Whole Numbers                    |
| Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.         | <b>Content</b>   | Supporting                                   |
|   | <b>Process</b>   |  |
|   | <b>Stimulus</b>  |  |
|   | <b>Data Analysis</b>   |  |
|   | <b>Item</b>  | State      Local                             |
|   | 6  | 57*  |
|   |  | 42   |
|   |  |  |
|   |  |  |
|   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts   |
|   | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early   |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |
| *Correct Answer (6)   |  |  |

|  |  |  |  |
|--|--|--|--|
| 3.4(F) recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts |  | Analysis of Assessed Standards             |  |
| !  | 2017 – Q17   | Cluster                                    | Multiplication and Division of Whole Numbers |
| <b>17</b>  | Kevin and his two brothers ate a bowl of grapes. There were 27 grapes in the bowl. Each boy ate the same number of grapes. | Subcluster                                 | Division of Whole Numbers                    |
|  | What is the number of grapes each boy ate?   | Content                                    | Supporting                                   |
|  |  | Process                                    |  |
|  |  | Stimulus                                   |  |
| <b>Data Analysis</b>   |  |  |  |
|  | Item   | State                                      | Local  |
|  | A  | 12   |  |
|  | B  | 7  |  |
|  | C  | 8  |  |
| *  | D*   | 72   |  |
| <b>Error Analysis</b>  |  |  |  |
|  | <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts |  |
|  | <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |  |  |  |
| *Correct Answer (D)  |  |  |  |

| <b>3.4(H)</b> determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally |  | <b>Analysis of Assessed Standards</b>                        |  |
|--|--|--|--|
| 2019 – Q18   |  | <b>Cluster</b>   | Multiplication and Division of Whole Numbers |
| A group of 27 students played a game with the hoops shown. An equal number of the students shared each hoop.   |  | <b>Subcluster</b>  | Division of Whole Numbers                    |
|  |  | <b>Content</b>   | Supporting                                   |
|  |  | <b>Process</b>   |  |
|  |  | <b>Stimulus</b>  |  |
|  |  | <b>Data Analysis</b>   |  |
|  |  | <b>Item</b>  | <b>State</b>                                 |
|  |  | F*   | 77   |
|  |  | G  | 3  |
|  |  | H  | 18   |
|  |  | J  | 2  |
|  |  | <b>Error Analysis</b>  |  |
|  |  | <input type="checkbox"/> Guessing                            | <input type="checkbox"/> Mixed Up Concepts   |
|  |  | <input type="checkbox"/> Careless Error                      | <input type="checkbox"/> Stopped Too Early   |
|  |  | <b>Learning from Mistakes<br/>Instructional Implications</b> |  |
| *Correct Answer (F)  |  |  |  |

| <b>3.4(H)</b> determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally                                      | <b>Analysis of Assessed Standards</b>   |       |       |       |    |    |  |   |    |  |   |    |  |   |   |  |  |
|---|---|-------|-------|-------|----|----|--|---|----|--|---|----|--|---|---|--|--|
| 2017 – Q32  | <b>Cluster</b> Multiplication and Division of Whole Numbers<br><b>Subcluster</b> Division of Whole Numbers  |       |       |       |    |    |  |   |    |  |   |    |  |   |   |  |  |
| <b>32</b> In math class 5 students split up 65 flash cards to practice their math facts. The picture shows the total number of flash cards. Each student took the same number of flash cards. | <b>Content</b> Supporting<br><b>Process</b><br><b>Stimulus</b>  |       |       |       |    |    |  |   |    |  |   |    |  |   |   |  |  |
|    | <b>Data Analysis</b> <table border="1" data-bbox="1106 422 1512 654"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>F*</td> <td>69</td> <td></td> </tr> <tr> <td>G</td> <td>11</td> <td></td> </tr> <tr> <td>H</td> <td>10</td> <td></td> </tr> <tr> <td>J</td> <td>9</td> <td></td> </tr> </tbody> </table> <b>Error Analysis</b> <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p> | Item  | State | Local | F* | 69 |  | G | 11 |  | H | 10 |  | J | 9 |  |  |
| Item  | State   | Local |       |       |    |    |  |   |    |  |   |    |  |   |   |  |  |
| F*  | 69  |       |       |       |    |    |  |   |    |  |   |    |  |   |   |  |  |
| G   | 11  |       |       |       |    |    |  |   |    |  |   |    |  |   |   |  |  |
| H   | 10  |       |       |       |    |    |  |   |    |  |   |    |  |   |   |  |  |
| J   | 9   |       |       |       |    |    |  |   |    |  |   |    |  |   |   |  |  |
| What is the number of flash cards each student took?<br><b>F</b> 13<br><b>G</b> 15<br><b>H</b> 70<br><b>J</b> 60  | <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |       |       |       |    |    |  |   |    |  |   |    |  |   |   |  |  |

\*Correct Answer (F)

| <p><b>3.4(H)</b> determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally</p>  | <p><b>Analysis of Assessed Standards</b></p>  |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
|--|---|----------------------|--|-------------------|---------------------------|----------------|------------|----------------|--------------------------------|-----------------|---|---|--|----|----|--|---|---|--|-----------------------------------|--|---|--|-------------------------------|-----------------------------------|
| <p>2016 – Q6</p> <p><b>6</b> Daria has 42 baseball gloves in her store.</p>    | <table border="1"> <tr> <td><b>Cluster</b></td><td>Multiplication and Division of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Division of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Supporting</td></tr> <tr> <td><b>Process</b></td><td>3.1(A), 3.1(B), 3.1(E), 3.1(G)</td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table>   | <b>Cluster</b>       | Multiplication and Division of Whole Numbers | <b>Subcluster</b> | Division of Whole Numbers | <b>Content</b> | Supporting | <b>Process</b> | 3.1(A), 3.1(B), 3.1(E), 3.1(G) | <b>Stimulus</b> |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| <b>Cluster</b>   | Multiplication and Division of Whole Numbers  |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| <b>Subcluster</b>  | Division of Whole Numbers   |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| <b>Content</b>   | Supporting  |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| <b>Process</b>   | 3.1(A), 3.1(B), 3.1(E), 3.1(G)  |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| <b>Stimulus</b>  |   |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| <p>She will put these gloves on 7 shelves. She will put the same number of gloves on each shelf. How many gloves will Daria put on each shelf?</p> <p><b>F</b> 8, because <math>42 \div 7 = 8</math></p> <p><b>G</b> 9, because <math>42 \div 7 = 9</math></p> <p><b>H</b> 6, because <math>42 \div 7 = 6</math></p> <p><b>J</b> 7, because <math>42 \div 7 = 7</math></p> | <table border="1"> <tr> <td colspan="3"><b>Data Analysis</b></td></tr> <tr> <th>Item</th><th>State</th><th>Local</th></tr> <tr> <td>F</td><td>7</td><td></td></tr> <tr> <td>G</td><td>3</td><td></td></tr> <tr> <td>H*</td><td>82</td><td></td></tr> <tr> <td>J</td><td>8</td><td></td></tr> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td> <td><input type="checkbox"/> Mixed Up Concepts</td> </tr> <tr> <td><input type="checkbox"/> Careless Error</td> <td><input type="checkbox"/> Stopped Too Early</td> </tr> </table> <table border="1"> <tr> <td><b>Learning from Mistakes</b></td> </tr> <tr> <td><b>Instructional Implications</b></td> </tr> </table> | <b>Data Analysis</b> |  |                   | Item                      | State          | Local      | F              | 7                              |                 | G | 3 |  | H* | 82 |  | J | 8 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early | <b>Learning from Mistakes</b> | <b>Instructional Implications</b> |
| <b>Data Analysis</b>   |   |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| Item   | State   | Local                |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| F  | 7   |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| G  | 3   |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| H*   | 82  |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| J  | 8   |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts  |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early  |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| <b>Learning from Mistakes</b>  |   |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| <b>Instructional Implications</b>  |   |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |
| <p>*Correct Answer (H)</p>   |   |                      |  |                   |                           |                |            |                |                                |                 |   |   |  |    |    |  |   |   |  |                                   |  |   |  |                               |                                   |

| <b>3.4(I)</b> determine if a number is even or odd using divisibility rules<br><br>2019 – Q6 | <b>Analysis of Assessed Standards</b><br><br><table border="1"><tr><td><b>Cluster</b></td><td>Multiplication and Division of Whole Numbers</td></tr><tr><td><b>Subcluster</b></td><td>Division of Whole Numbers</td></tr><tr><td><b>Content</b></td><td>Supporting</td></tr><tr><td><b>Process</b></td><td></td></tr><tr><td><b>Stimulus</b></td><td></td></tr></table><br><b>Data Analysis</b><br><table border="1"><thead><tr><th>Item</th><th>State</th><th>Local</th></tr></thead><tbody><tr><td>F*</td><td>72</td><td></td></tr><tr><td>G</td><td>17</td><td></td></tr><tr><td>H</td><td>6</td><td></td></tr><tr><td>J</td><td>5</td><td></td></tr></tbody></table><br><b>Error Analysis</b><br><input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early<br><br><b>Learning from Mistakes</b><br><b>Instructional Implications</b> | <b>Cluster</b> | Multiplication and Division of Whole Numbers | <b>Subcluster</b> | Division of Whole Numbers | <b>Content</b> | Supporting | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | F* | 72 |  | G | 17 |  | H | 6 |  | J | 5 |  |
|--|---|----------------|--|-------------------|---------------------------|----------------|------------|----------------|--|-----------------|--|------|-------|-------|----|----|--|---|----|--|---|---|--|---|---|--|
| <b>Cluster</b>   | Multiplication and Division of Whole Numbers  |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| <b>Subcluster</b>  | Division of Whole Numbers   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| <b>Content</b>   | Supporting  |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| <b>Process</b>   |   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| <b>Stimulus</b>  |   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| Item   | State   | Local          |  |                   |                           |                |            |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| F*   | 72  |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| G  | 17  |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| H  | 6   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |
| J  | 5   |                |  |                   |                           |                |            |                |  |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |

\*Correct Answer (F)

## 3.4(I) determine if a number is even or odd using divisibility rules

## Analysis of Assessed Standards

2017 – Q6

- 6** These six basketball jerseys are hanging on a wall. Lori's favorite basketball players each have an odd number on their jerseys.



Which list shows only the numbers of Lori's favorite basketball players?

- F** 10, 21, 25, 33
- G** 21, 25, 33
- H** 21, 50, 52
- J** 10, 33, 50, 52

\*Correct Answer (G)

|            |  |
|------------|--|
| Cluster    | Multiplication and Division of Whole Numbers |
| Subcluster | Division of Whole Numbers                    |
| Content    | Supporting                                   |
| Process    |  |
| Stimulus   |  |

## Data Analysis

| Item | State | Local |
|------|-------|-------|
| F    | 11    |       |
| G*   | 75    |       |
| H    | 5     |       |
| J    | 8     |       |

## Error Analysis

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

Learning from Mistakes  
Instructional Implications

| <p>3.4(I) determine if a number is even or odd using divisibility rules</p> <p>2016 – Q22</p> <p><b>22</b> Which statement about the number 34 is true?</p> <ul style="list-style-type: none"> <li><b>F</b> It is odd, because the digit in the tens place is odd.</li> <li><b>G</b> It is even, because the digit in the tens place is even.</li> <li><b>H</b> It is odd, because it can be divided by 3 evenly.</li> <li><b>J</b> It is even, because it can be divided by 2 evenly.</li> </ul> <p>*Correct Answer (J)</p> | <table border="1"> <thead> <tr> <th colspan="3">Analysis of Assessed Standards</th></tr> </thead> <tbody> <tr> <td>Cluster</td><td colspan="2">Multiplication and Division of Whole Numbers</td></tr> <tr> <td>Subcluster</td><td colspan="2">Division of Whole Numbers</td></tr> <tr> <td>Content</td><td colspan="2">Supporting</td></tr> <tr> <td>Process</td><td colspan="2">3.1(B), 3.1(G)</td></tr> <tr> <td>Stimulus</td><td colspan="2" rowspan="2"></td></tr> <tr> <th colspan="3">Data Analysis</th></tr> <tr> <th>Item</th><th>State</th><th>Local</th></tr> <tr> <td>F</td><td>17</td><td></td></tr> <tr> <td>G</td><td>13</td><td></td></tr> <tr> <td>H</td><td>7</td><td></td></tr> <tr> <td>J*</td><td>62</td><td></td></tr> <tr> <th colspan="3">Error Analysis</th></tr> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td><td></td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td><td></td></tr> <tr> <th colspan="3">Learning from Mistakes<br/>Instructional Implications</th></tr> <tr> <td colspan="3"></td></tr> </tbody> </table> | Analysis of Assessed Standards |  |  | Cluster | Multiplication and Division of Whole Numbers |  | Subcluster | Division of Whole Numbers |  | Content | Supporting |  | Process | 3.1(B), 3.1(G) |  | Stimulus |  |  | Data Analysis |  |  | Item | State | Local | F | 17 |  | G | 13 |  | H | 7 |  | J* | 62 |  | Error Analysis |  |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts |  | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |  | Learning from Mistakes<br>Instructional Implications |  |  |  |  |  |
|--|--|--------------------------------|--|--|---------|--|--|------------|---------------------------|--|---------|------------|--|---------|----------------|--|----------|--|--|---------------|--|--|------|-------|-------|---|----|--|---|----|--|---|---|--|----|----|--|----------------|--|--|-----------------------------------|--|--|---|--|--|--|--|--|--|--|--|
| Analysis of Assessed Standards   |  |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| Cluster  | Multiplication and Division of Whole Numbers   |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| Subcluster   | Division of Whole Numbers  |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| Content  | Supporting   |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| Process  | 3.1(B), 3.1(G)   |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| Stimulus   |  |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| Data Analysis  |  |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| Item   | State  | Local                          |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| F  | 17   |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| G  | 13   |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| H  | 7  |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| J*   | 62   |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| Error Analysis   |  |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts   |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early   |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
| Learning from Mistakes<br>Instructional Implications   |  |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |
|  |  |                                |  |  |         |  |  |            |                           |  |         |            |  |         |                |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |   |   |  |    |    |  |                |  |  |                                   |  |  |   |  |  |  |  |  |  |  |  |

| 3.4(J) determine a quotient using the relationship between multiplication and division                      |   | Analysis of Assessed Standards                       |  |
|---|---|--|--|
| 2017 – Q23  |   | Cluster  | Multiplication and Division of Whole Numbers |
| <b>23</b> Scott has 28 toy cars to put on 4 shelves. He wants to put the same number of cars on each shelf. | How many toy cars should Scott put on each shelf? | Subcluster   | Division of Whole Numbers                    |
| A 32, because $4 + 28 = 32$   |   | Content  | Supporting                                   |
| B 112, because $28 \times 4 = 112$  |   | Process  |  |
| C 7, because $4 \times 7 = 28$  |   | Stimulus   |  |
| D 24, because $28 - 24 = 4$   |   | Data Analysis  |  |
| *Correct Answer (C)   |   | Item   | State  |
|   |   | A  | 8  |
|   |   | B  | 14   |
|   |   | C*   | 72   |
|   |   | D  | 5  |
|   |   | Error Analysis                                       |  |
|   |   | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts   |
|   |   | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early   |
|   |   | Learning from Mistakes<br>Instructional Implications |  |

| 3.4(J) determine a quotient using the relationship between multiplication and division  |            | Analysis of Assessed Standards                       |  |
|---|------------|--|--|
| !   | 2016 – Q18 | Cluster  | Multiplication and Division of Whole Numbers |
| <b>18</b> There are a total of 36 bicycles in 6 rows at a bicycle shop. There are the same number of bicycles in each row. Which equation can be used to find the number of bicycles in each row? |            | Subcluster   | Division of Whole Numbers                    |
| F $6 \times 6 = 36$   |            | Content  | Supporting                                   |
| G $36 - 6 = 30$   |            | Process  | 3.1(A), 3.1(B), 3.1(D), 3.1(F)               |
| H $36 \times 6 = 216$   |            | Stimulus   |  |
| J $6 + 6 = 12$  |            | Data Analysis  |  |
| *Correct Answer (F)   |            | Item   | State  |
|   |            | F*   | 74   |
|   |            | G  | 4  |
|   |            | H  | 20   |
|   |            | J  | 3  |
|   |            | Error Analysis                                       |  |
|   |            | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts   |
|   |            | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early   |
|   |            | Learning from Mistakes<br>Instructional Implications |  |

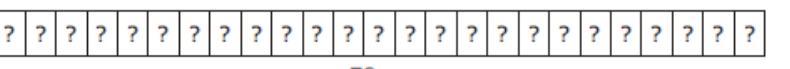
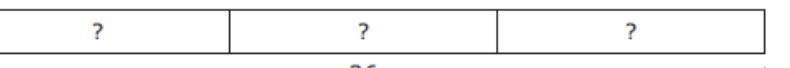
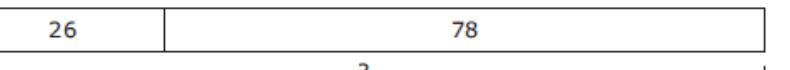


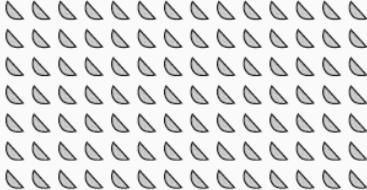
|   |  |  |
|---|--|--|
| <p><b>3.4(K)</b> solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts</p> | <b>Analysis of Assessed Standards</b>                              |  |
| 2017 – Q5   | <b>Cluster</b>   | Multiplication and Division of Whole Numbers |
| <p><b>5</b> Aaron will place 99 towels on a shelf. He will make 9 equal stacks.</p> <p>How many towels will be in each stack?</p> <p>Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.</p>          | <b>Subcluster</b>  | Division of Whole Numbers                    |
|   | <b>Content</b>   | Readiness                                    |
|   | <b>Process</b>   |  |
|   | <b>Stimulus</b>  |  |
|   | <b>Data Analysis</b>   |  |
|   | <b>Item</b>  | <b>State</b>                                 |
|   | 11   | 61*  |
|   |  | 39   |
|   |  |  |
|   |  |  |
|   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts   |
|   | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early   |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |
| <b>*Correct Answer (11)</b>   |  |  |

|   |  |  |
|---|--|--|
| <p><b>3.4(K)</b> solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts</p> | <b>Analysis of Assessed Standards</b>                              |  |
| 2016 – Q37  | <b>Cluster</b>   | Multiplication and Division of Whole Numbers |
|   | <b>Subcluster</b>  | Division of Whole Numbers                    |
|   | <b>Content</b>   | Readiness                                    |
|   | <b>Process</b>   | 3.1(A), 3.1(B), 3.1(F)                       |
|   | <b>Stimulus</b>  |  |
|   | <b>Data Analysis</b>   |  |
|   | <b>Item</b>  | <b>State</b>                                 |
|   | A*   | 72   |
|   | B  | 10   |
|   | C  | 13   |
|   | D  | 5  |
|   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts   |
|   | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early   |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |
| <b>*Correct Answer (A)</b>  |  |  |

|  |  | Analysis of Assessed Standards |  |
|--|--|--------------------------------|--|
|  |  | Cluster                        | Multiplication and Division of Whole Numbers |
|  |  | Subcluster                     | Division of Whole Numbers                    |
|  |  | Content                        | Readiness                                    |
|  |  | Process                        |  |
|  |  | Stimulus                       |  |
|  |  | Data Analysis                  |  |
|  |  | Item                           | State Local                                  |
| <b>F</b>   |  | <b>F</b>                       | 13   |
| <b>H</b>   |  | <b>H</b>                       | 2  |
| <b>G</b>   |  | <b>G</b>                       | 2  |
| <b>J*</b>  |  | <b>J*</b>                      | 82   |
| Error Analysis   |  |                                |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |                                |  |
| Learning from Mistakes<br>Instructional Implications   |  |                                |  |
| <p><b>*Correct Answer (J)</b></p>  |  |                                |  |

| <p><b>3.5(B)</b> represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations</p> <p>2017 – Q9</p> <p><b>9</b> Gina has 42 mushrooms to put into 6 salads. She wants to put the same number of mushrooms in each salad.</p> <p>Which strip diagram shows how to find the number of mushrooms that Gina should put in each salad?</p> <p><b>A</b> </p> <p><b>B</b> </p> <p><b>C</b> </p> <p><b>D</b> </p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;"><b>Cluster</b></td><td style="padding: 5px;">Multiplication and Division of Whole Numbers</td></tr> <tr> <td style="padding: 5px;"><b>Subcluster</b></td><td style="padding: 5px;">Division of Whole Numbers</td></tr> <tr> <td style="padding: 5px;"><b>Content</b></td><td style="padding: 5px;">Readiness</td></tr> <tr> <td style="padding: 5px;"><b>Process</b></td><td style="padding: 5px;"></td></tr> <tr> <td style="padding: 5px;"><b>Stimulus</b></td><td style="padding: 5px;"></td></tr> </table><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Data Analysis</th></tr> <tr> <th style="background-color: #cccccc;">Item</th><th style="background-color: #cccccc;">State</th><th style="background-color: #cccccc;">Local</th></tr> <tr> <td style="text-align: center;">A*</td><td style="text-align: center;">70</td><td></td></tr> <tr> <td style="text-align: center;">B</td><td style="text-align: center;">11</td><td></td></tr> <tr> <td style="text-align: center;">C</td><td style="text-align: center;">15</td><td></td></tr> <tr> <td style="text-align: center;">D</td><td style="text-align: center;">4</td><td></td></tr> </table><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center; background-color: #cccccc;">Error Analysis</td></tr> <tr> <td style="text-align: center; width: 50px;"><input type="checkbox"/> Guessing</td><td style="text-align: center; width: 50px;"><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td style="text-align: center;"><input type="checkbox"/> Careless Error</td><td style="text-align: center;"><input type="checkbox"/> Stopped Too Early</td></tr> </table><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center; background-color: #cccccc;">Learning from Mistakes<br/>Instructional Implications</td></tr> </table> | <b>Cluster</b> | Multiplication and Division of Whole Numbers | <b>Subcluster</b> | Division of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Data Analysis |  |  | Item | State | Local | A* | 70 |  | B | 11 |  | C | 15 |  | D | 4 |  | Error Analysis |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early | Learning from Mistakes<br>Instructional Implications |  |
|---|---|----------------|--|-------------------|---------------------------|----------------|-----------|----------------|--|-----------------|--|---------------|--|--|------|-------|-------|----|----|--|---|----|--|---|----|--|---|---|--|----------------|--|-----------------------------------|--|---|--|--|--|
| <b>Cluster</b>  | Multiplication and Division of Whole Numbers  |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| <b>Subcluster</b>   | Division of Whole Numbers   |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| <b>Content</b>  | Readiness   |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| <b>Process</b>  |   |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| <b>Stimulus</b>   |   |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| Data Analysis   |   |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| Item  | State   | Local          |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| A*  | 70  |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| B   | 11  |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| C   | 15  |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| D   | 4   |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| Error Analysis  |   |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts  |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early  |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |
| Learning from Mistakes<br>Instructional Implications  |   |                |  |                   |                           |                |           |                |  |                 |  |               |  |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |                |  |                                   |  |   |  |  |  |

| <p><b>3.5(B)</b> represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations</p> <p>! 2016 – Q14</p> <p><b>14</b> Edward made 26 hamburgers. He used a total of 78 pickle slices on the hamburgers. He put the same number of pickle slices on each hamburger. Which diagram shows how to find the number of pickle slices Edward put on each hamburger?</p> <p><b>F</b> </p> <p><b>G</b> </p> <p><b>H</b> </p> <p><b>J</b> </p> |  | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Multiplication and Division of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Division of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td>3.1(A), 3.1(B), 3.1(D), 3.1(F)</td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>F*</td><td>44</td><td></td></tr> <tr> <td>G</td><td>16</td><td></td></tr> <tr> <td>H</td><td>20</td><td></td></tr> <tr> <td>J</td><td>20</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p> <p><b>Learning from Mistakes</b><br/> <b>Instructional Implications</b></p> |  |  |  |  | <b>Cluster</b> | Multiplication and Division of Whole Numbers | <b>Subcluster</b> | Division of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> | 3.1(A), 3.1(B), 3.1(D), 3.1(F) | <b>Stimulus</b> |  | Item | State | Local | F* | 44 |  | G | 16 |  | H | 20 |  | J | 20 |  |
|--|--|---|--|--|--|--|----------------|--|-------------------|---------------------------|----------------|-----------|----------------|--------------------------------|-----------------|--|------|-------|-------|----|----|--|---|----|--|---|----|--|---|----|--|
| <b>Cluster</b>   | Multiplication and Division of Whole Numbers |   |  |  |  |  |                |  |                   |                           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <b>Subcluster</b>  | Division of Whole Numbers                    |   |  |  |  |  |                |  |                   |                           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <b>Content</b>   | Readiness                                    |   |  |  |  |  |                |  |                   |                           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <b>Process</b>   | 3.1(A), 3.1(B), 3.1(D), 3.1(F)               |   |  |  |  |  |                |  |                   |                           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <b>Stimulus</b>  |  |   |  |  |  |  |                |  |                   |                           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| Item   | State  | Local   |  |  |  |  |                |  |                   |                           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| F*   | 44   |   |  |  |  |  |                |  |                   |                           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| G  | 16   |   |  |  |  |  |                |  |                   |                           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| H  | 20   |   |  |  |  |  |                |  |                   |                           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| J  | 20   |   |  |  |  |  |                |  |                   |                           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |

| <p><b>3.5(B)</b> represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations</p>            | <p><b>Analysis of Assessed Standards</b></p>  |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
|---|---|-------|-------|-------|----|----|--|---|----|--|---|----|--|---|----|--|
| <p>2015 – Q13 Sample</p>  | <p><b>Cluster</b> Multiplication and Division of Whole Numbers</p>  |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <p><b>13</b> Larry has 14 oranges. He will cut each of these oranges into 7 slices. Which array can be used to find the number of orange slices he will have?</p> | <p><b>Subcluster</b> Division of Whole Numbers</p>  |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <p><b>A</b> </p>   | <p><b>Content</b> Readiness</p>   |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <p><b>B</b> </p>   | <p><b>Process</b> 3.1(A), 3.1(B), 3.1(E), 3.1(F)</p>  |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <p><b>C</b> </p>   | <p><b>Stimulus</b></p>  |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <p><b>D</b> </p>   | <p><b>Data Analysis</b></p>   |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
|   | <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>A*</td> <td>NA</td> <td></td> </tr> <tr> <td>B</td> <td>NA</td> <td></td> </tr> <tr> <td>C</td> <td>NA</td> <td></td> </tr> <tr> <td>D</td> <td>NA</td> <td></td> </tr> </tbody> </table> | Item  | State | Local | A* | NA |  | B | NA |  | C | NA |  | D | NA |  |
| Item  | State   | Local |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| A*  | NA  |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| B   | NA  |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| C   | NA  |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| D   | NA  |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
|   | <p><b>Error Analysis</b></p> <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts</p> <p><input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p>  |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
|   | <p><b>Learning from Mistakes</b></p> <p><b>Instructional Implications</b></p>   |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |
| <p>*Correct Answer (A)</p>  |   |       |       |       |    |    |  |   |    |  |   |    |  |   |    |  |

| 3.5(E) represent real-world relationships using number pairs in a table and verbal descriptions   |                             | Analysis of Assessed Standards             |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
|---|-----------------------------|--|-------|----|----|----|--|-------------------------|---|---|---|----|----|----|---------------------|----|----|----|----|----|----|---------|--|
| <p>2018 – Q7</p> <p>7 The table shows the relationship between the number of toy airplanes made in a factory and the number of batteries needed for the airplanes.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="7">Batteries for Toy Airplanes</th></tr> <tr> <th>Number of Toy Airplanes</th><th>5</th><th>7</th><th>9</th><th>11</th><th>13</th><th>15</th></tr> </thead> <tbody> <tr> <th>Number of Batteries</th><td>15</td><td>21</td><td>27</td><td>33</td><td>39</td><td>45</td></tr> </tbody> </table> <p>Based on the relationship shown in the table, which statement is true?</p> <p>A The number of batteries is equal to the number of toy airplanes times 3.<br/>     B The number of batteries is equal to the number of toy airplanes times 2.<br/>     C The number of batteries is equal to the number of toy airplanes times 6.<br/>     D The number of batteries is equal to the number of toy airplanes times 5.</p> | Batteries for Toy Airplanes |  |       |    |    |    |  | Number of Toy Airplanes | 5 | 7 | 9 | 11 | 13 | 15 | Number of Batteries | 15 | 21 | 27 | 33 | 39 | 45 | Cluster | Multiplication and Division of Whole Numbers |
| Batteries for Toy Airplanes   |                             |  |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| Number of Toy Airplanes   | 5                           | 7  | 9     | 11 | 13 | 15 |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| Number of Batteries   | 15                          | 21   | 27    | 33 | 39 | 45 |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| Subcluster  | Numerical Patterns          |  |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| Content   | Readiness                   |  |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| Process   |                             |  |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| Stimulus  |                             |  |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| <b>Data Analysis</b>  |                             |  |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| Item  |                             | State                                      | Local |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| A*  |                             | 75   |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| B   |                             | 7  |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| C   |                             | 9  |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| D   |                             | 8  |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| <b>Error Analysis</b>   |                             |  |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| <input type="checkbox"/> Guessing   |                             | <input type="checkbox"/> Mixed Up Concepts |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| <input type="checkbox"/> Careless Error   |                             | <input type="checkbox"/> Stopped Too Early |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |
| <b>Learning from Mistakes<br/>Instructional Implications</b>  |                             |  |       |    |    |    |  |                         |   |   |   |    |    |    |                     |    |    |    |    |    |    |         |  |

| 3.5(E) represent real-world relationships using number pairs in a table and verbal descriptions   |                     | Analysis of Assessed Standards             |  |   |   |   |   |   |    |    |    |          |           |
|---|---------------------|--|--|---|---|---|---|---|----|----|----|----------|-----------|
| 2017 – Q15  |                     | Cluster                                    | Multiplication and Division of Whole Numbers |   |   |   |   |   |    |    |    |          |           |
| <p><b>15</b> Kacie sold bracelets at a store. She sold 3 bracelets for 1 dollar.</p> <p>Which table represents the numbers of bracelets that would be sold for different numbers of dollars?</p>  |                     | Subcluster                                 | Numerical Patterns                           |   |   |   |   |   |    |    |    |          |           |
| <p style="text-align: center;">Bracelets Sold</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Number of Dollars</th> <th>Number of Bracelets</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3</td> </tr> <tr> <td>2</td> <td>4</td> </tr> <tr> <td>4</td> <td>6</td> </tr> <tr> <td>5</td> <td>10</td> </tr> </tbody> </table>  |                     | Number of Dollars                          | Number of Bracelets                          | 1 | 3 | 2 | 4 | 4 | 6  | 5  | 10 | Content  | Readiness |
| Number of Dollars   | Number of Bracelets |  |  |   |   |   |   |   |    |    |    |          |           |
| 1   | 3                   |  |  |   |   |   |   |   |    |    |    |          |           |
| 2   | 4                   |  |  |   |   |   |   |   |    |    |    |          |           |
| 4   | 6                   |  |  |   |   |   |   |   |    |    |    |          |           |
| 5   | 10                  |  |  |   |   |   |   |   |    |    |    |          |           |
| <p style="text-align: center;">Bracelets Sold</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Number of Dollars</th> <th>Number of Bracelets</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>1</td> </tr> <tr> <td>4</td> <td>2</td> </tr> <tr> <td>6</td> <td>4</td> </tr> <tr> <td>10</td> <td>5</td> </tr> </tbody> </table>  |                     | Number of Dollars                          | Number of Bracelets                          | 3 | 1 | 4 | 2 | 6 | 4  | 10 | 5  | Process  |           |
| Number of Dollars   | Number of Bracelets |  |  |   |   |   |   |   |    |    |    |          |           |
| 3   | 1                   |  |  |   |   |   |   |   |    |    |    |          |           |
| 4   | 2                   |  |  |   |   |   |   |   |    |    |    |          |           |
| 6   | 4                   |  |  |   |   |   |   |   |    |    |    |          |           |
| 10  | 5                   |  |  |   |   |   |   |   |    |    |    |          |           |
| <p style="text-align: center;">Bracelets Sold</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Number of Dollars</th> <th>Number of Bracelets</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3</td> </tr> <tr> <td>2</td> <td>6</td> </tr> <tr> <td>4</td> <td>12</td> </tr> <tr> <td>5</td> <td>15</td> </tr> </tbody> </table> |                     | Number of Dollars                          | Number of Bracelets                          | 1 | 3 | 2 | 6 | 4 | 12 | 5  | 15 | Stimulus |           |
| Number of Dollars   | Number of Bracelets |  |  |   |   |   |   |   |    |    |    |          |           |
| 1   | 3                   |  |  |   |   |   |   |   |    |    |    |          |           |
| 2   | 6                   |  |  |   |   |   |   |   |    |    |    |          |           |
| 4   | 12                  |  |  |   |   |   |   |   |    |    |    |          |           |
| 5   | 15                  |  |  |   |   |   |   |   |    |    |    |          |           |
| <b>Data Analysis</b>  |                     |  |  |   |   |   |   |   |    |    |    |          |           |
|   |                     | Item                                       | State Local                                  |   |   |   |   |   |    |    |    |          |           |
|   |                     | A  | 16   |   |   |   |   |   |    |    |    |          |           |
|   |                     | B*   | 65   |   |   |   |   |   |    |    |    |          |           |
|   |                     | C  | 8  |   |   |   |   |   |    |    |    |          |           |
|   |                     | D  | 11   |   |   |   |   |   |    |    |    |          |           |
| <b>Error Analysis</b>   |                     |  |  |   |   |   |   |   |    |    |    |          |           |
| <input type="checkbox"/> Guessing   |                     | <input type="checkbox"/> Mixed Up Concepts |  |   |   |   |   |   |    |    |    |          |           |
| <input type="checkbox"/> Careless Error   |                     | <input type="checkbox"/> Stopped Too Early |  |   |   |   |   |   |    |    |    |          |           |
| <b>Learning from Mistakes<br/>Instructional Implications</b>  |                     |  |  |   |   |   |   |   |    |    |    |          |           |
|   |                     |  |  |   |   |   |   |   |    |    |    |          |           |

\*Correct Answer (B)

|   |   |  |  |     |    |    |                 |    |    |     |     |                                   |  |
|---|---|--|--|-----|----|----|-----------------|----|----|-----|-----|-----------------------------------|--|
| 3.5(E) represent real-world relationships using number pairs in a table and verbal descriptions   |   | Analysis of Assessed Standards                       |  |     |    |    |                 |    |    |     |     |                                   |  |
| 2016 – Q30  |   | Cluster  | Multiplication and Division of Whole Numbers |     |    |    |                 |    |    |     |     |                                   |  |
| <b>30</b> There are 8 socks in each package sold at a shoe store. Which table shows the number of socks in different numbers of these packages? |   | Subcluster   | Numerical Patterns                           |     |    |    |                 |    |    |     |     |                                   |  |
|   |   | Content  | Readiness                                    |     |    |    |                 |    |    |     |     |                                   |  |
|   |   | Process  | 3.1(A), 3.1(B), 3.1(D), 3.1(F)               |     |    |    |                 |    |    |     |     |                                   |  |
|   |   | Stimulus   |  |     |    |    |                 |    |    |     |     |                                   |  |
| Packages of Socks   |   | Data Analysis  |  |     |    |    |                 |    |    |     |     |                                   |  |
| <b>F</b>  | <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>Number of Packages</td><td>5</td><td>8</td><td>10</td><td>11</td></tr> <tr> <td>Number of Socks</td><td>40</td><td>48</td><td>56</td><td>64</td></tr> </table>   | Number of Packages                                   | 5  | 8   | 10 | 11 | Number of Socks | 40 | 48 | 56  | 64  | Item                              | State                                      |
| Number of Packages  | 5   | 8  | 10   | 11  |    |    |                 |    |    |     |     |                                   |  |
| Number of Socks   | 40  | 48   | 56   | 64  |    |    |                 |    |    |     |     |                                   |  |
|   |   | <b>F</b>   | 15   |     |    |    |                 |    |    |     |     |                                   |  |
|   |   | <b>G</b>   | 7  |     |    |    |                 |    |    |     |     |                                   |  |
|   |   | <b>H*</b>  | 69   |     |    |    |                 |    |    |     |     |                                   |  |
|   |   | <b>J</b>   | 9  |     |    |    |                 |    |    |     |     |                                   |  |
| Packages of Socks   |   | Error Analysis                                       |  |     |    |    |                 |    |    |     |     |                                   |  |
| <b>G</b>  | <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>Number of Packages</td><td>5</td><td>8</td><td>10</td><td>11</td></tr> <tr> <td>Number of Socks</td><td>40</td><td>64</td><td>88</td><td>112</td></tr> </table>  | Number of Packages                                   | 5  | 8   | 10 | 11 | Number of Socks | 40 | 64 | 88  | 112 | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts |
| Number of Packages  | 5   | 8  | 10   | 11  |    |    |                 |    |    |     |     |                                   |  |
| Number of Socks   | 40  | 64   | 88   | 112 |    |    |                 |    |    |     |     |                                   |  |
|   |   | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early   |     |    |    |                 |    |    |     |     |                                   |  |
| Packages of Socks   |   | Learning from Mistakes<br>Instructional Implications |  |     |    |    |                 |    |    |     |     |                                   |  |
| <b>H</b>  | <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>Number of Packages</td><td>5</td><td>8</td><td>10</td><td>11</td></tr> <tr> <td>Number of Socks</td><td>40</td><td>64</td><td>80</td><td>88</td></tr> </table>   | Number of Packages                                   | 5  | 8   | 10 | 11 | Number of Socks | 40 | 64 | 80  | 88  |                                   |  |
| Number of Packages  | 5   | 8  | 10   | 11  |    |    |                 |    |    |     |     |                                   |  |
| Number of Socks   | 40  | 64   | 80   | 88  |    |    |                 |    |    |     |     |                                   |  |
| <b>I</b>  | <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>Number of Packages</td><td>5</td><td>8</td><td>10</td><td>11</td></tr> <tr> <td>Number of Socks</td><td>40</td><td>80</td><td>120</td><td>160</td></tr> </table> | Number of Packages                                   | 5  | 8   | 10 | 11 | Number of Socks | 40 | 80 | 120 | 160 |                                   |  |
| Number of Packages  | 5   | 8  | 10   | 11  |    |    |                 |    |    |     |     |                                   |  |
| Number of Socks   | 40  | 80   | 120  | 160 |    |    |                 |    |    |     |     |                                   |  |
| <b>*</b> Correct Answer (H)   |   |  |  |     |    |    |                 |    |    |     |     |                                   |  |

**3.5(E)** represent real-world relationships using number pairs in a table and verbal descriptions

! 2016 – Q40

**40** The table shows the numbers of flowers of different colors in four vases.

Flowers in Vases

| Vase | Yellow | Red |
|------|--------|-----|
| Q    | 9      | 3   |
| R    | 15     | 5   |
| S    | 21     | 7   |
| T    | 27     | 9   |

Based on the relationship shown in the table, which statement is true?

- F** There are 3 times as many yellow flowers as red flowers in each vase.
- G** There are 9 times as many yellow flowers as red flowers in each vase.
- H** There are 6 times as many yellow flowers as red flowers in each vase.
- J** There are 11 times as many yellow flowers as red flowers in each vase.

\*Correct Answer (F)

**Analysis of Assessed Standards**

|                   |  |
|-------------------|--|
| <b>Cluster</b>    | Multiplication and Division of Whole Numbers |
| <b>Subcluster</b> | Numerical Patterns                           |
| <b>Content</b>    | Readiness                                    |
| <b>Process</b>    | 3.1(A), 3.1(B), 3.1(D), 3.1(G)               |
| <b>Stimulus</b>   |  |

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| F*   | 64    |       |
| G    | 14    |       |
| H    | 15    |       |
| J    | 7     |       |

**Error Analysis**

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

**Learning from Mistakes  
Instructional Implications**

|  |   |  |  |
|--|---|--|--|
| 3.5(E) represent real-world relationships using number pairs in a table and verbal descriptions  |   | Analysis of Assessed Standards   |  |
| 2015 – Q16 Sample  |   | Cluster  | Multiplication and Division of Whole Numbers |
| <b>16</b> There are 10 sunglasses in each display case at a store. Which table shows the number of sunglasses in different numbers of these display cases? |   | Subcluster   | Numerical Patterns                           |
| Sunglasses   |   | Content  | Readiness                                    |
| <b>A</b>   | Number of Display Cases<br>2    6    11    12<br>Number of Sunglasses<br>20    30    40    50   | Process  | 3.1(A), 3.1(B), 3.1(D), 3.1(F)               |
| Sunglasses   |   | Stimulus   |  |
| <b>B</b>   | Number of Display Cases<br>2    6    11    12<br>Number of Sunglasses<br>20    60    110    120 | Data Analysis  |  |
| Sunglasses   |   | Item   | State    Local                               |
| <b>C</b>   | Number of Display Cases<br>2    6    11    12<br>Number of Sunglasses<br>20    60    100    140 | A  | NA   |
| Sunglasses   |   | B*   | NA   |
| <b>D</b>   | Number of Display Cases<br>2    6    11    12<br>Number of Sunglasses<br>10    20    30    40   | C  | NA   |
| Sunglasses   |   | D  | NA   |
| <b>*Correct Answer (B)</b>   |   | Error Analysis   |  |
|  |   | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |
|  |   | Learning from Mistakes<br>Instructional Implications   |  |

**3.5(E)** represent real-world relationships using number pairs in a table and verbal descriptions

2019 – Q10

There are 8 oranges in each bag for sale at a store. Which table shows the relationship between the number of bags and the number of oranges in the bags?

**F**              Oranges

| Number of Bags | Number of Oranges |
|----------------|-------------------|
| 2              | 8                 |
| 3              | 16                |
| 4              | 24                |
| 5              | 32                |

**H**              Oranges

| Number of Bags | Number of Oranges |
|----------------|-------------------|
| 2              | 10                |
| 3              | 11                |
| 4              | 12                |
| 5              | 13                |

**G**              Oranges

| Number of Bags | Number of Oranges |
|----------------|-------------------|
| 2              | 16                |
| 3              | 24                |
| 4              | 32                |
| 5              | 40                |

**J**              Oranges

| Number of Bags | Number of Oranges |
|----------------|-------------------|
| 2              | 16                |
| 3              | 32                |
| 4              | 64                |
| 5              | 128               |

\*Correct Answer (G)

#### Analysis of Assessed Standards

|                   |  |
|-------------------|--|
| <b>Cluster</b>    | Multiplication and Division of Whole Numbers |
| <b>Subcluster</b> | Numerical Patterns                           |
| <b>Content</b>    | Readiness                                    |
| <b>Process</b>    |  |
| <b>Stimulus</b>   |  |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F    | 25    |       |
| G*   | 65    |       |
| H    | 5     |       |
| J    | 5     |       |

#### Error Analysis

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

| <p><b>3.5(E)</b> represent real-world relationships using number pairs in a table and verbal descriptions</p> <p>2021 – Q13</p> | <p><b>Analysis of Assessed Standards</b></p>   |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|---|--|-------|-------|-------|---|----|--|---|---|--|---|----|--|----|----|--|
|   | <p><b>Cluster</b> Multiplication and Division of Whole Numbers</p>   |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Subcluster</b> Numerical Patterns</p>  |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Content</b> Readiness</p>  |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Process</b></p>  |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Stimulus</b></p>   |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Data Analysis</b></p>  |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|   | <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>11</td> <td></td> </tr> <tr> <td>B</td> <td>7</td> <td></td> </tr> <tr> <td>C</td> <td>21</td> <td></td> </tr> <tr> <td>D*</td> <td>61</td> <td></td> </tr> </tbody> </table> | Item  | State | Local | A | 11 |  | B | 7 |  | C | 21 |  | D* | 61 |  |
| Item  | State  | Local |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
| A   | 11   |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
| B   | 7  |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
| C   | 21   |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
| D*  | 61   |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Error Analysis</b></p>   |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|   | <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts</p>   |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|   | <p><input type="checkbox"/> Careless Error      <input type="checkbox"/> Stopped Too Early</p>   |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|   | <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p>   |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
|   |  |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |
| <p>*Correct Answer (D)</p>  |  |       |       |       |   |    |  |   |   |  |   |    |  |    |    |  |

| <p><b>3.4(K)</b> solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts</p>  | <p><b>Analysis of Assessed Standards</b></p> |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
|--|--|-------|-------|---|---|--|---|----|--|---|----|--|----|----|--|--|
| <p>! 2021 – Q10</p>  |  |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| <p><b>10</b> Miriam had 63 flowers and 9 vases.</p>  |  |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| <ul style="list-style-type: none"> <li>She threw away 9 flowers that had broken stems.</li> <li>She put an equal number of all the flowers she had left into each vase.</li> </ul>   |  |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| <p>What is the greatest number of flowers Miriam put into each vase?</p>   |  |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| <p>F 2</p>   |  |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| <p>G 7</p>   |  |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| <p>H 8</p>   |  |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| <p>J 6</p>   |  |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>F</td> <td>6</td> <td></td> </tr> <tr> <td>G</td> <td>24</td> <td></td> </tr> <tr> <td>H</td> <td>26</td> <td></td> </tr> <tr> <td>J*</td> <td>44</td> <td></td> </tr> </tbody> </table> | Item   | State | Local | F | 6 |  | G | 24 |  | H | 26 |  | J* | 44 |  |  |
| Item   | State  | Local |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| F  | 6  |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| G  | 24   |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| H  | 26   |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| J*   | 44   |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| <p><b>Error Analysis</b></p> <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts</p> <p><input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p>   |  |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |
| <p><b>Learning from Mistakes</b></p> <p><b>Instructional Implications</b></p>  |  |       |       |   |   |  |   |    |  |   |    |  |    |    |  |  |

| <p><b>3.4(K)</b> solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts</p> <p>! 2021 – Q31</p> <p><b>31</b> Hector played a game 14 times. Each time he played, he threw 4 red balls and 3 green balls at a target.<br/>What was the total number of balls Hector threw at the target?</p> <p><b>A</b> 21<br/><b>B</b> 68<br/><b>C</b> 98<br/><b>D</b> 46</p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><b>Cluster</b></td><td>Multiplication and Division of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Multiplication and Division of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Item</th><th style="width: 15%;">State</th><th style="width: 15%;">Local</th></tr> </thead> <tbody> <tr> <td>A</td><td>33</td><td></td></tr> <tr> <td>B</td><td>11</td><td></td></tr> <tr> <td>C*</td><td>42</td><td></td></tr> <tr> <td>D</td><td>14</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Guessing</td><td style="width: 50%;"><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Multiplication and Division of Whole Numbers | <b>Subcluster</b> | Multiplication and Division of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | A | 33 |  | B | 11 |  | C* | 42 |  | D | 14 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|--|--|----------------|--|-------------------|--|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|---|----|--|---|----|--|----|----|--|---|----|--|-----------------------------------|--|---|--|
| <b>Cluster</b>   | Multiplication and Division of Whole Numbers   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <b>Subcluster</b>  | Multiplication and Division of Whole Numbers   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <b>Content</b>   | Readiness  |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <b>Process</b>   |  |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <b>Stimulus</b>  |  |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| Item   | State  | Local          |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| A  | 33   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| B  | 11   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| C*   | 42   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| D  | 14   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |    |  |   |    |  |    |    |  |   |    |  |                                   |  |   |  |

\*Correct Answer (C)

| <p>2019 – Q2</p> <p>Gerardo bought 3 packages of mint gum and 2 packages of bubble gum. Each package had 8 pieces of gum.<br/>How many pieces of gum did Gerardo buy?</p> <p><b>F</b> 26<br/><b>G</b> 40<br/><b>H</b> 12<br/><b>J</b> 48</p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><b>Cluster</b></td><td>Multiplication and Division of Whole Numbers</td></tr> <tr> <td><b>Subcluster</b></td><td>Multiplication and Division of Whole Numbers</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Item</th><th style="width: 15%;">State</th><th style="width: 15%;">Local</th></tr> </thead> <tbody> <tr> <td>F</td><td>5</td><td></td></tr> <tr> <td>G*</td><td>75</td><td></td></tr> <tr> <td>H</td><td>7</td><td></td></tr> <tr> <td>J</td><td>13</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Guessing</td><td style="width: 50%;"><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Multiplication and Division of Whole Numbers | <b>Subcluster</b> | Multiplication and Division of Whole Numbers | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | F | 5 |  | G* | 75 |  | H | 7 |  | J | 13 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|--|--|----------------|--|-------------------|--|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|---|---|--|----|----|--|---|---|--|---|----|--|-----------------------------------|--|---|--|
| <b>Cluster</b>   | Multiplication and Division of Whole Numbers   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Subcluster</b>  | Multiplication and Division of Whole Numbers   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Content</b>   | Readiness  |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Process</b>   |  |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <b>Stimulus</b>  |  |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| Item   | State  | Local          |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| F  | 5  |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| G*   | 75   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| H  | 7  |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| J  | 13   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early   |                |  |                   |  |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |    |  |                                   |  |   |  |

\*Correct Answer (G)

|  |  |              |
|--|--|--------------|
| <p><b>3.4(K)</b> solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts</p> <p>! 2019 – Q26</p> <p>There are 3 basketball teams practicing together in a gym.</p> <ul style="list-style-type: none"> <li>• Each team has 10 players.</li> <li>• All of the players are used to make 6 groups during the practice.</li> <li>• There is an equal number of players in each group.</li> </ul> <p>How many players are in each group?</p> <p><b>F</b> 180</p> <p><b>G</b> 6</p> <p><b>H</b> 24</p> <p><b>J</b> 5</p> | <b>Analysis of Assessed Standards</b>        |              |
| <b>Cluster</b>   | Multiplication and Division of Whole Numbers |              |
| <b>Subcluster</b>  | Multiplication and Division of Whole Numbers |              |
| <b>Content</b>   | Readiness                                    |              |
| <b>Process</b>   |  |              |
| <b>Stimulus</b>  |  |              |
| <b>Data Analysis</b>   |  |              |
| <b>Item</b>  | <b>State</b>                                 | <b>Local</b> |
| <b>F</b>   | <b>10</b>                                    |              |
| <b>G</b>   | <b>20</b>                                    |              |
| <b>H</b>   | <b>15</b>                                    |              |
| <b>J*</b>  | <b>55</b>                                    |              |
| <b>Error Analysis</b>  |  |              |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early   |  |              |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |  |              |

\*Correct Answer (J)

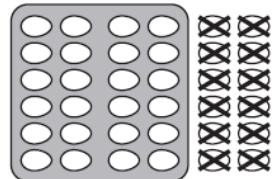
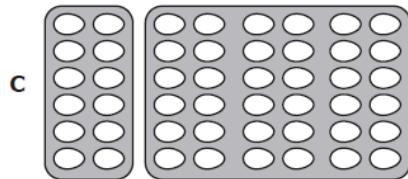
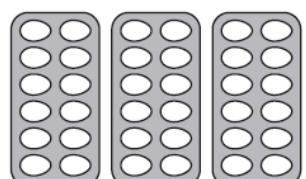
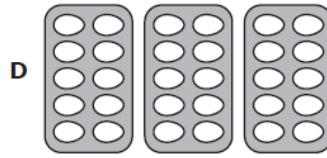
| <p><b>3.4(K)</b> solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts</p> <p>2018 – Q16</p> <p><b>16</b> A group of 64 children and 24 adults will travel to a zoo in vans. There will be 8 people in each van.</p> <p>How many vans will be needed to take the group to the zoo?</p> <p><b>F</b> 11<br/> <b>G</b> 80<br/> <b>H</b> 8<br/> <b>J</b> 5</p>   | <b>Analysis of Assessed Standards</b> |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
|---|---------------------------------------|--|------|-------|-------|----|----|--|---|----|--|---|----|--|---|---|--|
|   | <b>Cluster</b>                        | Multiplication and Division of Whole Numbers |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
|   | <b>Subcluster</b>                     | Multiplication and Division of Whole Numbers |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
|   | <b>Content</b>                        | Readiness                                    |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
|   | <b>Process</b>                        |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
|   | <b>Stimulus</b>                       |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| <b>Data Analysis</b>  |                                       |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
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| Item  | State                                 | Local  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| F*  | 65                                    |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| G   | 16                                    |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| H   | 16                                    |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| J   | 4                                     |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| <b>Error Analysis</b>   |                                       |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early  |                                       |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |                                       |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |

\*Correct Answer (F)

| <p><b>3.4(K)</b> solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts</p> <p>2016 – Q19</p> <p><b>19</b> There are two different vegetables in a garden.</p> <ul style="list-style-type: none"> <li>There are 5 rows that have 16 carrot plants in each row.</li> <li>There are 72 spinach plants.</li> </ul> <p>How many vegetable plants are there in the garden?</p> <p><b>A</b> 152<br/> <b>B</b> 88<br/> <b>C</b> 93<br/> <b>D</b> 122</p>                       | <b>Analysis of Assessed Standards</b> |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
|---|---------------------------------------|--|------|-------|-------|----|----|--|---|----|--|---|----|--|---|---|--|
|   | <b>Cluster</b>                        | Multiplication and Division of Whole Numbers |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
|   | <b>Subcluster</b>                     | Multiplication and Division of Whole Numbers |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
|   | <b>Content</b>                        | Readiness                                    |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
|   | <b>Process</b>                        | 3.1(A), 3.1(B), 3.1(F)                       |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
|   | <b>Stimulus</b>                       |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| <b>Data Analysis</b>  |                                       |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Item</th><th style="text-align: center;">State</th><th style="text-align: center;">Local</th></tr> </thead> <tbody> <tr> <td style="text-align: center;">A*</td><td style="text-align: center;">62</td><td></td></tr> <tr> <td style="text-align: center;">B</td><td style="text-align: center;">18</td><td></td></tr> <tr> <td style="text-align: center;">C</td><td style="text-align: center;">15</td><td></td></tr> <tr> <td style="text-align: center;">D</td><td style="text-align: center;">4</td><td></td></tr> </tbody> </table> |                                       |  | Item | State | Local | A* | 62 |  | B | 18 |  | C | 15 |  | D | 4 |  |
| Item  | State                                 | Local  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| A*  | 62                                    |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| B   | 18                                    |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| C   | 15                                    |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| D   | 4                                     |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| <b>Error Analysis</b>   |                                       |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early  |                                       |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |                                       |  |      |       |       |    |    |  |   |    |  |   |    |  |   |   |  |

\*Correct Answer (A)

|  |  |              |
|--|--|--------------|
| <p><b>3.4(K)</b> solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts</p> <p>2015 – Q11 Sample</p> <p><b>11</b> A music teacher had 4 boxes of recorders. There were 9 recorders in each box. The music teacher gave an equal number of recorders to each of 6 classes. How many recorders did each class receive?</p> <p><b>A</b> 7<br/> <b>B</b> 6<br/> <b>C</b> 30<br/> <b>D</b> 36</p> | <b>Analysis of Assessed Standards</b>        |              |
| <b>Cluster</b>   | Multiplication and Division of Whole Numbers |              |
| <b>Subcluster</b>  | Multiplication and Division of Whole Numbers |              |
| <b>Content</b>   | Readiness                                    |              |
| <b>Process</b>   | 3.1(A), 3.1(B), 3.1(F)                       |              |
| <b>Stimulus</b>  |  |              |
| <b>Data Analysis</b>   |  |              |
| <b>Item</b>  | <b>State</b>                                 | <b>Local</b> |
| A  | NA   |              |
| B*   | NA   |              |
| C  | NA   |              |
| D  | NA   |              |
| <b>Error Analysis</b>  |  |              |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts   |              |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early   |              |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |  |              |
| *Correct Answer (B)  |  |              |

| <p><b>3.5(B)</b> represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations</p> | <p><b>Analysis of Assessed Standards</b></p>  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
|--|---|-----------------------------------|--|---|--|----|--|----|----|--|---|----|--|---|----|--|
| <p>2021 – Q1</p>   | <p><b>Cluster</b> Multiplication and Division of Whole Numbers</p>  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>1 Victor bought 36 eggs at a grocery store. The eggs were in cartons with 12 eggs in each carton.</p>   | <p><b>Subcluster</b> Multiplication and Division of Whole Numbers</p>   |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>Which model best represents the number of cartons of eggs Victor bought?</p>  | <p><b>Content</b> Readiness</p>   |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>A </p>   | <p><b>Process</b></p>   |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>C </p>  | <p><b>Stimulus</b></p>  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>B </p>   | <p><b>Data Analysis</b></p>   |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>D </p>   | <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>6</td> <td></td> </tr> <tr> <td>B*</td> <td>74</td> <td></td> </tr> <tr> <td>C</td> <td>15</td> <td></td> </tr> <tr> <td>D</td> <td>5</td> <td></td> </tr> </tbody> </table>   | Item                              | State                                      | Local                                   | A  | 6  |  | B* | 74 |  | C | 15 |  | D | 5  |  |
| Item   | State   | Local                             |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| A  | 6   |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| B*   | 74  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| C  | 15  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| D  | 5   |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>*Correct Answer (B)</p>   | <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td> <td><input type="checkbox"/> Mixed Up Concepts</td> </tr> <tr> <td><input type="checkbox"/> Careless Error</td> <td><input type="checkbox"/> Stopped Too Early</td> </tr> </table>                               | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |    |  |    |    |  |   |    |  |   |    |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p></p>  | <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p>  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p><b>3.5(B)</b> represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations</p> | <p><b>Analysis of Assessed Standards</b></p>  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>! 2021 – Q29</p>  | <p><b>Cluster</b> Multiplication and Division of Whole Numbers</p>  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>29 Cassandra used all the balloons in 11 packages to decorate for a party.</p>  | <p><b>Subcluster</b> Multiplication and Division of Whole Numbers</p>   |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>• There were 6 balloons in each package.</p>  | <p><b>Content</b> Readiness</p>   |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>• Half of the balloons in each package were red.</p>  | <p><b>Process</b></p>   |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>Which equation can be used to find the total number of red balloons Cassandra used?</p>   | <p><b>Stimulus</b></p>  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>A <math>11 \times 6 - 3 = 63</math></p>   | <p><b>Data Analysis</b></p>   |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>B <math>11 \times 6 \div 2 = 33</math></p>  | <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>27</td> <td></td> </tr> <tr> <td>B*</td> <td>37</td> <td></td> </tr> <tr> <td>C</td> <td>13</td> <td></td> </tr> <tr> <td>D</td> <td>23</td> <td></td> </tr> </tbody> </table> | Item                              | State                                      | Local                                   | A  | 27 |  | B* | 37 |  | C | 13 |  | D | 23 |  |
| Item   | State   | Local                             |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| A  | 27  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| B*   | 37  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| C  | 13  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| D  | 23  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>C <math>11 - 6 + 2 = 7</math></p>   | <p><b>Error Analysis</b></p>  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>D <math>11 \times 6 \div 3 = 22</math></p>  | <table> <tr> <td><input type="checkbox"/> Guessing</td> <td><input type="checkbox"/> Mixed Up Concepts</td> </tr> <tr> <td><input type="checkbox"/> Careless Error</td> <td><input type="checkbox"/> Stopped Too Early</td> </tr> </table>  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |    |  |    |    |  |   |    |  |   |    |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |
| <p>*Correct Answer (B)</p>   | <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p>  |                                   |  |   |  |    |  |    |    |  |   |    |  |   |    |  |

|  |                                       |  |
|--|---------------------------------------|--|
| <b>3.5(B)</b> represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations                    | <b>Analysis of Assessed Standards</b> |  |
| 2019 – Q12   | <b>Cluster</b>                        | Multiplication and Division of Whole Numbers |
| Stacy used 21 feet of ribbon to make bows. She used 3 feet of ribbon for each bow.   | <b>Subcluster</b>                     | Multiplication and Division of Whole Numbers |
| Which equation can be used to find the number of bows Stacy made with this ribbon?   | <b>Content</b>                        | Readiness                                    |
| <b>F</b> $21 \times 3 = 63$  | <b>Process</b>                        |  |
| <b>G</b> $21 \div 3 = 7$   | <b>Stimulus</b>                       |  |
| <b>H</b> $21 + 3 = 24$   |                                       |  |
| <b>J</b> $21 - 3 = 18$   |                                       |  |
| <b>Data Analysis</b>   |                                       |  |
|  | <b>Item</b>                           | <b>State</b>                                 |
|  | F                                     | 24   |
|  | G*                                    | 63   |
|  | H                                     | 7  |
|  | J                                     | 6  |
| <b>Error Analysis</b>  |                                       |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |                                       |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |                                       |  |
| *Correct Answer (G)  |                                       |  |

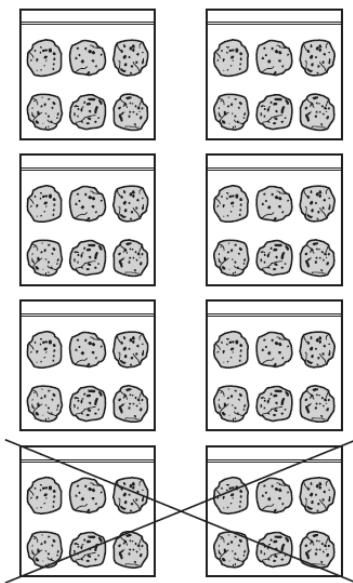
| <b>3.5(B)</b> represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations   |       | <b>Analysis of Assessed Standards</b>                          |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|---|-------|--|------|-------|-------|---|---|--|---|---|--|---|----|--|----|----|--|
| 2019 – Q32  |       | <b>Cluster</b> Multiplication and Division of Whole Numbers    |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| Yolanda made 11 sandwiches for a picnic. She used 2 pieces of bread for each sandwich.<br><br>Which strip diagram can be used to find the number of pieces of bread Yolanda used?   |       | <b>Subcluster</b> Multiplication and Division of Whole Numbers |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|   |       | <b>Content</b> Readiness                                       |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|   |       | <b>Process</b>   |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|   |       | <b>Stimulus</b>  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
|   |       |  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <b>Data Analysis</b>  |       |  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>F</td> <td>9</td> <td></td> </tr> <tr> <td>G</td> <td>7</td> <td></td> </tr> <tr> <td>H</td> <td>13</td> <td></td> </tr> <tr> <td>J*</td> <td>71</td> <td></td> </tr> </tbody> </table> |       |  | Item | State | Local | F | 9 |  | G | 7 |  | H | 13 |  | J* | 71 |  |
| Item  | State | Local  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| F   | 9     |  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| G   | 7     |  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| H   | 13    |  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| J*  | 71    |  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <b>Error Analysis</b>   |       |  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early  |       |  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |       |  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |
| <p>*Correct Answer (J)</p>  |       |  |      |       |       |   |   |  |   |   |  |   |    |  |    |    |  |

**3.5(B)** represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations

#### Analysis of Assessed Standards

! 2018 – Q22

**22** Noah has 48 cookies. The model represents what he did with the cookies.



Based on the model, which of these could explain what Noah did with the cookies?

- F** He put  $(48 \div 8)$  cookies into each of 8 bags and ate  $(2 \times 6)$  of the cookies.
- G** He put  $(48 \div 6)$  cookies into each of 8 bags and ate  $(2 \times 8)$  of the cookies.
- H** He put  $(48 - 6)$  cookies into each of 8 bags and ate  $(2 \times 6)$  of the cookies.
- J** He put  $(48 \times 6)$  cookies into each of 8 bags and ate  $(2 + 6)$  of the cookies.

\*Correct Answer (F)

|                   |  |
|-------------------|--|
| <b>Cluster</b>    | Multiplication and Division of Whole Numbers |
| <b>Subcluster</b> | Multiplication and Division of Whole Numbers |
| <b>Content</b>    | Readiness                                    |
| <b>Process</b>    |  |
| <b>Stimulus</b>   |  |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F*   | 50    |       |
| G    | 24    |       |
| H    | 20    |       |
| J    | 6     |       |

#### Error Analysis

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

|   |  |  |
|---|--|--|
| <b>3.5(B)</b> represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations | <b>Analysis of Assessed Standards</b>                        |  |
| 2017 – Q21  | <b>Cluster</b>   | Multiplication and Division of Whole Numbers |
| <b>21</b> A classroom currently contains 6 rows of chairs with 5 chairs per row. On parents' night the classroom had twice as many chairs.      | <b>Subcluster</b>  | Multiplication and Division of Whole Numbers |
| Which number sentence can be used to find the number of chairs in the classroom on parents' night?  | <b>Content</b>   | Readiness                                    |
| <b>A</b> $6 + 5 + 2 = \square$  | <b>Process</b>   |  |
| <b>B</b> $6 \times 5 \times 2 = \square$  | <b>Stimulus</b>  |  |
| <b>C</b> $6 \times 5 \div 2 = \square$  | <b>Data Analysis</b>   |  |
| <b>D</b> $6 + 5 \times 2 = \square$   | <b>Item</b>  | <b>State</b>                                 |
|   | A  | 7  |
|   | B*   | 70   |
|   | C  | 12   |
|   | D  | 10   |
|   | <b>Error Analysis</b>  |  |
|   | <input type="checkbox"/> Guessing                            | <input type="checkbox"/> Mixed Up Concepts   |
|   | <input type="checkbox"/> Careless Error                      | <input type="checkbox"/> Stopped Too Early   |
| <b>*Correct Answer (B)</b>  | <b>Learning from Mistakes<br/>Instructional Implications</b> |  |

|  |  |  |
|--|--|--|
| <b>3.5(B)</b> represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations  | <b>Analysis of Assessed Standards</b>                        |  |
| <b>!</b> 2016 – Q24  | <b>Cluster</b>   | Multiplication and Division of Whole Numbers |
| <b>24</b> To make posters, 6 students each collected 8 pictures of animals. The students put 4 animal pictures on each poster they made. Which equation shows one way to find the number of posters the students made? | <b>Subcluster</b>  | Multiplication and Division of Whole Numbers |
| <b>F</b> $6 + 8 + 4 = 18$  | <b>Content</b>   | Readiness                                    |
| <b>G</b> $6 \times 8 \div 4 = 12$  | <b>Process</b>   | 3.1(A), 3.1(B), 3.1(D), 3.1(F)               |
| <b>H</b> $6 \times 8 \times 4 = 192$   | <b>Stimulus</b>  |  |
| <b>J</b> $6 + 8 - 4 = 10$  | <b>Data Analysis</b>   |  |
|  | <b>Item</b>  | <b>State</b>                                 |
|  | F  | 17   |
|  | G*   | 55   |
|  | H  | 19   |
|  | J  | 9  |
| <b>*Correct Answer (G)</b>   | <b>Error Analysis</b>  |  |
|  | <input type="checkbox"/> Guessing                            | <input type="checkbox"/> Mixed Up Concepts   |
|  | <input type="checkbox"/> Careless Error                      | <input type="checkbox"/> Stopped Too Early   |
|  | <b>Learning from Mistakes<br/>Instructional Implications</b> |  |

# Geometry

**3.6 Geometry and measurement.** The student applies mathematical process standards to analyze attributes of two-dimensional geometric figures to develop generalizations about their properties.

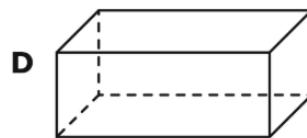
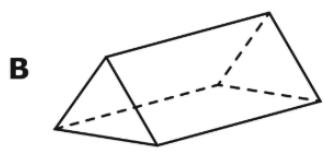
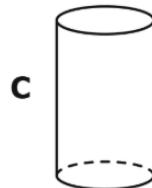
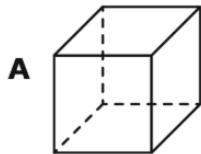
| 3.6(A) classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language |   | Analysis of Assessed Standards                       |  |                   |          |             |  |      |       |
|---|---|--|--|-------------------|----------|-------------|--|------|-------|
| 2021 – Q30  |   | Cluster  | Geometry                                   |                   |          |             |  |      |       |
| <b>30</b> The objects shown can be classified into groups based on their shape.   |   | Subcluster   | Two-Dimensional/Three-Dimensional          |                   |          |             |  |      |       |
| <br>Can  | <br>Eraser | Content  | Readiness                                  |                   |          |             |  |      |       |
| <br>Toolbox  | <br>Drum   | Process  |  |                   |          |             |  |      |       |
| Which table best represents the classifications for these objects?  |   | Stimulus   |  |                   |          |             |  |      |       |
| <b>F</b> Classifications  |   | Data Analysis  |  |                   |          |             |  |      |       |
| <table border="1"><thead><tr><th>Group</th><th>Object</th></tr></thead><tbody><tr><td>Prism</td><td>Eraser<br/>Toolbox</td></tr><tr><td>Cylinder</td><td>Can<br/>Drum</td></tr></tbody></table>     | Group   | Object   | Prism                                      | Eraser<br>Toolbox | Cylinder | Can<br>Drum |  | Item | State |
| Group   | Object  |  |  |                   |          |             |  |      |       |
| Prism   | Eraser<br>Toolbox   |  |  |                   |          |             |  |      |       |
| Cylinder  | Can<br>Drum   |  |  |                   |          |             |  |      |       |
|   |   | F*   | 64   |                   |          |             |  |      |       |
|   |   | G  | 16   |                   |          |             |  |      |       |
|   |   | H  | 13   |                   |          |             |  |      |       |
|   |   | J  | 7  |                   |          |             |  |      |       |
| <b>H</b> Classifications  |   | Error Analysis                                       |  |                   |          |             |  |      |       |
|   |   | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |                   |          |             |  |      |       |
|   |   | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |                   |          |             |  |      |       |
| <b>G</b> Classifications  |   | Learning from Mistakes<br>Instructional Implications |  |                   |          |             |  |      |       |
| <table border="1"><thead><tr><th>Group</th><th>Object</th></tr></thead><tbody><tr><td>Cube</td><td>Eraser<br/>Toolbox</td></tr><tr><td>Cylinder</td><td>Can<br/>Drum</td></tr></tbody></table>      | Group   | Object   | Cube                                       | Eraser<br>Toolbox | Cylinder | Can<br>Drum |  |      |       |
| Group   | Object  |  |  |                   |          |             |  |      |       |
| Cube  | Eraser<br>Toolbox   |  |  |                   |          |             |  |      |       |
| Cylinder  | Can<br>Drum   |  |  |                   |          |             |  |      |       |
| <b>J</b> Classifications  |   |  |  |                   |          |             |  |      |       |
| <table border="1"><thead><tr><th>Group</th><th>Object</th></tr></thead><tbody><tr><td>Cylinder</td><td>Eraser<br/>Toolbox</td></tr><tr><td>Prism</td><td>Can<br/>Drum</td></tr></tbody></table>     | Group   | Object   | Cylinder                                   | Eraser<br>Toolbox | Prism    | Can<br>Drum |  |      |       |
| Group   | Object  |  |  |                   |          |             |  |      |       |
| Cylinder  | Eraser<br>Toolbox   |  |  |                   |          |             |  |      |       |
| Prism   | Can<br>Drum   |  |  |                   |          |             |  |      |       |
| *Correct Answer (F)   |   |  |  |                   |          |             |  |      |       |

**3.6(A)** classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language

#### Analysis of Assessed Standards

2019 – Q11

Which figure CANNOT be classified as a prism?



\*Correct Answer (C)

**Cluster** Geometry

**Subcluster** Two-Dimensional/Three-Dimensional

**Content** Readiness

**Process**

**Stimulus**

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    | 10    |       |
| B    | 4     |       |
| C*   | 84    |       |
| D    | 2     |       |

#### Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

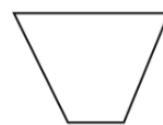
#### Learning from Mistakes Instructional Implications

**3.6(A)** classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language

#### Analysis of Assessed Standards

2019 – Q30

The figures shown can be sorted into groups.



Which list shows a correct way to group these figures?

- F** 1 triangle, 3 quadrilaterals, and 1 pentagon  
**G** 1 triangle and 4 quadrilaterals  
**H** 1 triangle, 3 quadrilaterals, and 1 hexagon  
**J** 1 triangle, 2 quadrilaterals, and 2 pentagons

**Cluster** Geometry

**Subcluster** Two-Dimensional/Three-Dimensional

**Content** Readiness

**Process**

**Stimulus**

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F*   | 67    |       |
| G    | 7     |       |
| H    | 17    |       |
| J    | 9     |       |

#### Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

\*Correct Answer (F)

**3.6(A)** classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language

! 2018 – Q9

- 9 The figures shown can be sorted into groups.



Which list shows a correct way to group the figures?

- A 2 prisms, 1 cone, 2 cylinders, and 1 pyramid
- B 3 prisms, 1 cone, and 2 cylinders
- C 2 prisms, 2 cylinders, 1 sphere, and 1 cube
- D 3 prisms, 1 cylinder, and 2 cones

\*Correct Answer (B)

#### Analysis of Assessed Standards

|            |                                   |
|------------|-----------------------------------|
| Cluster    | Geometry                          |
| Subcluster | Two-Dimensional/Three-Dimensional |
| Content    | Readiness                         |
| Process    |                                   |
| Stimulus   |                                   |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    | 28    |       |
| B*   | 47    |       |
| C    | 19    |       |
| D    | 6     |       |

#### Error Analysis

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

**3.6(A)** classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language

! 2018 – Q19

- 19 Dominique put figures into groups based on certain attributes. Sometimes she put figures into more than one group.

Dominique's Figures

| Group | Attribute               |
|-------|-------------------------|
| 1     | Has all sides congruent |
| 2     | Has exactly 4 sides     |
| 3     | Is a polygon            |

Which statement is true?

- A A square could be put into all the groups.
- B A triangle could be put into all the groups.
- C A rectangle could be put into Groups 1 and 2 only.
- D A pentagon could be put into Group 1 only.

#### Analysis of Assessed Standards

|            |                                   |
|------------|-----------------------------------|
| Cluster    | Geometry                          |
| Subcluster | Two-Dimensional/Three-Dimensional |
| Content    | Readiness                         |
| Process    |                                   |
| Stimulus   |                                   |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| A*   | 58    |       |
| B    | 5     |       |
| C    | 25    |       |
| D    | 12    |       |

#### Error Analysis

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

\*Correct Answer (A)

**3.6(A)** classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language

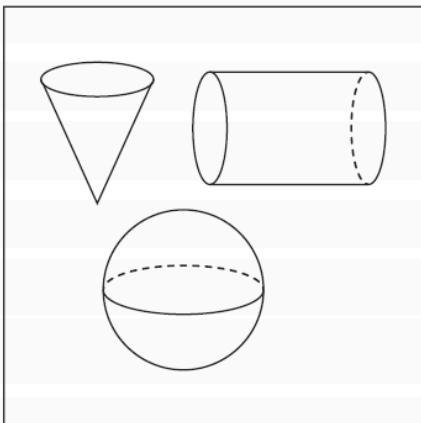
**Analysis of Assessed Standards**

|                   |                                   |
|-------------------|-----------------------------------|
| <b>Cluster</b>    | Geometry                          |
| <b>Subcluster</b> | Two-Dimensional/Three-Dimensional |
| <b>Content</b>    | Readiness                         |
| <b>Process</b>    |                                   |
| <b>Stimulus</b>   |                                   |

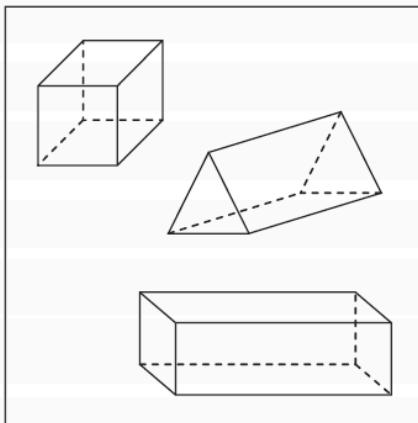
! 2017 – Q8

8 Zayne sorted some figures into two groups.

Group X



Group Y



Which statement about the figures Zayne sorted is true?

- F All the figures in Group X are cylinders.
- G All the figures in Group X are cones.
- H All the figures in Group Y are prisms.
- J All the figures in Group Y are rectangular prisms.

\*Correct Answer (H)

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| F    | 15    |       |
| G    | 2     |       |
| H*   | 66    |       |
| J    | 17    |       |

**Error Analysis**

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

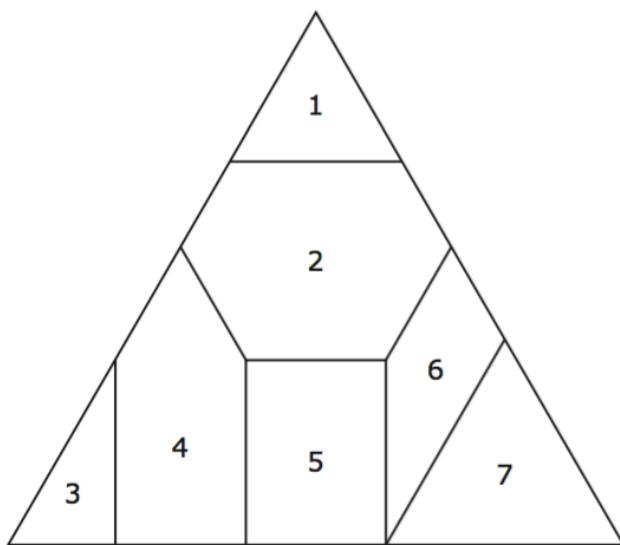
**Learning from Mistakes**  
**Instructional Implications**

**3.6(A)** classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language

**Analysis of Assessed Standards**

! 2016 – Q20

**20** A figure is divided into 7 sections, as shown below.



Which 2 sections are quadrilaterals?

- F** Sections 4 and 5
- G** Sections 2 and 4
- H** Sections 1 and 3
- J** Sections 5 and 6

\*Correct Answer (J)

|                   |                                   |
|-------------------|-----------------------------------|
| <b>Cluster</b>    | Geometry                          |
| <b>Subcluster</b> | Two-Dimensional/Three-Dimensional |
| <b>Content</b>    | Readiness                         |
| <b>Process</b>    | 3.1(B), 3.1(E), 3.1(F)            |
| <b>Stimulus</b>   |                                   |

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| F    | 11    |       |
| G    | 11    |       |
| H    | 9     |       |
| J*   | 69    |       |

**Error Analysis**

- Guessing       Mixed Up Concepts
- Careless Error     Stopped Too Early

**Learning from Mistakes**  
**Instructional Implications**

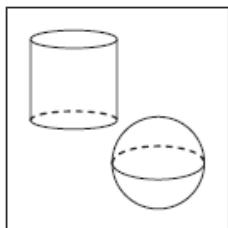
**3.6(A)** classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language

#### Analysis of Assessed Standards

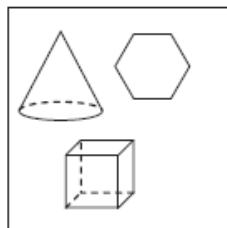
2016 – Q34

- 34** Sofia separated some figures into two sets. The figures in Set A have a common characteristic. The figures in Set B do not have the characteristic.

Set A



Set B



Which of these is the best description of the common characteristic of the figures in Set A?

- F They have no vertices.
- G They have at least one circular base.
- H They have at least one edge.
- J They have faces that are polygons.

**Cluster** Geometry

**Subcluster** Two-Dimensional/Three-Dimensional

**Content** Readiness

**Process** 3.1(A), 3.1(B), 3.1(E), 3.1(G)

**Stimulus**

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F*   | 77    |       |
| G    | 12    |       |
| H    | 4     |       |
| J    | 6     |       |

#### Error Analysis

- Guessing       Mixed Up Concepts
- Careless Error       Stopped Too Early

#### Learning from Mistakes Instructional Implications

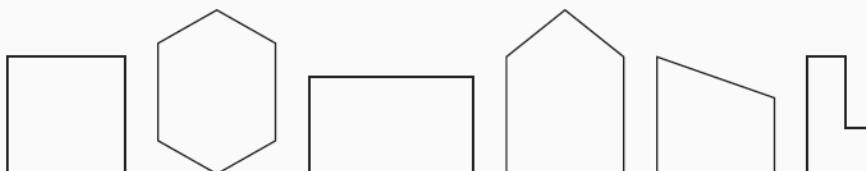
\*Correct Answer (F)

**3.6(A)** classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language

#### Analysis of Assessed Standards

! 2015 – Q17 Sample

- 17** The figures shown can be sorted into groups.



Which of these shows a correct way to group these figures?

- A 3 rectangles and 3 hexagons
- B 2 hexagons and 4 quadrilaterals
- C 2 hexagons, 2 pentagons, and 2 rectangles
- D 1 pentagon, 2 hexagons, and 3 quadrilaterals

**Cluster** Geometry

**Subcluster** Two-Dimensional/Three-Dimensional

**Content** Readiness

**Process** 3.1(B), 3.1(E), 3.1(F)

**Stimulus**

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    | NA    |       |
| B    | NA    |       |
| C    | NA    |       |
| D*   | NA    |       |

#### Error Analysis

- Guessing       Mixed Up Concepts
- Careless Error       Stopped Too Early

#### Learning from Mistakes Instructional Implications

\*Correct Answer (D)



| <p><b>3.6(B)</b> use attributes to recognize rhombuses, parallelograms, trapezoids, rectangles, and squares as examples of quadrilaterals and draw examples of quadrilaterals that do not belong to any of these subcategories</p>   | <p><b>Analysis of Assessed Standards</b></p>   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
|--|--|-------|-------|-------|---|----|--|----|----|--|---|----|--|---|---|--|
| <p>! 2017 – Q26</p>  | <p><b>Cluster</b> Geometry</p>   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <p><b>26</b> In which set do all the figures appear to be either a rhombus, parallelogram, trapezoid, rectangle, or square?</p>  | <p><b>Subcluster</b> Two-Dimensional/Three-Dimensional</p>   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <p>F    </p> | <p><b>Content</b> Supporting</p>   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <p>G    </p> | <p><b>Process</b></p>  |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <p>H    </p> | <p><b>Stimulus</b></p>   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <p>J    </p> | <p><b>Data Analysis</b></p>  |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <p></p>  | <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>F</td> <td>17</td> <td></td> </tr> <tr> <td>G*</td> <td>63</td> <td></td> </tr> <tr> <td>H</td> <td>14</td> <td></td> </tr> <tr> <td>J</td> <td>6</td> <td></td> </tr> </tbody> </table> | Item  | State | Local | F | 17 |  | G* | 63 |  | H | 14 |  | J | 6 |  |
| Item   | State  | Local |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| F  | 17   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| G*   | 63   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| H  | 14   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| J  | 6  |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <p></p>  | <p><b>Error Analysis</b></p>   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <p></p>  | <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts</p>   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <p></p>  | <p><input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p>   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <p></p>  | <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p>   |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |
| <p>*Correct Answer (G)</p>   | <p></p>  |       |       |       |   |    |  |    |    |  |   |    |  |   |   |  |

**3.6(B)** use attributes to recognize rhombuses, parallelograms, trapezoids, rectangles, and squares as examples of quadrilaterals and draw examples of quadrilaterals that do not belong to any of these subcategories

**Analysis of Assessed Standards**

! 2016 – Q17

**17** A group of figures is shown.

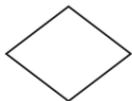


Figure V

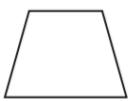


Figure W



Figure X

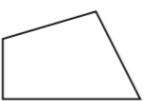


Figure Y

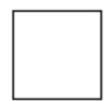


Figure Z

Which of these figures do **not** appear to be a rhombus, trapezoid, rectangle, or square?

- A** Figures V, W, X, and Z
- B** Figures W and Y
- C** Figure Y only
- D** Figures V, X, and Z only

|                   |                                   |
|-------------------|-----------------------------------|
| <b>Cluster</b>    | Geometry                          |
| <b>Subcluster</b> | Two-Dimensional/Three-Dimensional |
| <b>Content</b>    | Supporting                        |
| <b>Process</b>    | 3.1(B), 3.1(E), 3.1(F)            |
| <b>Stimulus</b>   |                                   |

| <b>Data Analysis</b> |              |              |
|----------------------|--------------|--------------|
| <b>Item</b>          | <b>State</b> | <b>Local</b> |
| A                    | 5            |              |
| B                    | 14           |              |
| C*                   | 77           |              |
| D                    | 4            |              |

| <b>Error Analysis</b>  |
|--|
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts       |
| <input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |

**Learning from Mistakes**  
**Instructional Implications**

\*Correct Answer (C)

# Measurement

**3.7 Geometry and measurement.** The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurement.

## Connected Knowledge and Skills 3.6

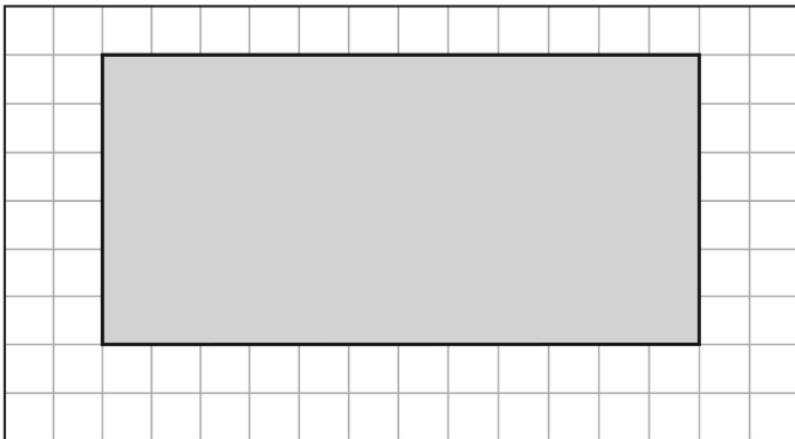
| <b>3.6(C)</b> determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row                               |  | <b>Analysis of Assessed Standards</b>                              |  |
|---|--|--|--|
| 2021 – Q7   |  | <b>Cluster</b>   | Measurement                                |
| <b>7</b> Workers at a school are covering a rectangular patio with square tiles. Each square tile has an area of 1 square yard. The figure shows the part of the patio that has already been covered with square tiles. |  | <b>Subcluster</b>  | Area                                       |
|   |  | <b>Content</b>   | Readiness                                  |
|   |  | <b>Process</b>   |  |
|   |  | <b>Stimulus</b>  |  |
|   |  | <b>Data Analysis</b>   |  |
|   |  | <b>Item</b>  | <b>State</b>                               |
|   |  | A*   | 61   |
|   |  | B  | 10   |
|   |  | C  | 11   |
|   |  | D  | 18   |
|   |  | <b>Error Analysis</b>  |  |
|   |  | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts |
|   |  | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early |
|   |  | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |
| *Correct Answer (A)   |  |  |  |

| <p><b>3.6(C)</b> determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row</p>                         | <p><b>Analysis of Assessed Standards</b></p>  |       |       |       |
|--|---|-------|-------|-------|
| <p>2021 – Q18</p>  | <p><b>Cluster</b> Measurement</p>   |       |       |       |
| <p><b>18</b> Heidi is making a rectangular card. The shaded rectangle on the grid represents the card.</p>   | <p><b>Subcluster</b> Area</p>   |       |       |       |
|  | <p><b>Content</b> Readiness</p>   |       |       |       |
|  | <p><b>Process</b></p>   |       |       |       |
|  | <p><b>Stimulus</b></p>  |       |       |       |
|  |   |       |       |       |
|  | <p><b>Data Analysis</b></p>   |       |       |       |
|  | <table border="1"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> </table> | Item  | State | Local |
| Item   | State   | Local |       |       |
| <p>F</p>   | <p>7</p>  |       |       |       |
| <p>G</p>   | <p>26</p>   |       |       |       |
| <p>H</p>   | <p>20</p>   |       |       |       |
| <p>J*</p>  | <p>47</p>   |       |       |       |
|  | <p><b>Error Analysis</b></p>  |       |       |       |
| <p><input type="checkbox"/> Guessing</p>   | <p><input type="checkbox"/> Mixed Up Concepts</p>   |       |       |       |
| <p><input type="checkbox"/> Careless Error</p>   | <p><input type="checkbox"/> Stopped Too Early</p>   |       |       |       |
|  | <p><b>Learning from Mistakes</b></p>  |       |       |       |
|  | <p><b>Instructional Implications</b></p>  |       |       |       |
| <p>What is the area of this card in square centimeters?</p> <p>F 18 square centimeters<br/>     G 36 square centimeters<br/>     H 90 square centimeters<br/>     J 81 square centimeters</p> <p>*Correct Answer (J)</p> |   |       |       |       |

**3.6(C)** determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row

2019 – Q16

The shaded figure on the grid represents Erin's rectangular lawn.



= 1 square meter

What is the area in square meters of Erin's lawn?

- F** 18 square meters
- G** 36 square meters
- H** 62 square meters
- J** 72 square meters

\*Correct Answer (J)

#### Analysis of Assessed Standards

**Cluster** Measurement

**Subcluster** Area

**Content** Readiness

**Process**

**Stimulus**

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F    | 4     |       |
| G    | 14    |       |
| H    | 7     |       |
| J*   | 75    |       |

#### Error Analysis

Guessing       Mixed Up Concepts

Careless Error       Stopped Too Early

#### Learning from Mistakes Instructional Implications

**3.6(C)** determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row

#### Analysis of Assessed Standards

|            |             |
|------------|-------------|
| Cluster    | Measurement |
| Subcluster | Area        |
| Content    | Readiness   |
| Process    |             |
| Stimulus   |             |

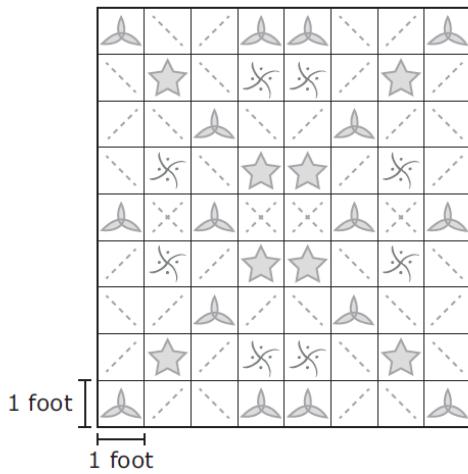
#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F    | 6     |       |
| G    | 15    |       |
| H*   | 73    |       |
| J    | 6     |       |

#### Error Analysis

- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

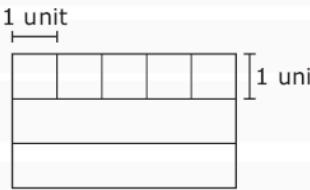
#### Learning from Mistakes Instructional Implications



What is the area of the blanket in square feet?

- F** 17 square feet
- G** 34 square feet
- H** 72 square feet
- J** 63 square feet

\*Correct Answer (H)

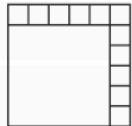
| <p><b>3.6(C)</b> determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row</p> <p>2017 – Q3</p> <p><b>3</b> A model of a rectangular bulletin board is shown. The top row has been divided into squares of equal size.</p>  <p>The rest of the model will also be divided into squares of the same size. What is the area in square units represented by this model?</p> <p><b>A</b> 8 square units<br/> <b>B</b> 15 square units<br/> <b>C</b> 12 square units<br/> <b>D</b> 16 square units</p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;"><b>Cluster</b></td><td style="padding: 2px;">Measurement</td></tr> <tr> <td style="padding: 2px;"><b>Subcluster</b></td><td style="padding: 2px;">Area</td></tr> <tr> <td style="padding: 2px;"><b>Content</b></td><td style="padding: 2px;">Readiness</td></tr> <tr> <td style="padding: 2px;"><b>Process</b></td><td style="padding: 2px;"></td></tr> <tr> <td style="padding: 2px;"><b>Stimulus</b></td><td style="padding: 2px;"></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="padding: 2px;">Item</th><th style="padding: 2px;">State</th><th style="padding: 2px;">Local</th></tr> </thead> <tbody> <tr> <td style="padding: 2px;">A</td><td style="padding: 2px;">5</td><td style="padding: 2px;"></td></tr> <tr> <td style="padding: 2px;">B*</td><td style="padding: 2px;">88</td><td style="padding: 2px;"></td></tr> <tr> <td style="padding: 2px;">C</td><td style="padding: 2px;">3</td><td style="padding: 2px;"></td></tr> <tr> <td style="padding: 2px;">D</td><td style="padding: 2px;">4</td><td style="padding: 2px;"></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;"><input type="checkbox"/> Guessing</td><td style="width: 50%; padding: 2px;"><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td style="padding: 2px;"><input type="checkbox"/> Careless Error</td><td style="padding: 2px;"><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Measurement | <b>Subcluster</b> | Area | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | A | 5 |  | B* | 88 |  | C | 3 |  | D | 4 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|--|--|----------------|-------------|-------------------|------|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|---|---|--|----|----|--|---|---|--|---|---|--|-----------------------------------|--|---|--|
| <b>Cluster</b>   | Measurement  |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Subcluster</b>  | Area   |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Content</b>   | Readiness  |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Process</b>   |  |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Stimulus</b>  |  |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| Item   | State  | Local          |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| A  | 5  |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| B*   | 88   |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| C  | 3  |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| D  | 4  |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts   |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early   |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <p>*Correct Answer (B)</p>   |  |                |             |                   |      |                |           |                |  |                 |  |      |       |       |   |   |  |    |    |  |   |   |  |   |   |  |                                   |  |   |  |

**3.6(C)** determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row

**Analysis of Assessed Standards**

! 2017 – Q22

- 22** Each rectangle shown will be covered with equal-size squares. Some of the squares have been placed as shown.



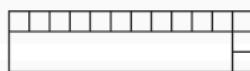
Rectangle V



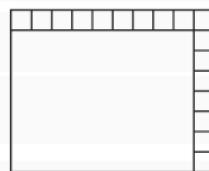
Rectangle W



Rectangle X



Rectangle Y



Rectangle Z

$\square = 1$  square centimeter

Which of these rectangles have an area of 36 square centimeters?

- F** Rectangles V, W, X, Y, and Z  
**G** Rectangles X and Y only  
**H** Rectangles W and Z only  
**J** Rectangles V, X, and Y only

\*Correct Answer (J)

**Cluster** Measurement

**Subcluster** Area

**Content** Readiness

**Process**

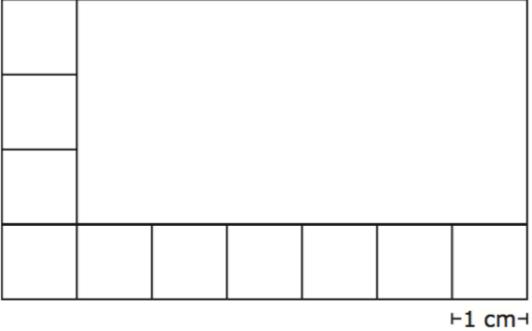
**Stimulus**

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| F    | 5     |       |
| G    | 16    |       |
| H    | 11    |       |
| J*   | 67    |       |

|   |  |
|---|--|
| <input type="checkbox"/> Guessing       | <input type="checkbox"/> Mixed Up Concepts |
| <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |

**Learning from Mistakes**  
**Instructional Implications**

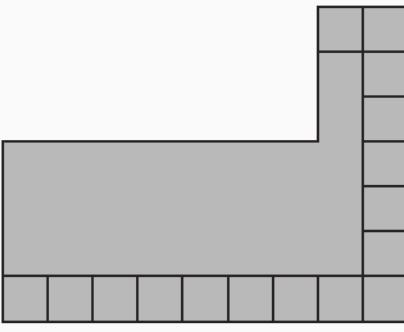
| <p><b>3.6(C)</b> determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row</p> <p>! 2016 – Q11</p> <p><b>11</b> Felicia started placing square tiles inside a rectangle, as shown in the diagram. Each square tile has a side length of 1 cm.</p>  <p>She continued placing square tiles without any overlaps to cover the rectangle. What is the area of the rectangle in square centimeters?</p> <p>Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.</p> <p>*Correct Answer (28)</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Analysis of Assessed Standards</th></tr> </thead> <tbody> <tr> <td style="width: 15%;">Cluster</td><td colspan="2">Measurement</td></tr> <tr> <td>Subcluster</td><td colspan="2">Area</td></tr> <tr> <td>Content</td><td colspan="2">Readiness</td></tr> <tr> <td>Process</td><td colspan="2">3.1(A), 3.1(B), 3.1(E), 3.1(F)</td></tr> <tr> <td>Stimulus</td><td colspan="2"></td></tr> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Data Analysis</th></tr> <tr> <th style="width: 15%;">Item</th><th style="width: 30%;">State</th><th style="width: 55%;">Local</th></tr> <tr> <td>28</td><td>68*</td><td></td></tr> <tr> <td></td><td>31</td><td></td></tr> <tr> <td></td><td></td><td></td></tr> <tr> <td></td><td></td><td></td></tr> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Error Analysis</th></tr> <tr> <td colspan="3"> <input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early         </td></tr> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Learning from Mistakes<br/>Instructional Implications</th></tr> <tr> <td colspan="3"></td></tr> </tbody> </table> | Analysis of Assessed Standards |  |  | Cluster | Measurement |  | Subcluster | Area |  | Content | Readiness |  | Process | 3.1(A), 3.1(B), 3.1(E), 3.1(F) |  | Stimulus |  |  | Data Analysis |  |  | Item | State | Local | 28 | 68* |  |  | 31 |  |  |  |  |  |  |  | Error Analysis |  |  | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |  | Learning from Mistakes<br>Instructional Implications |  |  |  |  |  |
|--|--|--------------------------------|--|--|---------|-------------|--|------------|------|--|---------|-----------|--|---------|--------------------------------|--|----------|--|--|---------------|--|--|------|-------|-------|----|-----|--|--|----|--|--|--|--|--|--|--|----------------|--|--|--|--|--|--|--|--|--|--|--|
| Analysis of Assessed Standards   |  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Cluster  | Measurement  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Subcluster   | Area   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Content  | Readiness  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Process  | 3.1(A), 3.1(B), 3.1(E), 3.1(F)   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Stimulus   |  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Data Analysis  |  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Item   | State  | Local                          |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
| 28   | 68*  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
|  | 31   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
|  |  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
|  |  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Error Analysis   |  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early   |  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Learning from Mistakes<br>Instructional Implications   |  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |
|  |  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                                |  |          |  |  |               |  |  |      |       |       |    |     |  |  |    |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |

| <p><b>3.6(C)</b> determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row</p> <p>2016 – Q39</p> <p><b>39</b> Donte counted the square tiles on a rectangular floor at his school. Each tile had an area of 1 square foot. On the floor there were 9 rows of tiles and 36 tiles in each row. What is the area of the floor in square feet?</p> <p><b>A</b> 360 square feet<br/> <b>B</b> 45 square feet<br/> <b>C</b> 324 square feet<br/> <b>D</b> 90 square feet</p> <p>*Correct Answer (C)</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Analysis of Assessed Standards</th></tr> </thead> <tbody> <tr> <td style="width: 15%;">Cluster</td><td colspan="2">Measurement</td></tr> <tr> <td>Subcluster</td><td colspan="2">Area</td></tr> <tr> <td>Content</td><td colspan="2">Readiness</td></tr> <tr> <td>Process</td><td colspan="2">3.1(A), 3.1(B), 3.1(F)</td></tr> <tr> <td>Stimulus</td><td colspan="2"></td></tr> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Data Analysis</th></tr> <tr> <th style="width: 15%;">Item</th><th style="width: 30%;">State</th><th style="width: 55%;">Local</th></tr> <tr> <td>A</td><td>11</td><td></td></tr> <tr> <td>B</td><td>17</td><td></td></tr> <tr> <td>C*</td><td>64</td><td></td></tr> <tr> <td>D</td><td>8</td><td></td></tr> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Error Analysis</th></tr> <tr> <td colspan="3"> <input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early         </td></tr> <tr> <th colspan="3" style="text-align: center; background-color: #cccccc;">Learning from Mistakes<br/>Instructional Implications</th></tr> <tr> <td colspan="3"></td></tr> </tbody> </table> | Analysis of Assessed Standards |  |  | Cluster | Measurement |  | Subcluster | Area |  | Content | Readiness |  | Process | 3.1(A), 3.1(B), 3.1(F) |  | Stimulus |  |  | Data Analysis |  |  | Item | State | Local | A | 11 |  | B | 17 |  | C* | 64 |  | D | 8 |  | Error Analysis |  |  | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |  |  | Learning from Mistakes<br>Instructional Implications |  |  |  |  |  |
|---|---|--------------------------------|--|--|---------|-------------|--|------------|------|--|---------|-----------|--|---------|------------------------|--|----------|--|--|---------------|--|--|------|-------|-------|---|----|--|---|----|--|----|----|--|---|---|--|----------------|--|--|--|--|--|--|--|--|--|--|--|
| Analysis of Assessed Standards  |   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Cluster   | Measurement   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Subcluster  | Area  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Content   | Readiness   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Process   | 3.1(A), 3.1(B), 3.1(F)  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Stimulus  |   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Data Analysis   |   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Item  | State   | Local                          |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| A   | 11  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| B   | 17  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| C*  | 64  |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| D   | 8   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Error Analysis  |   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early  |   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
| Learning from Mistakes<br>Instructional Implications  |   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |
|   |   |                                |  |  |         |             |  |            |      |  |         |           |  |         |                        |  |          |  |  |               |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |                |  |  |  |  |  |  |  |  |  |  |  |

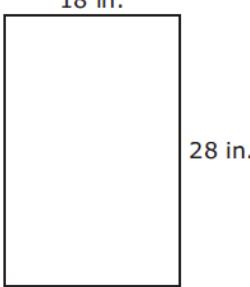
| <p><b>3.6(C)</b> determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row</p> <p>2015 – Q18 Sample</p> <p><b>18</b> Joseph counted the square tiles on the ceiling of his rectangular closet. The area of each tile is 1 square foot. The ceiling has 5 rows of tiles with 4 tiles in each row. What is the area of the ceiling of Joseph's closet in square feet?</p> <p><b>A</b> 20 square feet<br/> <b>B</b> 10 square feet<br/> <b>C</b> 18 square feet<br/> <b>D</b> 9 square feet</p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Measurement</td></tr> <tr> <td><b>Subcluster</b></td><td>Area</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td>3.1(A), 3.1(B), 3.1(F)</td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>A*</td><td>NA</td><td></td></tr> <tr> <td>B</td><td>NA</td><td></td></tr> <tr> <td>C</td><td>NA</td><td></td></tr> <tr> <td>D</td><td>NA</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Measurement | <b>Subcluster</b> | Area | <b>Content</b> | Readiness | <b>Process</b> | 3.1(A), 3.1(B), 3.1(F) | <b>Stimulus</b> |  | Item | State | Local | A* | NA |  | B | NA |  | C | NA |  | D | NA |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|--|---|----------------|-------------|-------------------|------|----------------|-----------|----------------|------------------------|-----------------|--|------|-------|-------|----|----|--|---|----|--|---|----|--|---|----|--|-----------------------------------|--|---|--|
| <b>Cluster</b>   | Measurement   |                |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Subcluster</b>  | Area  |                |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Content</b>   | Readiness   |                |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Process</b>   | 3.1(A), 3.1(B), 3.1(F)  |                |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <b>Stimulus</b>  |   |                |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| Item   | State   | Local          |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| A*   | NA  |                |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| B  | NA  |                |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| C  | NA  |                |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| D  | NA  |                |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts  |                |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early  |                |             |                   |      |                |           |                |                        |                 |  |      |       |       |    |    |  |   |    |  |   |    |  |   |    |  |                                   |  |   |  |

\*Correct Answer (A)

| 3.6(D) decompose composite figures formed by rectangles into non-overlapping rectangles to determine the area of the original figure using the additive property of area |             | Analysis of Assessed Standards             |                                |  |  |
|--|-------------|--|--------------------------------|--|--|
| <b>!</b> 2016 – Q31  |             | <b>Cluster</b>                             | Measurement                    |  |  |
| <b>31</b> Denise planted a flower garden with a rectangular section and a square section, as shown.  |             | <b>Subcluster</b>                          | Area                           |  |  |
|  |             | <b>Content</b>                             | Supporting                     |  |  |
|  |             | <b>Process</b>                             | 3.1(A), 3.1(B), 3.1(E), 3.1(F) |  |  |
|  |             | <b>Stimulus</b>                            |                                |  |  |
| <b>Data Analysis</b>   |             |  |                                |  |  |
|  | <b>Item</b> | <b>State</b>                               | <b>Local</b>                   |  |  |
|  | A*          | 63   |                                |  |  |
|  | B           | 3  |                                |  |  |
|  | C           | 6  |                                |  |  |
|  | D           | 27   |                                |  |  |
| <b>Error Analysis</b>  |             |  |                                |  |  |
| <input type="checkbox"/> Guessing  |             | <input type="checkbox"/> Mixed Up Concepts |                                |  |  |
| <input type="checkbox"/> Careless Error  |             | <input type="checkbox"/> Stopped Too Early |                                |  |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |             |  |                                |  |  |
| *Correct Answer (A)  |             |  |                                |  |  |

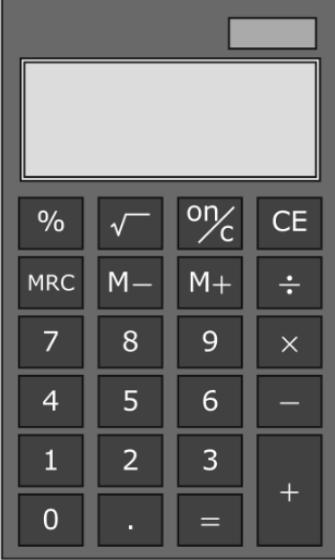
| <p><b>3.6(D)</b> decompose composite figures formed by rectangles into non-overlapping rectangles to determine the area of the original figure using the additive property of area</p>     | <p><b>Analysis of Assessed Standards</b></p>   |       |       |       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|-------|-------|-------|-----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <p><b>!</b> 2015 – Q19 Sample</p> <p><b>19</b> The diagram represents the floor of a storage building. The floor is composed of two rectangles.</p>  | <p><b>Cluster</b> Measurement</p> <p><b>Subcluster</b> Area</p> <p><b>Content</b> Supporting</p> <p><b>Process</b> 3.1(A), 3.1(B), 3.1(E), 3.1(F)</p> <p><b>Stimulus</b></p>   |       |       |       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  <p> = 1 square yard</p> | <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th data-bbox="1106 439 1204 470">Item</th> <th data-bbox="1204 439 1310 470">State</th> <th data-bbox="1310 439 1481 470">Local</th> </tr> </thead> <tbody> <tr> <td data-bbox="1106 481 1204 513">42*</td> <td data-bbox="1204 481 1310 513">NA</td> <td data-bbox="1310 481 1481 513"></td> </tr> <tr> <td data-bbox="1106 523 1204 555"></td> <td data-bbox="1204 523 1310 555"></td> <td data-bbox="1310 523 1481 555"></td> </tr> <tr> <td data-bbox="1106 566 1204 597"></td> <td data-bbox="1204 566 1310 597"></td> <td data-bbox="1310 566 1481 597"></td> </tr> <tr> <td data-bbox="1106 608 1204 639"></td> <td data-bbox="1204 608 1310 639"></td> <td data-bbox="1310 608 1481 639"></td> </tr> <tr> <td data-bbox="1106 650 1204 682"></td> <td data-bbox="1204 650 1310 682"></td> <td data-bbox="1310 650 1481 682"></td> </tr> </tbody> </table> | Item  | State | Local | 42* | NA |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Item   | State  | Local |       |       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42*  | NA   |       |       |       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |       |       |       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |       |       |       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |       |       |       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |       |       |       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <p>What is the area of the floor in square yards?</p> <p>Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.</p>                   | <p><b>Error Analysis</b></p> <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts</p> <p><input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p>  |       |       |       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |

\*Correct Answer (42)

| <p><b>3.7(B)</b> determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems</p> <p>2021 – Q9</p> <p>9 The side lengths of a rectangular mirror are shown in inches.</p>  <p>What is the perimeter of the mirror in inches?</p> <p>A 72 in.<br/>B 46 in.<br/>C 74 in.<br/>D 92 in.</p> <p>*Correct Answer (D)</p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1"><tr><td><b>Cluster</b></td><td>Measurement</td></tr><tr><td><b>Subcluster</b></td><td>Perimeter</td></tr><tr><td><b>Content</b></td><td>Readiness</td></tr><tr><td><b>Process</b></td><td></td></tr><tr><td><b>Stimulus</b></td><td></td></tr></table> <p><b>Data Analysis</b></p> <table border="1"><thead><tr><th>Item</th><th>State</th><th>Local</th></tr></thead><tbody><tr><td>A</td><td>6</td><td></td></tr><tr><td>B</td><td>24</td><td></td></tr><tr><td>C</td><td>5</td><td></td></tr><tr><td>D*</td><td>64</td><td></td></tr></tbody></table> <p><b>Error Analysis</b></p> <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/><input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Measurement | <b>Subcluster</b> | Perimeter | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | A | 6 |  | B | 24 |  | C | 5 |  | D* | 64 |  |
|---|--|----------------|-------------|-------------------|-----------|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|---|---|--|---|----|--|---|---|--|----|----|--|
| <b>Cluster</b>  | Measurement  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |   |  |   |    |  |   |   |  |    |    |  |
| <b>Subcluster</b>   | Perimeter  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |   |  |   |    |  |   |   |  |    |    |  |
| <b>Content</b>  | Readiness  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |   |  |   |    |  |   |   |  |    |    |  |
| <b>Process</b>  |  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |   |  |   |    |  |   |   |  |    |    |  |
| <b>Stimulus</b>   |  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |   |  |   |    |  |   |   |  |    |    |  |
| Item  | State  | Local          |             |                   |           |                |           |                |  |                 |  |      |       |       |   |   |  |   |    |  |   |   |  |    |    |  |
| A   | 6  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |   |  |   |    |  |   |   |  |    |    |  |
| B   | 24   |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |   |  |   |    |  |   |   |  |    |    |  |
| C   | 5  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |   |  |   |    |  |   |   |  |    |    |  |
| D*  | 64   |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |   |  |   |    |  |   |   |  |    |    |  |

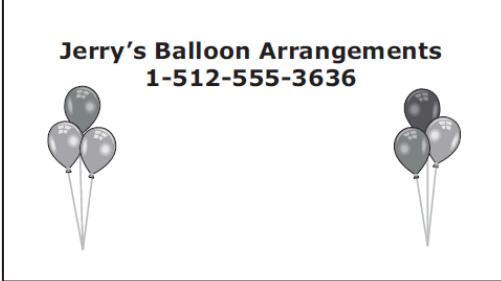
|  |  |  |
|--|--|--|
| <b>3.7(B)</b> determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems | <b>Analysis of Assessed Standards</b>                              |  |
| 2021 – Q24   | <b>Cluster</b>   | Measurement                                |
| <b>24</b> The perimeter of the rectangular floor of Mr. Bryan's cabin is 46 feet. The width of the floor is 10 feet, as shown.     | <b>Subcluster</b>  | Perimeter                                  |
|   | <b>Content</b>   | Readiness                                  |
|  | <b>Process</b>   |  |
|  | <b>Stimulus</b>  |  |
|  | <b>Data Analysis</b>   |  |
|  | <b>Item</b>  | <b>State</b>                               |
|  | 13   | 16*  |
|  |  | 83   |
|  |  |  |
|  |  |  |
|  | <b>Error Analysis</b>  |  |
|  | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts |
|  | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early |
|  | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |
| *Correct Answer (13)   |  |  |

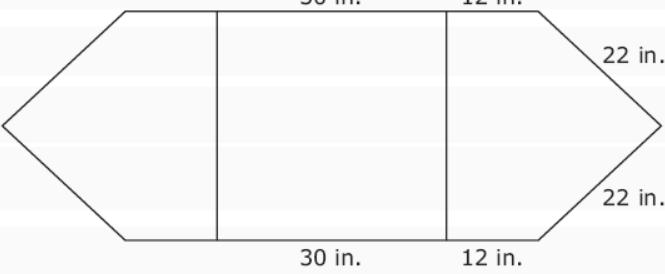
|  |  |  |
|--|--|--|
| <b>3.7(B)</b> determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems | <b>Analysis of Assessed Standards</b>                              |  |
| 2019 – Q14   | <b>Cluster</b>   | Measurement                                |
| Gina's journal has a square cover with the side length shown.  | <b>Subcluster</b>  | Perimeter                                  |
|   | <b>Content</b>   | Readiness                                  |
|  | <b>Process</b>   |  |
|  | <b>Stimulus</b>  |  |
|  | <b>Data Analysis</b>   |  |
|  | <b>Item</b>  | <b>State</b>                               |
|  | 96   | 60*  |
|  |  | 39   |
|  |  |  |
|  |  |  |
|  | <b>Error Analysis</b>  |  |
|  | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts |
|  | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early |
|  | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |
| *Correct Answer (96)   |  |  |

| <p><b>3.7(B)</b> determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems</p> <p>2019 – Q25</p> <p>A model of Mr. Estrada's rectangular calculator is shown. Use the ruler provided to measure the length and width of the calculator to the nearest centimeter.</p>  <p>Which measurement is closest to the perimeter of the calculator in centimeters?</p> <p><b>A</b> 10 cm<br/> <b>B</b> 32 cm<br/> <b>C</b> 16 cm<br/> <b>D</b> 36 cm</p> <p>*Correct Answer (B)</p> | <table border="1"> <thead> <tr> <th colspan="2">Analysis of Assessed Standards</th> </tr> </thead> <tbody> <tr> <td>Cluster</td><td>Measurement</td></tr> <tr> <td>Subcluster</td><td>Perimeter</td></tr> <tr> <td>Content</td><td>Readiness</td></tr> <tr> <td>Process</td><td></td></tr> <tr> <td>Stimulus</td><td></td></tr> <tr> <th colspan="2">Data Analysis</th></tr> <tr> <th>Item</th><th>State</th><th>Local</th></tr> <tr> <td>A</td><td>19</td><td></td></tr> <tr> <td>B*</td><td>60</td><td></td></tr> <tr> <td>C</td><td>9</td><td></td></tr> <tr> <td>D</td><td>11</td><td></td></tr> <tr> <th colspan="3">Error Analysis</th></tr> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> <tr> <th colspan="3">Learning from Mistakes<br/>Instructional Implications</th></tr> </tbody> </table> | Analysis of Assessed Standards |  | Cluster | Measurement | Subcluster | Perimeter | Content | Readiness | Process |  | Stimulus |  | Data Analysis |  | Item | State | Local | A | 19 |  | B* | 60 |  | C | 9 |  | D | 11 |  | Error Analysis |  |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early | Learning from Mistakes<br>Instructional Implications |  |  |
|--|---|--------------------------------|--|---------|-------------|------------|-----------|---------|-----------|---------|--|----------|--|---------------|--|------|-------|-------|---|----|--|----|----|--|---|---|--|---|----|--|----------------|--|--|-----------------------------------|--|---|--|--|--|--|
| Analysis of Assessed Standards   |   |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| Cluster  | Measurement   |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| Subcluster   | Perimeter   |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| Content  | Readiness   |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| Process  |   |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| Stimulus   |   |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| Data Analysis  |   |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| Item   | State   | Local                          |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| A  | 19  |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| B*   | 60  |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| C  | 9   |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| D  | 11  |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| Error Analysis   |   |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts  |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early  |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |
| Learning from Mistakes<br>Instructional Implications   |   |                                |  |         |             |            |           |         |           |         |  |          |  |               |  |      |       |       |   |    |  |    |    |  |   |   |  |   |    |  |                |  |  |                                   |  |   |  |  |  |  |

| <b>3.7(B)</b> determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems  | <b>Analysis of Assessed Standards</b>   |                      |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
|---|---|----------------------|-------------------|--------|------------|----|----------|---------|----|-----------|------------|----|--|------|-------|-------|----|----|--|---|---|--|---|---|--|---|----|--|
| 2018 – Q3   | <b>Cluster</b> Measurement<br><b>Subcluster</b> Perimeter<br><b>Content</b> Readiness<br><b>Process</b><br><b>Stimulus</b>  |                      |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
| <b>3</b> Gretchen made this table to show the side lengths and perimeters of three figures.   |   |                      |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
| <b>Gretchen's Figures</b> <table border="1" data-bbox="399 369 1019 623"> <thead> <tr> <th>Figure</th> <th>Side Lengths (yards)</th> <th>Perimeter (yards)</th> </tr> </thead> <tbody> <tr> <td>Square</td> <td>6, 6, 6, 6</td> <td>24</td> </tr> <tr> <td>Triangle</td> <td>4, 7, 8</td> <td>19</td> </tr> <tr> <td>Rectangle</td> <td>4, 8, 4, 8</td> <td>32</td> </tr> </tbody> </table> | Figure  | Side Lengths (yards) | Perimeter (yards) | Square | 6, 6, 6, 6 | 24 | Triangle | 4, 7, 8 | 19 | Rectangle | 4, 8, 4, 8 | 32 | <b>Data Analysis</b> <table border="1" data-bbox="1166 422 1493 633"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>A*</td> <td>75</td> <td></td> </tr> <tr> <td>B</td> <td>5</td> <td></td> </tr> <tr> <td>C</td> <td>9</td> <td></td> </tr> <tr> <td>D</td> <td>10</td> <td></td> </tr> </tbody> </table> | Item | State | Local | A* | 75 |  | B | 5 |  | C | 9 |  | D | 10 |  |
| Figure  | Side Lengths (yards)  | Perimeter (yards)    |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
| Square  | 6, 6, 6, 6  | 24                   |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
| Triangle  | 4, 7, 8   | 19                   |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
| Rectangle   | 4, 8, 4, 8  | 32                   |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
| Item  | State   | Local                |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
| A*  | 75  |                      |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
| B   | 5   |                      |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
| C   | 9   |                      |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
| D   | 10  |                      |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |
| What mistake, if any, did Gretchen make?<br><br><b>A</b> The perimeter of the rectangle should be 24 yards.<br><b>B</b> The perimeter of the square should be 36 yards.<br><b>C</b> The perimeter of the triangle should be 20 yards.<br><b>D</b> Gretchen did not make any mistakes in the table.  | <b>Error Analysis</b><br><input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early<br><br><b>Learning from Mistakes</b><br><b>Instructional Implications</b> |                      |                   |        |            |    |          |         |    |           |            |    |  |      |       |       |    |    |  |   |   |  |   |   |  |   |    |  |

\*Correct Answer (A)

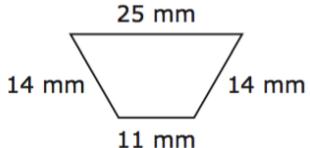
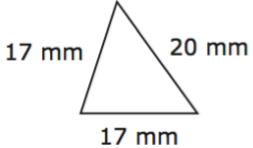
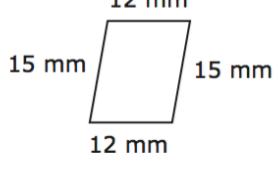
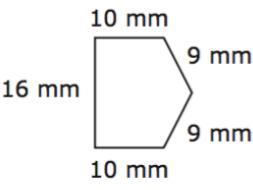
| <p><b>3.7(B)</b> determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems</p> <p>2018 – Q13</p> <p><b>13</b> A rectangular business card is shown. Use the ruler provided to measure the length and width of the business card to the nearest centimeter.</p>  <p>Which measurement is closest to the perimeter of the business card in centimeters?</p> <p><b>A</b> 14 cm<br/> <b>B</b> 28 cm<br/> <b>C</b> 45 cm<br/> <b>D</b> 32 cm</p> <p><b>*Correct Answer (B)</b></p> | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Measurement</td></tr> <tr> <td><b>Subcluster</b></td><td>Perimeter</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td></td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table> <p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>A</td><td>17</td><td></td></tr> <tr> <td>B*</td><td>60</td><td></td></tr> <tr> <td>C</td><td>13</td><td></td></tr> <tr> <td>D</td><td>9</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/> <b>Instructional Implications</b></p> | <b>Cluster</b> | Measurement | <b>Subcluster</b> | Perimeter | <b>Content</b> | Readiness | <b>Process</b> |  | <b>Stimulus</b> |  | Item | State | Local | A | 17 |  | B* | 60 |  | C | 13 |  | D | 9 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|---|--|----------------|-------------|-------------------|-----------|----------------|-----------|----------------|--|-----------------|--|------|-------|-------|---|----|--|----|----|--|---|----|--|---|---|--|-----------------------------------|--|---|--|
| <b>Cluster</b>  | Measurement  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Subcluster</b>   | Perimeter  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Content</b>  | Readiness  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Process</b>  |  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <b>Stimulus</b>   |  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| Item  | State  | Local          |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| A   | 17   |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| B*  | 60   |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| C   | 13   |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| D   | 9  |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts   |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early   |                |             |                   |           |                |           |                |  |                 |  |      |       |       |   |    |  |    |    |  |   |    |  |   |   |  |                                   |  |   |  |

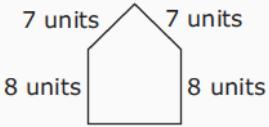
|  |  |  |              |
|--|--|--|--------------|
| <b>3.7(B)</b> determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems | <b>Analysis of Assessed Standards</b>                              |  |              |
| ! 2017 – Q14   | <b>Cluster</b>   | Measurement                                |              |
| <b>14</b> Holly made a poster using two congruent pentagons and a square.  | <b>Subcluster</b>  | Perimeter                                  |              |
|   | <b>Content</b>   | Readiness                                  |              |
|  | <b>Process</b>   |  |              |
|  | <b>Stimulus</b>  |  |              |
|  | <b>Data Analysis</b>   |  |              |
|  | <b>Item</b>  | <b>State</b>                               | <b>Local</b> |
|  | 196  | 40*  |              |
|  |  | 60   |              |
|  |  |  |              |
|  |  |  |              |
|  | <b>Error Analysis</b>  |  |              |
|  | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts |              |
|  | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early |              |
| *Correct Answer (196)  | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |              |
|  |  |  |              |

|  |  |  |              |
|--|--|--|--------------|
| <b>3.7(B)</b> determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems | <b>Analysis of Assessed Standards</b>                              |  |              |
| 2017 – Q30   | <b>Cluster</b>   | Measurement                                |              |
| <b>30</b> A triangle has a perimeter of 18 units. Each side of this triangle is the same length.                                   | <b>Subcluster</b>  | Perimeter                                  |              |
| What is the length of one side of the triangle in units?   | <b>Content</b>   | Readiness                                  |              |
| <b>F</b> 3 units   | <b>Process</b>   |  |              |
| <b>G</b> 6 units   | <b>Stimulus</b>  |  |              |
| <b>H</b> 19 units  |  |  |              |
| <b>J</b> 54 units  |  |  |              |
|  | <b>Data Analysis</b>   |  |              |
|  | <b>Item</b>  | <b>State</b>                               | <b>Local</b> |
|  | F  | 12   |              |
|  | G*   | 64   |              |
|  | H  | 9  |              |
|  | J  | 14   |              |
|  | <b>Error Analysis</b>  |  |              |
|  | <input type="checkbox"/> Guessing                                  | <input type="checkbox"/> Mixed Up Concepts |              |
|  | <input type="checkbox"/> Careless Error                            | <input type="checkbox"/> Stopped Too Early |              |
| *Correct Answer (G)  | <b>Learning from Mistakes</b><br><b>Instructional Implications</b> |  |              |
|  |  |  |              |

|   |   |   |
|---|---|---|
| <p><b>3.7(B)</b> determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems</p>   | <b>Analysis of Assessed Standards</b>   |   |
| <p>! 2016 – Q26</p> <p><b>26</b> A triangular sign has a perimeter of 44 centimeters. Two of the sides are each 14 centimeters long. What is the length of the third side in centimeters?</p> <p><b>F</b> 28 cm<br/> <b>G</b> 16 cm<br/> <b>H</b> 30 cm<br/> <b>J</b> 14 cm</p> | <b>Cluster</b><br><b>Subcluster</b><br><b>Content</b><br><b>Process</b><br><b>Stimulus</b>  | Measurement<br>Perimeter<br>Readiness<br>3.1(A), 3.1(B), 3.1(F)<br> |
|   | <b>Data Analysis</b>  |   |
|   | <b>Item</b><br>F<br>G*<br>H<br>J  | <b>State</b><br>11<br>54<br>24<br>11                                |
|   | <b>Error Analysis</b><br><input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |   |
|   | <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |   |

\*Correct Answer (G)

| <p><b>3.7(B)</b> determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems</p> <p>2016 – Q44</p> <p><b>44</b> Felix drew the figures shown below.</p>   | <p><b>Analysis of Assessed Standards</b></p> <table border="1"> <tr> <td><b>Cluster</b></td><td>Measurement</td></tr> <tr> <td><b>Subcluster</b></td><td>Perimeter</td></tr> <tr> <td><b>Content</b></td><td>Readiness</td></tr> <tr> <td><b>Process</b></td><td>3.1(A), 3.1(B), 3.1(E), 3.1(F)</td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table><br><p><b>Data Analysis</b></p> <table border="1"> <thead> <tr> <th>Item</th><th>State</th><th>Local</th></tr> </thead> <tbody> <tr> <td>F*</td><td>72</td><td></td></tr> <tr> <td>G</td><td>13</td><td></td></tr> <tr> <td>H</td><td>9</td><td></td></tr> <tr> <td>J</td><td>6</td><td></td></tr> </tbody> </table> <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td><td><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <b>Cluster</b> | Measurement | <b>Subcluster</b> | Perimeter | <b>Content</b> | Readiness | <b>Process</b> | 3.1(A), 3.1(B), 3.1(E), 3.1(F) | <b>Stimulus</b> |  | Item | State | Local | F* | 72 |  | G | 13 |  | H | 9 |  | J | 6 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|--|---|----------------|-------------|-------------------|-----------|----------------|-----------|----------------|--------------------------------|-----------------|--|------|-------|-------|----|----|--|---|----|--|---|---|--|---|---|--|-----------------------------------|--|---|--|
| <b>Cluster</b>   | Measurement   |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Subcluster</b>  | Perimeter   |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Content</b>   | Readiness   |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Process</b>   | 3.1(A), 3.1(B), 3.1(E), 3.1(F)  |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <b>Stimulus</b>  |   |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| Item   | State   | Local          |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| F*   | 72  |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| G  | 13  |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| H  | 9   |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| J  | 6   |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts  |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early  |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |
| <p>Figure 1</p>  <p>Figure 2</p>  <p>Figure 3</p>  <p>Figure 4</p>  <p>Which list shows all the figures that have a perimeter of 54 millimeters?</p> <p><b>F</b> Figures 2, 3, and 4<br/> <b>G</b> Figures 2 and 4<br/> <b>H</b> Figures 1 and 3<br/> <b>J</b> Figures 1, 2, and 4</p> | <p><b>*Correct Answer (F)</b></p>   |                |             |                   |           |                |           |                |                                |                 |  |      |       |       |    |    |  |   |    |  |   |   |  |   |   |  |                                   |  |   |  |

|  |  |              |  |  |
|--|--|--------------|--|--|
| <p><b>3.7(B)</b> determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems</p> <p>2015 – Q21 Sample</p> <p><b>21</b> The lengths of four sides of a polygon are shown in the diagram.</p>  <p>The perimeter of the polygon is 40 units. What is the missing length in units?</p> <p><b>A</b> 8 units<br/> <b>B</b> 15 units<br/> <b>C</b> 10 units<br/> <b>D</b> 30 units</p> <p>*Correct Answer (C)</p> | <b>Analysis of Assessed Standards</b>      |              |  |  |
| <b>Cluster</b>   | Measurement                                |              |  |  |
| <b>Subcluster</b>  | Perimeter                                  |              |  |  |
| <b>Content</b>   | Readiness                                  |              |  |  |
| <b>Process</b>   | 3.1(B), 3.1(E), 3.1(F)                     |              |  |  |
| <b>Stimulus</b>  |  |              |  |  |
|  |  |              |  |  |
| <b>Data Analysis</b>   |  |              |  |  |
| <b>Item</b>  | <b>State</b>                               | <b>Local</b> |  |  |
| A  | NA   |              |  |  |
| B  | NA   |              |  |  |
| C*   | NA   |              |  |  |
| D  | NA   |              |  |  |
| <b>Error Analysis</b>  |  |              |  |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts |              |  |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early |              |  |  |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |  |              |  |  |
|  |  |              |  |  |

|  |  | Analysis of Assessed Standards |             |  |  |
|--|--|--------------------------------|-------------|--|--|
| 2021 – Q28   |  | Cluster                        | Measurement |  |  |
| <b>28</b> On Saturday afternoon Marcus went to a swimming pool. The clock shows the time he arrived at the pool. |  | Subcluster                     | Time        |  |  |
|  |  | Content                        | Supporting  |  |  |
|  |  | Process                        |             |  |  |
|  |  | Stimulus                       |             |  |  |
| Data Analysis  |  |                                |             |  |  |
| Item   | State                                      | Local                          |             |  |  |
| F*   | 46   |                                |             |  |  |
| G  | 16   |                                |             |  |  |
| H  | 20   |                                |             |  |  |
| J  | 17   |                                |             |  |  |
| Error Analysis   |  |                                |             |  |  |
| <input type="checkbox"/> Guessing  | <input type="checkbox"/> Mixed Up Concepts |                                |             |  |  |
| <input type="checkbox"/> Careless Error  | <input type="checkbox"/> Stopped Too Early |                                |             |  |  |
| Learning from Mistakes<br>Instructional Implications   |  |                                |             |  |  |
| *Correct Answer (F)  |  |                                |             |  |  |

|   |  |              |
|---|--|--------------|
| <p><b>3.7(C)</b> determine the solutions to problems involving addition and subtraction of time intervals in minutes using pictorial models or tools such as a 15-minute event plus a 30-minute event equals 45 minutes</p> <p>2019 – Q9</p> <p>Felix swam, rode his bike, and ran in a race.</p> <ul style="list-style-type: none"> <li>• He spent 19 minutes swimming.</li> <li>• He spent 21 minutes riding his bike.</li> <li>• He spent 30 minutes running.</li> </ul>  <p>What was the total amount of time Felix spent swimming, riding his bike, and running in this race?</p> <p><b>A</b> 1 hour 20 minutes<br/> <b>B</b> 40 minutes<br/> <b>C</b> 1 hour 10 minutes<br/> <b>D</b> 1 hour</p> | <b>Analysis of Assessed Standards</b>      |              |
| <b>Cluster</b>  | Measurement                                |              |
| <b>Subcluster</b>   | Time                                       |              |
| <b>Content</b>  | Supporting                                 |              |
| <b>Process</b>  |  |              |
| <b>Stimulus</b>   |  |              |
| <b>Data Analysis</b>  |  |              |
| <b>Item</b>   | <b>State</b>                               | <b>Local</b> |
| A   | 12   |              |
| B   | 6  |              |
| C*  | 72   |              |
| D   | 9  |              |
| <b>Error Analysis</b>   |  |              |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts |              |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early |              |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |  |              |
|   |  |              |

\*Correct Answer (C)

**3.7(C)** determine the solutions to problems involving addition and subtraction of time intervals in minutes using pictorial models or tools such as a 15-minute event plus a 30-minute event equals 45 minutes

#### Analysis of Assessed Standards

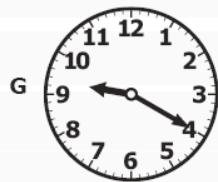
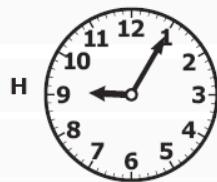
! 2017 – Q18

- 18** Debra and Shelly started running a race at 9:00 A.M. Debra finished in 45 minutes.

Start Time



Shelly finished the race 20 minutes after Debra did. Which clock shows the time Shelly finished the race?



Cluster Measurement

Subcluster Time

Content Supporting

Process

Stimulus

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
|------|-------|-------|

F\* 51

G 26

H 10

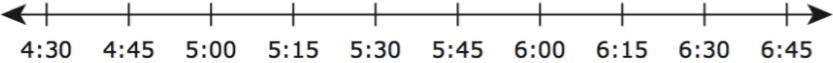
J 12

#### Error Analysis

Guessing  Mixed Up Concepts  
 Careless Error  Stopped Too Early

#### Learning from Mistakes Instructional Implications

\*Correct Answer (F)

| <p><b>3.7(C)</b> determine the solutions to problems involving addition and subtraction of time intervals in minutes using pictorial models or tools such as a 15-minute event plus a 30-minute event equals 45 minutes</p> | <p><b>Analysis of Assessed Standards</b></p>  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
|---|---|-------|-------|-------|---|----|--|---|----|--|---|----|--|----|----|--|
| <p>! 2016 – Q3</p>  | <p><b>Cluster</b> Measurement</p>   |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p>3 Thomas put a ham in the oven at 4:45 P.M. After 15 minutes he put a cake in the oven. The ham and the cake were in the oven together for 60 minutes. Then Thomas took them both out of the oven.</p>                   | <p><b>Subcluster</b> Time</p>   |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
|   | <p><b>Content</b> Supporting</p>  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
|   | <p><b>Process</b> 3.1(A), 3.1(B), 3.1(E), 3.1(F)</p>  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
|   | <p><b>Stimulus</b></p>  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
|   | <p><b>Data Analysis</b></p>   |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p>At what time did Thomas take both the ham and cake out of the oven?</p> <p>A 5:45 P.M.<br/>B 6:30 P.M.<br/>C 5:15 P.M.<br/>D 6:00 P.M.</p>   | <table border="1" data-bbox="1122 443 1498 644"> <thead> <tr> <th>Item</th> <th>State</th> <th>Local</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>14</td> <td></td> </tr> <tr> <td>B</td> <td>14</td> <td></td> </tr> <tr> <td>C</td> <td>11</td> <td></td> </tr> <tr> <td>D*</td> <td>61</td> <td></td> </tr> </tbody> </table> | Item  | State | Local | A | 14 |  | B | 14 |  | C | 11 |  | D* | 61 |  |
| Item  | State   | Local |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| A   | 14  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| B   | 14  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| C   | 11  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| D*  | 61  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
|   | <p><b>Error Analysis</b></p>  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
|   | <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts<br/> <input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p>   |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |
| <p>*Correct Answer (D)</p>  | <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p>  |       |       |       |   |    |  |   |    |  |   |    |  |    |    |  |

| 3.7(D) determine when it is appropriate to use measurements of liquid volume (capacity) or weight  |  | Analysis of Assessed Standards                       |  |
|--|--|--|--|
| 2021 – Q15   |  | Cluster  | Measurement                                |
| <b>15</b> After a soccer game Isaac drank a bottle of water. Which unit of measurement can be used to measure the volume of the water in the bottle? |  | Subcluster   | Liquid Capacity/Weight                     |
| A Fluid ounces   |  | Content  | Supporting                                 |
| B Grams  |  | Process  |  |
| C Inches   |  | Stimulus   |  |
| D Square centimeters   |  | Data Analysis  |  |
| *Correct Answer (A)  |  | Item   | State                                      |
|  |  | A*   | 67   |
|  |  | B  | 11   |
|  |  | C  | 16   |
|  |  | D  | 6  |
|  |  | Error Analysis                                       |  |
|  |  | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |
|  |  | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |
|  |  | Learning from Mistakes<br>Instructional Implications |  |

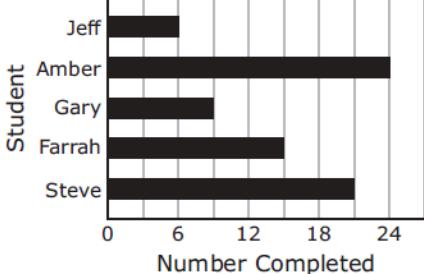
| 3.7(D) determine when it is appropriate to use measurements of liquid volume (capacity) or weight   |  | Analysis of Assessed Standards                       |  |
|---|--|--|--|
| ! 2018 – Q17  |  | Cluster  | Measurement                                |
| <b>17</b> A container of liquid laundry detergent at a grocery store is marked with the volume of detergent inside. Which unit of measurement could be marked on the container? |  | Subcluster   | Liquid Capacity/Weight                     |
| A Kilograms   |  | Content  | Supporting                                 |
| B Meters  |  | Process  |  |
| C Pounds  |  | Stimulus   |  |
| D Liters  |  | Data Analysis  |  |
| *Correct Answer (D)   |  | Item   | State                                      |
|   |  | A  | 14   |
|   |  | B  | 12   |
|   |  | C  | 24   |
|   |  | D*   | 50   |
|   |  | Error Analysis                                       |  |
|   |  | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |
|   |  | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |
|   |  | Learning from Mistakes<br>Instructional Implications |  |

|   |   |  |  |
|---|---|--|--|
| 3.7(D) determine when it is appropriate to use measurements of liquid volume (capacity) or weight |   | Analysis of Assessed Standards                       |  |
| <b>!</b>  | 2016 – Q9   | Cluster  | Measurement                                |
| <b>9</b>  | Patrick's class collected boxes of food for charity. Which unit of measurement should be used to measure the weight of the boxes of food? | Subcluster   | Liquid Capacity/Weight                     |
| <b>A</b>  | Quarts  | Content  | Supporting                                 |
| <b>B</b>  | Pounds  | Process  | 3.1(A), 3.1(B), 3.1(C), 3.1(G)             |
| <b>C</b>  | Gallons   | Stimulus   |  |
| <b>D</b>  | Fluid ounces  | Data Analysis  |  |
|   |   | Item   | State                                      |
|   |   | A  | 6  |
|   |   | B*   | 82   |
|   |   | C  | 8  |
|   |   | D  | 4  |
|   |   | Error Analysis                                       |  |
|   |   | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |
|   |   | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |
|   |   | Learning from Mistakes<br>Instructional Implications |  |
| <b>*</b> Correct Answer (B)   |   |  |  |

|   |  |  |  |
|---|--|--|--|
| 3.7(D) determine when it is appropriate to use measurements of liquid volume (capacity) or weight |  | Analysis of Assessed Standards                       |  |
| 2015 – Q22 Sample   |  | Cluster  | Measurement                                |
| <b>22</b>   | Olga uses the same amount of water to fill her water bottle every day. Which unit of measurement should Olga use to measure the amount of water in her water bottle? | Subcluster   | Liquid Capacity/Weight                     |
| <b>A</b>  | Pound  | Content  | Supporting                                 |
| <b>B</b>  | Fluid ounce  | Process  | 3.1(A), 3.1(B), 3.1(C), 3.1(F)             |
| <b>C</b>  | Yard   | Stimulus   |  |
| <b>D</b>  | Ounce  | Data Analysis  |  |
|   |  | Item   | State                                      |
|   |  | A  | NA   |
|   |  | B*   | NA   |
|   |  | C  | NA   |
|   |  | D  | NA   |
|   |  | Error Analysis                                       |  |
|   |  | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |
|   |  | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |
|   |  | Learning from Mistakes<br>Instructional Implications |  |
| <b>*</b> Correct Answer (B)   |  |  |  |

# Data Analysis

**3.8 Data analysis.** The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data.

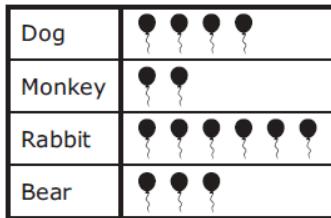
| 3.8(A) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals |  | Analysis of Assessed Standards                       |  |
|--|--|--|--|
| <b>!</b> 2021 – Q6   | 6 The bar graph shows the number of math problems each of five students completed during math class. | <b>Cluster</b>                                       | Data Analysis                              |
|  |                     | <b>Subcluster</b>                                    | Representation of Data                     |
|  |  | <b>Content</b>                                       | Readiness                                  |
|  |  | <b>Process</b>                                       |  |
|  |  | <b>Stimulus</b>                                      |  |
|  |  | Data Analysis  |  |
|  |  | Item   | State                                      |
|  | F  | 41   |  |
|  | G  | 4  |  |
|  | H*   | 51   |  |
|  | J  | 4  |  |
|  |  | Error Analysis                                       |  |
|  |  | <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |
|  |  | <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |
|  |  | Learning from Mistakes<br>Instructional Implications |  |
| *Correct Answer (H)  |  |  |  |

**3.8(A)** summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals

! 2021 – Q23

- 23 The pictograph shows the number of each type of balloon animal a clown made on Tuesday.

Balloon Animals



Each  means 2 animals.

Which table correctly represents the data?

A Balloon Animals

| Animal | Number of Balloons |
|--------|--------------------|
| Dog    | 4                  |
| Monkey | 2                  |
| Rabbit | 5                  |
| Bear   | 3                  |

C Balloon Animals

| Animal | Number of Balloons |
|--------|--------------------|
| Dog    | 4                  |
| Monkey | 2                  |
| Rabbit | 6                  |
| Bear   | 3                  |

B Balloon Animals

| Animal | Number of Balloons |
|--------|--------------------|
| Dog    | 8                  |
| Monkey | 4                  |
| Rabbit | 12                 |
| Bear   | 6                  |

D Balloon Animals

| Animal | Number of Balloons |
|--------|--------------------|
| Dog    | 8                  |
| Monkey | 4                  |
| Rabbit | 10                 |
| Bear   | 6                  |

\*Correct Answer (B)

**Analysis of Assessed Standards**

**Cluster** Data Analysis

**Subcluster** Representation of Data

**Content** Readiness

**Process**

**Stimulus**

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
|------|-------|-------|

|   |   |  |
|---|---|--|
| A | 4 |  |
|---|---|--|

|    |    |  |
|----|----|--|
| B* | 70 |  |
|----|----|--|

|   |    |  |
|---|----|--|
| C | 22 |  |
|---|----|--|

|   |   |  |
|---|---|--|
| D | 3 |  |
|---|---|--|

**Error Analysis**

Guessing    Mixed Up Concepts  
 Careless Error    Stopped Too Early

**Learning from Mistakes**  
**Instructional Implications**

**3.8(A)** summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals

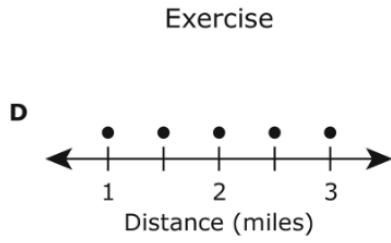
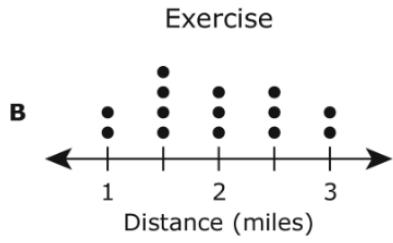
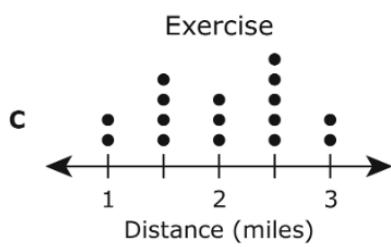
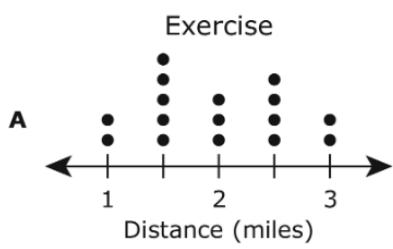
2019 – Q3

Alberto ran for exercise every day for 16 days. The table shows how many days he ran each distance.

Exercise

| Distance (miles) | 1 | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------|---|----------------|---|----------------|---|
| Number of Days   |   |                |   |                |   |

Which dot plot represents these data?



\*Correct Answer (A)

#### Analysis of Assessed Standards

**Cluster** Data Analysis

**Subcluster** Representation of Data

**Content** Readiness

**Process**

**Stimulus**

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
|------|-------|-------|

A\* 92

B 2

C 4

D 2

#### Error Analysis

- Guessing  Mixed Up Concepts
- Careless Error  Stopped Too Early

#### Learning from Mistakes Instructional Implications

**3.8(A)** summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals

! 2019 – Q22

A school keeps boxes of paper of different colors in a room. The table shows how many boxes of each color are in the room.

Boxes of Paper

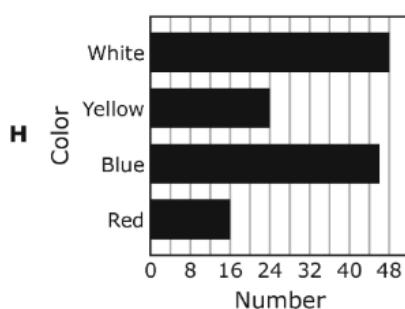
| Color  | Number |
|--------|--------|
| White  | 48     |
| Yellow | 24     |
| Blue   | 42     |
| Red    | 18     |

Which answer choice does NOT represent the information in the table?

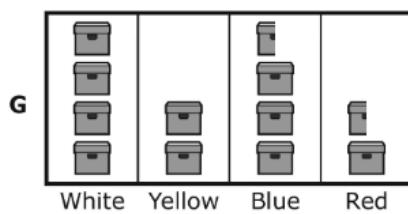
Boxes of Paper

| Color  | Number |
|--------|--------|
| White  | 48     |
| Yellow | 24     |
| Blue   | 42     |
| Red    | 18     |

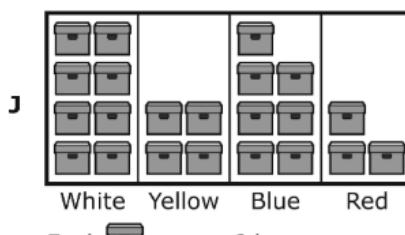
Boxes of Paper



Boxes of Paper



Boxes of Paper



\*Correct Answer (H)

#### Analysis of Assessed Standards

**Cluster** Data Analysis

**Subcluster** Representation of Data

**Content** Readiness

**Process**

**Stimulus**

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
|------|-------|-------|

F 21

G 12

H\* 55

J 12

#### Error Analysis

- Guessing  Mixed Up Concepts
- Careless Error  Stopped Too Early

#### Learning from Mistakes Instructional Implications

| 3.8(A) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals   |   | Analysis of Assessed Standards |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
|--|---|--------------------------------|-----|--|-------|--|--------|--|--|------|-------|-------|---|----|--|---|----|--|----|----|--|---|---|--|
| 2018 – Q11   | Cluster Data Analysis   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| 11 The list shows the number of ribbons of each color that a school ordered for a science fair.  | Subcluster Representation of Data   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| <ul style="list-style-type: none"> <li>• 12 blue</li> <li>• 18 red</li> <li>• 36 green</li> <li>• 60 purple</li> </ul>   | Content Readiness   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Which pictograph best represents the information in the list?  | Process   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Science Fair Ribbons   | Stimulus  |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| <b>A</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Blue</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Red</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Green</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Purple</td> <td style="padding: 5px; text-align: center;"></td> </tr> </table> | Blue  |                                | Red |  | Green |  | Purple |  | <b>Data Analysis</b><br><table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 5px;">Item</th> <th style="text-align: left; padding: 5px;">State</th> <th style="text-align: left; padding: 5px;">Local</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">A</td> <td style="padding: 5px; text-align: center;">12</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">B</td> <td style="padding: 5px; text-align: center;">19</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">C*</td> <td style="padding: 5px; text-align: center;">66</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">D</td> <td style="padding: 5px; text-align: center;">4</td> <td style="padding: 5px;"></td> </tr> </tbody> </table> | Item | State | Local | A | 12 |  | B | 19 |  | C* | 66 |  | D | 4 |  |
| Blue   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Red  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Green  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Purple   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Item   | State   | Local                          |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| A  | 12  |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| B  | 19  |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| C*   | 66  |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| D  | 4   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Science Fair Ribbons   | <b>Error Analysis</b><br><input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts<br><input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| <b>C</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Blue</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Red</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Green</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Purple</td> <td style="padding: 5px; text-align: center;"></td> </tr> </table> | Blue  |                                | Red |  | Green |  | Purple |  | <b>Learning from Mistakes</b><br><b>Instructional Implications</b>   |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Blue   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Red  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Green  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Purple   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Each  means 4 ribbons.   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Science Fair Ribbons   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| <b>D</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Blue</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Red</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Green</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Purple</td> <td style="padding: 5px; text-align: center;"></td> </tr> </table> | Blue  |                                | Red |  | Green |  | Purple |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Blue   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Red  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Green  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Purple   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Each  means 12 ribbons.  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Science Fair Ribbons   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| <b>B</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Blue</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Red</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Green</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Purple</td> <td style="padding: 5px; text-align: center;"></td> </tr> </table> | Blue  |                                | Red |  | Green |  | Purple |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Blue   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Red  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Green  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Purple   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Each  means 6 ribbons.   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Science Fair Ribbons   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| <b>D</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Blue</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Red</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Green</td> <td style="padding: 5px; text-align: center;"></td> </tr> <tr> <td style="padding: 5px;">Purple</td> <td style="padding: 5px; text-align: center;"></td> </tr> </table> | Blue  |                                | Red |  | Green |  | Purple |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Blue   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Red  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Green  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Purple   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Each  means 9 ribbons.   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| Science Fair Ribbons   |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |
| <b>*</b> Correct Answer (C)  |   |                                |     |  |       |  |        |  |  |      |       |       |   |    |  |   |    |  |    |    |  |   |   |  |

|  |   |  |                        |
|--|---|--|------------------------|
| 3.8(A) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals |   | Analysis of Assessed Standards             |                        |
| !  | 2018 – Q29  | Cluster                                    | Data Analysis          |
| 29   | The picture shows the coins that are in a piggy bank.                             | Subcluster                                 | Representation of Data |
|  |  | Content                                    | Readiness              |
|  |   | Process                                    |                        |
|  |   | Stimulus                                   |                        |
| Data Analysis  |   |  |                        |
|  | Item  | State                                      | Local                  |
|  | A   | 7  |                        |
|  | B   | 16   |                        |
|  | C   | 5  |                        |
|  | D*  | 71   |                        |
| Error Analysis   |   |  |                        |
|  | <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts |                        |
|  | <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early |                        |
| Learning from Mistakes<br>Instructional Implications   |   |  |                        |
| *Correct Answer (D)  |   |  |                        |

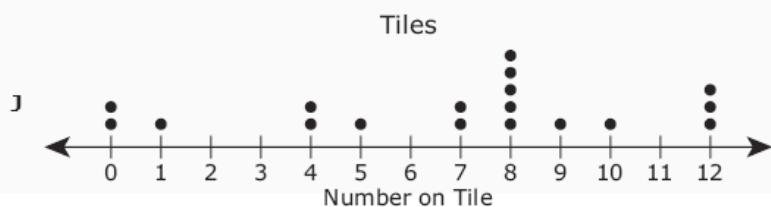
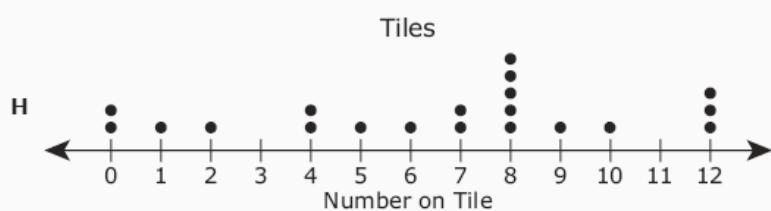
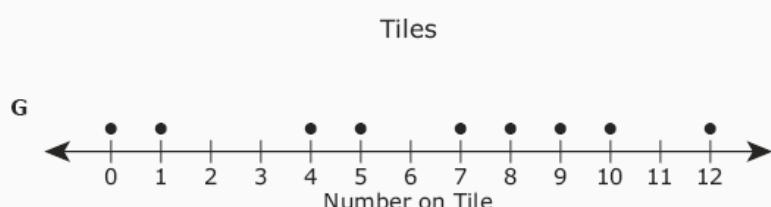
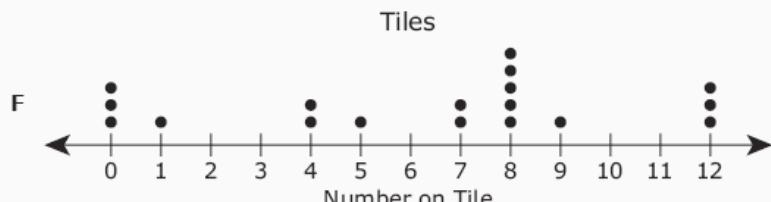
**3.8(A)** summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals

2017 – Q10

- 10** Merlin had a bag of tiles. Each tile was labeled with a number. Merlin pulled one tile out of the bag and recorded the number on that tile. He repeated this 18 times. The numbers on the tiles Merlin pulled are shown in the list.

8, 7, 12, 1, 8, 9, 12, 0, 7, 8, 10, 4, 5, 8, 12, 4, 0, 8

Which dot plot represents the numbers on the tiles Merlin pulled out of the bag?



\*Correct Answer (J)

#### Analysis of Assessed Standards

**Cluster** Data Analysis

**Subcluster** Representation of Data

**Content** Readiness

**Process**

**Stimulus**

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
|------|-------|-------|

F 14

G 8

H 15

J\* 63

#### Error Analysis

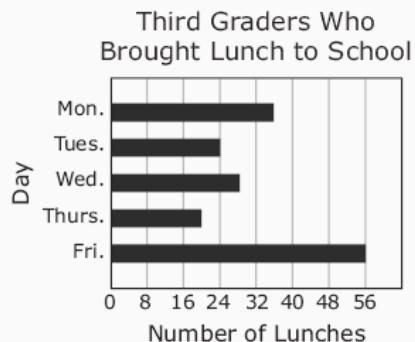
Guessing  Mixed Up Concepts  
 Careless Error  Stopped Too Early

#### Learning from Mistakes Instructional Implications

**3.8(A)** summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals

! 2017 – Q29

- 29 The bar graph shows the number of third graders who brought lunch to school each day last week.



Which table best represents the data in the graph?

Third Graders Who Brought Lunch to School

|   | Day       | Number of Lunches |
|---|-----------|-------------------|
| A | Monday    | 36                |
|   | Tuesday   | 24                |
|   | Wednesday | 28                |
|   | Thursday  | 20                |
|   | Friday    | 56                |

Third Graders Who Brought Lunch to School

|   | Day       | Number of Lunches |
|---|-----------|-------------------|
| C | Monday    | 40                |
|   | Tuesday   | 24                |
|   | Wednesday | 32                |
|   | Thursday  | 24                |
|   | Friday    | 56                |

Third Graders Who Brought Lunch to School

|   | Day       | Number of Lunches |
|---|-----------|-------------------|
| B | Monday    | 32                |
|   | Tuesday   | 24                |
|   | Wednesday | 24                |
|   | Thursday  | 16                |
|   | Friday    | 56                |

Third Graders Who Brought Lunch to School

|   | Day       | Number of Lunches |
|---|-----------|-------------------|
| D | Monday    | 34                |
|   | Tuesday   | 24                |
|   | Wednesday | 26                |
|   | Thursday  | 18                |
|   | Friday    | 56                |

\*Correct Answer (A)

#### Analysis of Assessed Standards

**Cluster** Data Analysis

**Subcluster** Representation of Data

**Content** Readiness

**Process**

**Stimulus**

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
|------|-------|-------|

A\* 67

B 7

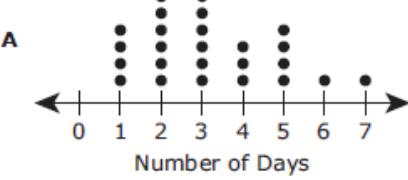
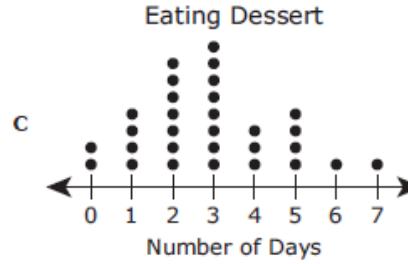
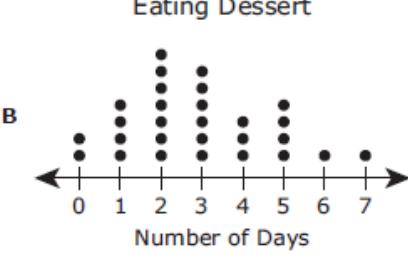
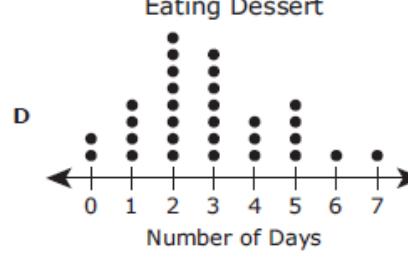
C 5

D 21

#### Error Analysis

Guessing  Mixed Up Concepts  
 Careless Error  Stopped Too Early

#### Learning from Mistakes Instructional Implications

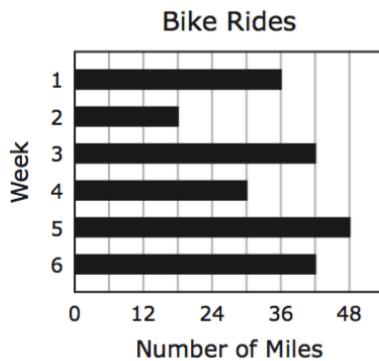
| <p><b>3.8(A)</b> summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals</p> <p>2016 – Q5</p> <p>5 The frequency table shows the results of a survey about how many days per week some families eat dessert.</p> <table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Eating Dessert</th> </tr> <tr> <th>Number of Days</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>  </td> </tr> <tr> <td>1</td> <td>   </td> </tr> <tr> <td>2</td> <td>    </td> </tr> <tr> <td>3</td> <td>     </td> </tr> <tr> <td>4</td> <td>   </td> </tr> <tr> <td>5</td> <td>   </td> </tr> <tr> <td>6</td> <td> </td> </tr> <tr> <td>7</td> <td> </td> </tr> </tbody> </table> <p>Which dot plot represents the data in the table?</p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <p><b>Eating Dessert</b></p>  <p><b>A</b></p> <p>Number of Days</p> </div> <div style="text-align: center;"> <p><b>Eating Dessert</b></p>  <p><b>C</b></p> <p>Number of Days</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <p><b>Eating Dessert</b></p>  <p><b>B</b></p> <p>Number of Days</p> </div> <div style="text-align: center;"> <p><b>Eating Dessert</b></p>  <p><b>D</b></p> <p>Number of Days</p> </div> </div> | Eating Dessert                             |       | Number of Days | Frequency | 0 |  | 1 |  | 2 |  | 3 |  | 4 |  | 5 |  | 6 |  | 7 |  | <p><b>Analysis of Assessed Standards</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Cluster</td><td>Data Analysis</td></tr> <tr> <td>Subcluster</td><td>Representation of Data</td></tr> <tr> <td>Content</td><td>Readiness</td></tr> <tr> <td>Process</td><td>3.1(A), 3.1(B), 3.1(D), 3.1(F)</td></tr> <tr> <td>Stimulus</td><td></td></tr> </table><br><p><b>Data Analysis</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">Item</th><th style="width: 33%;">State</th><th style="width: 33%;">Local</th></tr> <tr> <td>A</td><td>3</td><td></td></tr> <tr> <td>B</td><td>3</td><td></td></tr> <tr> <td>C</td><td>2</td><td></td></tr> <tr> <td>D*</td><td>93</td><td></td></tr> </table><br><p><b>Error Analysis</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Guessing</td><td style="width: 50%;"><input type="checkbox"/> Mixed Up Concepts</td></tr> <tr> <td><input type="checkbox"/> Careless Error</td><td><input type="checkbox"/> Stopped Too Early</td></tr> </table><br><p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | Cluster | Data Analysis | Subcluster | Representation of Data | Content | Readiness | Process | 3.1(A), 3.1(B), 3.1(D), 3.1(F) | Stimulus |  | Item | State | Local | A | 3 |  | B | 3 |  | C | 2 |  | D* | 93 |  | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|---|--|-------|----------------|-----------|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|--|---------|---------------|------------|------------------------|---------|-----------|---------|--------------------------------|----------|--|------|-------|-------|---|---|--|---|---|--|---|---|--|----|----|--|-----------------------------------|--|---|--|
| Eating Dessert  |  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| Number of Days  | Frequency                                  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| 0   |  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| 1   |  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| 2   |  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| 3   |  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| 4   |  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| 5   |  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| 6   |  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| 7   |  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| Cluster   | Data Analysis                              |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| Subcluster  | Representation of Data                     |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| Content   | Readiness                                  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| Process   | 3.1(A), 3.1(B), 3.1(D), 3.1(F)             |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| Stimulus  |  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| Item  | State                                      | Local |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| A   | 3  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| B   | 3  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| C   | 2  |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| D*  | 93   |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early |       |                |           |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |  |         |               |            |                        |         |           |         |                                |          |  |      |       |       |   |   |  |   |   |  |   |   |  |    |    |  |                                   |  |   |  |

\*Correct Answer (D)

**3.8(A)** summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals

! 2016 – Q36

- 36** The graph below shows the number of miles Lincoln rode his bike during six weeks.



Which table represents the information in the graph?

**Bike Rides**

| F | Week | Number of Miles |
|---|------|-----------------|
| 1 | 36   |                 |
| 2 | 14   |                 |
| 3 | 38   |                 |
| 4 | 26   |                 |
| 5 | 48   |                 |
| 6 | 38   |                 |

**Bike Rides**

| H | Week | Number of Miles |
|---|------|-----------------|
| 1 | 36   |                 |
| 2 | 18   |                 |
| 3 | 42   |                 |
| 4 | 30   |                 |
| 5 | 42   |                 |
| 6 | 48   |                 |

**Bike Rides**

| G | Week | Number of Miles |
|---|------|-----------------|
| 1 | 36   |                 |
| 2 | 24   |                 |
| 3 | 48   |                 |
| 4 | 36   |                 |
| 5 | 48   |                 |
| 6 | 48   |                 |

**Bike Rides**

| J | Week | Number of Miles |
|---|------|-----------------|
| 1 | 36   |                 |
| 2 | 18   |                 |
| 3 | 42   |                 |
| 4 | 30   |                 |
| 5 | 48   |                 |
| 6 | 42   |                 |

\*Correct Answer (J)

#### Analysis of Assessed Standards

|            |                                |
|------------|--------------------------------|
| Cluster    | Data Analysis                  |
| Subcluster | Representation of Data         |
| Content    | Readiness                      |
| Process    | 3.1(A), 3.1(B), 3.1(D), 3.1(F) |
| Stimulus   |                                |

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
| F    | 22    |       |
| G    | 4     |       |
| H    | 8     |       |
| J*   | 65    |       |

#### Error Analysis

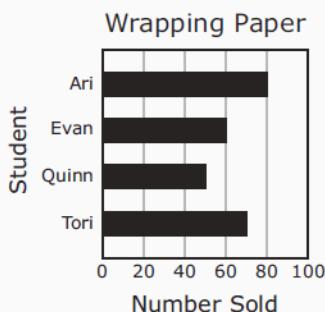
- Guessing       Mixed Up Concepts  
 Careless Error     Stopped Too Early

#### Learning from Mistakes Instructional Implications

**3.8(A)** summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals

2015 – Q23 Sample

**23** The graph shows the number of rolls of wrapping paper sold by four students.



Which table represents the information in the graph?

Wrapping Paper

|   | Student | Number Sold |
|---|---------|-------------|
| A | Ari     | 80          |
|   | Evan    | 60          |
|   | Quinn   | 50          |
|   | Tori    | 70          |

Wrapping Paper

|   | Student | Number Sold |
|---|---------|-------------|
| C | Ari     | 80          |
|   | Evan    | 60          |
|   | Quinn   | 45          |
|   | Tori    | 65          |

Wrapping Paper

|   | Student | Number Sold |
|---|---------|-------------|
| B | Ari     | 80          |
|   | Evan    | 60          |
|   | Quinn   | 40          |
|   | Tori    | 60          |

Wrapping Paper

|   | Student | Number Sold |
|---|---------|-------------|
| D | Ari     | 80          |
|   | Evan    | 60          |
|   | Quinn   | 60          |
|   | Tori    | 80          |

\*Correct Answer (A)

#### Analysis of Assessed Standards

**Cluster** Data Analysis

**Subcluster** Representation of Data

**Content** Readiness

**Process** 3.1(A), 3.1(B), 3.1(D), 3.1(F)

**Stimulus**

#### Data Analysis

| Item | State | Local |
|------|-------|-------|
|------|-------|-------|

A\* NA

B NA

C NA

D NA

#### Error Analysis

Guessing  Mixed Up Concepts

Careless Error  Stopped Too Early

#### Learning from Mistakes Instructional Implications

| 3.8(B) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals |  | Analysis of Assessed Standards |                        |
|---|--|--------------------------------|------------------------|
| <b>!</b> 2021 – Q11   |  | <b>Cluster</b>                 | Data Analysis          |
| <b>11</b> The bar graph shows the number of each different type of drink that was ordered in a restaurant one day.  |  | <b>Subcluster</b>              | Interpretation of Data |
|   |  | <b>Content</b>                 | Supporting             |
|   |  | <b>Process</b>                 |                        |
|   |  | <b>Stimulus</b>                |                        |
| <b>Data Analysis</b>  |  |                                |                        |
|   | <b>Item</b>                                | <b>State</b>                   | <b>Local</b>           |
| A   |  | 10                             |                        |
| B   |  | 5                              |                        |
| C*  |  | 50                             |                        |
| D   |  | 35                             |                        |
| <b>Error Analysis</b>   |  |                                |                        |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts |                                |                        |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early |                                |                        |
| <b>Learning from Mistakes</b><br><b>Instructional Implications</b>  |  |                                |                        |
| *Correct Answer (C)   |  |                                |                        |

| <b>3.8(B)</b> solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals   | <b>Analysis of Assessed Standards</b>  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|--|--|-------|---------|--|--------|--|-------|--|------|--|------|--|--------|--|-------|--|----------------|
| ! 2018 – Q24   | <b>Cluster</b> Data Analysis   |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
| <b>24</b> The frequency table shows the number of points scored by each player on a basketball team during a game.   | <b>Subcluster</b> Interpretation of Data   |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
| Points Scored  | <b>Content</b> Supporting  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
| <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Player</th> <th>Tally</th> </tr> </thead> <tbody> <tr> <td>Stephen</td> <td>     </td> </tr> <tr> <td>Alfred</td> <td>   </td> </tr> <tr> <td>Kenji</td> <td>       </td> </tr> <tr> <td>Pete</td> <td>       </td> </tr> <tr> <td>Eric</td> <td>       </td> </tr> <tr> <td>Wesley</td> <td>     </td> </tr> <tr> <td>Hayes</td> <td>    </td> </tr> </tbody> </table> | Player   | Tally | Stephen |  | Alfred |  | Kenji |  | Pete |  | Eric |  | Wesley |  | Hayes |  | <b>Process</b> |
| Player   | Tally  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
| Stephen  |  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
| Alfred   |  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
| Kenji  |  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
| Pete   |  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
| Eric   |  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
| Wesley   |  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
| Hayes  |  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  | <b>Stimulus</b>  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  | <b>Data Analysis</b>   |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  | <b>Item</b> State Local  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  | 32 <b>55*</b>  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  | 44   |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  |  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  |  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  | <b>Error Analysis</b>  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts       |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  | <input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  | <b>Learning from Mistakes</b>  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
|  | <b>Instructional Implications</b>  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |
| *Correct Answer (32)   |  |       |         |  |        |  |       |  |      |  |      |  |        |  |       |  |                |

|   |  |       |        |         |        |       |        |           |        |         |        |       |                |
|---|--|-------|--------|---------|--------|-------|--------|-----------|--------|---------|--------|-------|----------------|
| <b>3.8(B)</b> solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals  | <b>Analysis of Assessed Standards</b>  |       |        |         |        |       |        |           |        |         |        |       |                |
| ! 2017 – Q24  | <b>Cluster</b> Data Analysis   |       |        |         |        |       |        |           |        |         |        |       |                |
| <b>24</b> The graph shows the number of rings Mrs. Adams sold during six weeks at her jewelry store.  | <b>Subcluster</b> Interpretation of Data   |       |        |         |        |       |        |           |        |         |        |       |                |
| Rings Sold  | <b>Content</b> Supporting  |       |        |         |        |       |        |           |        |         |        |       |                |
| <table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td>Week 1</td> <td>○○○○○</td> </tr> <tr> <td>Week 2</td> <td>○○○○○○○</td> </tr> <tr> <td>Week 3</td> <td>○○○○○</td> </tr> <tr> <td>Week 4</td> <td>○○○○○○○○○</td> </tr> <tr> <td>Week 5</td> <td>○○○○○○○</td> </tr> <tr> <td>Week 6</td> <td>○○○○○</td> </tr> </tbody> </table> | Week 1   | ○○○○○ | Week 2 | ○○○○○○○ | Week 3 | ○○○○○ | Week 4 | ○○○○○○○○○ | Week 5 | ○○○○○○○ | Week 6 | ○○○○○ | <b>Process</b> |
| Week 1  | ○○○○○  |       |        |         |        |       |        |           |        |         |        |       |                |
| Week 2  | ○○○○○○○  |       |        |         |        |       |        |           |        |         |        |       |                |
| Week 3  | ○○○○○  |       |        |         |        |       |        |           |        |         |        |       |                |
| Week 4  | ○○○○○○○○○  |       |        |         |        |       |        |           |        |         |        |       |                |
| Week 5  | ○○○○○○○  |       |        |         |        |       |        |           |        |         |        |       |                |
| Week 6  | ○○○○○  |       |        |         |        |       |        |           |        |         |        |       |                |
|   | <b>Stimulus</b>  |       |        |         |        |       |        |           |        |         |        |       |                |
|   | <b>Data Analysis</b>   |       |        |         |        |       |        |           |        |         |        |       |                |
|   | <b>Item</b> State Local  |       |        |         |        |       |        |           |        |         |        |       |                |
|   | 108 <b>44*</b>   |       |        |         |        |       |        |           |        |         |        |       |                |
|   | 56   |       |        |         |        |       |        |           |        |         |        |       |                |
|   |  |       |        |         |        |       |        |           |        |         |        |       |                |
|   |  |       |        |         |        |       |        |           |        |         |        |       |                |
|   | <b>Error Analysis</b>  |       |        |         |        |       |        |           |        |         |        |       |                |
|   | <input type="checkbox"/> Guessing <input type="checkbox"/> Mixed Up Concepts       |       |        |         |        |       |        |           |        |         |        |       |                |
|   | <input type="checkbox"/> Careless Error <input type="checkbox"/> Stopped Too Early |       |        |         |        |       |        |           |        |         |        |       |                |
|   | <b>Learning from Mistakes</b>  |       |        |         |        |       |        |           |        |         |        |       |                |
|   | <b>Instructional Implications</b>  |       |        |         |        |       |        |           |        |         |        |       |                |
| *Correct Answer (108)   |  |       |        |         |        |       |        |           |        |         |        |       |                |

| <p><b>3.8(B)</b> solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals</p>   | <p><b>Analysis of Assessed Standards</b></p>   |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
|---|--|-----------------------------------|--|---|--|----------------|------------|----------------|--------------------------------|-----------------|------|---|---|-------------|--------------|--------------|----|-----|--|--|----|--|--|--|--|--|--|--|--|--|--|
| <p>2016 – Q23</p> <p><b>23</b> The graph below shows the number of pounds of plastic the Keller family recycled for five months.</p>  | <table border="1"> <tr> <td><b>Cluster</b></td><td>Data Analysis</td></tr> <tr> <td><b>Subcluster</b></td><td>Interpretation of Data</td></tr> <tr> <td><b>Content</b></td><td>Supporting</td></tr> <tr> <td><b>Process</b></td><td>3.1(A), 3.1(B), 3.1(E), 3.1(F)</td></tr> <tr> <td><b>Stimulus</b></td><td></td></tr> </table>                  | <b>Cluster</b>                    | Data Analysis                              | <b>Subcluster</b>                       | Interpretation of Data                     | <b>Content</b> | Supporting | <b>Process</b> | 3.1(A), 3.1(B), 3.1(E), 3.1(F) | <b>Stimulus</b> |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <b>Cluster</b>  | Data Analysis  |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <b>Subcluster</b>   | Interpretation of Data   |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <b>Content</b>  | Supporting   |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <b>Process</b>  | 3.1(A), 3.1(B), 3.1(E), 3.1(F)   |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <b>Stimulus</b>   |  |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <p style="text-align: center;"><b>Recycled Plastic</b></p> <table border="1"> <thead> <tr> <th>Month</th> <th>Pounds (cylinders)</th> </tr> </thead> <tbody> <tr> <td>March</td> <td>4</td> </tr> <tr> <td>April</td> <td>5</td> </tr> <tr> <td>May</td> <td>6</td> </tr> <tr> <td>June</td> <td>5</td> </tr> <tr> <td>July</td> <td>7</td> </tr> </tbody> </table> | Month  | Pounds (cylinders)                | March                                      | 4                                       | April                                      | 5              | May        | 6              | June                           | 5               | July | 7 | <p><b>Data Analysis</b></p> <table border="1"> <tr> <td><b>Item</b></td><td><b>State</b></td><td><b>Local</b></td></tr> <tr> <td>60</td><td>50*</td><td></td></tr> <tr> <td></td><td>50</td><td></td></tr> <tr> <td></td><td></td><td></td></tr> <tr> <td></td><td></td><td></td></tr> <tr> <td></td><td></td><td></td></tr> </table> | <b>Item</b> | <b>State</b> | <b>Local</b> | 60 | 50* |  |  | 50 |  |  |  |  |  |  |  |  |  |  |
| Month   | Pounds (cylinders)   |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| March   | 4  |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| April   | 5  |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| May   | 6  |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| June  | 5  |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| July  | 7  |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <b>Item</b>   | <b>State</b>   | <b>Local</b>                      |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 60  | 50*  |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
|   | 50   |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
|   |  |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
|   |  |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
|   |  |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <p>Based on the graph, how many more pounds of plastic did the family recycle in July than in April?</p> <p>Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.</p> <p>*Correct Answer (60)</p>   | <p><b>Error Analysis</b></p> <table> <tr> <td><input type="checkbox"/> Guessing</td> <td><input type="checkbox"/> Mixed Up Concepts</td> </tr> <tr> <td><input type="checkbox"/> Careless Error</td> <td><input type="checkbox"/> Stopped Too Early</td> </tr> </table> <p><b>Learning from Mistakes</b><br/><b>Instructional Implications</b></p> | <input type="checkbox"/> Guessing | <input type="checkbox"/> Mixed Up Concepts | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Guessing   | <input type="checkbox"/> Mixed Up Concepts   |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Careless Error   | <input type="checkbox"/> Stopped Too Early   |                                   |  |   |  |                |            |                |                                |                 |      |   |   |             |              |              |    |     |  |  |    |  |  |  |  |  |  |  |  |  |  |

# Personal Financial Literacy

**3.9 Personal financial literacy.** The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security.

| <b>3.9(D)</b> explain that credit is used when wants or needs exceed the ability to pay and that it is the borrower's responsibility to pay it back to the lender, usually with interest |  | <b>Analysis of Assessed Standards</b>                        |  |
|--|--|--|--|
| 2016 – Q15   |  | <b>Cluster</b>   | Personal Financial Literacy                |
|  |  | <b>Subcluster</b>  | Borrowing                                  |
|  |  | <b>Content</b>   | Supporting                                 |
|  |  | <b>Process</b>   | 3.1(A), 3.1(B), 3.1(G)                     |
|  |  | <b>Stimulus</b>  |  |
|  |  | <b>Data Analysis</b>   |  |
|  |  | Item   | State                                      |
|  |  | A  | 7  |
|  |  | B  | 10   |
|  |  | C*   | 66   |
|  |  | D  | 17   |
|  |  | <b>Error Analysis</b>  |  |
|  |  | <input type="checkbox"/> Guessing                            | <input type="checkbox"/> Mixed Up Concepts |
|  |  | <input type="checkbox"/> Careless Error                      | <input type="checkbox"/> Stopped Too Early |
|  |  | <b>Learning from Mistakes<br/>Instructional Implications</b> |  |
|  |  |  |  |

\*Correct Answer (C)

|  |  |                             |       |
|--|--|-----------------------------|-------|
| 3.9(D) explain that credit is used when wants or needs exceed the ability to pay and that it is the borrower's responsibility to pay it back to the lender, usually with interest  | Analysis of Assessed Standards                       |                             |       |
| <p>2015 – Q25 Sample</p> <p><b>25</b> Claire borrowed \$20 from her mom in order to buy game tokens at a festival. Her mom said Claire would have to pay the money back with interest. Which statement best explains what Claire's mom meant?</p> <ul style="list-style-type: none"> <li><b>A</b> She expected Claire to pay back only the money she borrowed.</li> <li><b>B</b> She expected Claire to pay back only part of the money she borrowed.</li> <li><b>C</b> She expected Claire to keep the money she borrowed and not pay any of it back.</li> <li><b>D</b> She expected Claire to pay back the money she borrowed plus an additional amount of money.</li> </ul> | Cluster  | Personal Financial Literacy |       |
|  | Subcluster   | Borrowing                   |       |
|  | Content  | Supporting                  |       |
|  | Process  | 3.1(A), 3.1(B), 3.1(G)      |       |
|  | Stimulus   |                             |       |
| <p><b>*Correct Answer (D)</b></p>  | Data Analysis  |                             |       |
|  | Item   | State                       | Local |
|  | A  | NA                          |       |
|  | B  | NA                          |       |
|  | C  | NA                          |       |
|  | D*   | NA                          |       |
| <p><b>Error Analysis</b></p> <p><input type="checkbox"/> Guessing      <input type="checkbox"/> Mixed Up Concepts</p> <p><input type="checkbox"/> Careless Error    <input type="checkbox"/> Stopped Too Early</p>   | Learning from Mistakes<br>Instructional Implications |                             |       |
|  |  |                             |       |

| <b>3.9(A) explain the connection between human capital/labor and income</b>  |  | <b>Analysis of Assessed Standards</b>   |  |
|--|--|---|--|
| <b>!</b> 2019 – Q23  |  | <b>Cluster</b>                          | Personal Financial Literacy                |
| Ms. Patterson works for a company. Which factor would most likely affect the amount of money Ms. Patterson gets paid by the company? |  | <b>Subcluster</b>                       | Economics                                  |
| <b>A</b> The amount of money Ms. Patterson has to pay in bills   |  | <b>Content</b>                          | Supporting                                 |
| <b>B</b> The size of Ms. Patterson's family  |  | <b>Process</b>                          |  |
| <b>C</b> The amount of money Ms. Patterson saves every month   |  | <b>Stimulus</b>                         |  |
| <b>D</b> The work experience Ms. Patterson has   |  | <b>Data Analysis</b>                    |  |
| *Correct Answer (D)  |  | <b>Item</b>                             | <b>State</b>                               |
|  |  | A                                       | 27   |
|  |  | B                                       | 7  |
|  |  | C                                       | 18   |
|  |  | D*                                      | 46   |
|  |  | <b>Error Analysis</b>                   |  |
|  |  | <input type="checkbox"/> Guessing       | <input type="checkbox"/> Mixed Up Concepts |
|  |  | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|  |  | <b>Learning from Mistakes</b>           |  |
|  |  | <b>Instructional Implications</b>       |  |

| <b>3.9(A) explain the connection between human capital/labor and income</b>   |  | <b>Analysis of Assessed Standards</b>   |  |
|---|--|---|--|
| 2018 – Q1   |  | <b>Cluster</b>                          | Personal Financial Literacy                |
| <b>1</b> Nina works for a restaurant. The restaurant pays her every week for the work she does. Some weeks she works more hours than other weeks. |  | <b>Subcluster</b>                       | Economics                                  |
| Which statement is most likely true?  |  | <b>Content</b>                          | Supporting                                 |
| <b>A</b> When Nina works fewer hours, she earns more income from the restaurant.  |  | <b>Process</b>                          |  |
| <b>B</b> When Nina works more hours, she earns more income from the restaurant.   |  | <b>Stimulus</b>                         |  |
| <b>C</b> When Nina works more hours, the restaurant gets less labor from her.   |  | <b>Data Analysis</b>                    |  |
| <b>D</b> When Nina works fewer hours, the restaurant gets more labor from her.  |  | <b>Item</b>                             | <b>State</b>                               |
|   |  | A                                       | 5  |
|   |  | B*                                      | 88   |
|   |  | C                                       | 3  |
|   |  | D                                       | 4  |
|   |  | <b>Error Analysis</b>                   |  |
|   |  | <input type="checkbox"/> Guessing       | <input type="checkbox"/> Mixed Up Concepts |
|   |  | <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |
|   |  | <b>Learning from Mistakes</b>           |  |
|   |  | <b>Instructional Implications</b>       |  |
| *Correct Answer (B)   |  |   |  |

| 3.9(A) explain the connection between human capital/labor and income  |  | Analysis of Assessed Standards                               |  |
|---|--|--|--|
|  2016 – Q43  |  | <b>Cluster</b>   | Personal Financial Literacy                |
| <b>43</b> A city pays each police officer for the work the police officer does. Which factor would most likely <b>not</b> affect the amount of money this city pays a police officer? |  | <b>Subcluster</b>  | Economics                                  |
| A The size of the police officer's family   |  | <b>Content</b>   | Supporting                                 |
| B The number of years the police officer has worked for the city  |  | <b>Process</b>   | 3.1(A), 3.1(B), 3.1(G)                     |
| C The special skills that the police officer has  |  | <b>Stimulus</b>  |  |
| D The level of education that the police officer has  |  | <b>Data Analysis</b>   |  |
|   |  | <b>Item</b>  | <b>State</b>                               |
|   |  | A*   | 51   |
|   |  | B  | 19   |
|   |  | C  | 13   |
|   |  | D  | 16   |
|   |  | <b>Error Analysis</b>  |  |
|   |  | <input type="checkbox"/> Guessing                            | <input type="checkbox"/> Mixed Up Concepts |
|   |  | <input type="checkbox"/> Careless Error                      | <input type="checkbox"/> Stopped Too Early |
|   |  | <b>Learning from Mistakes<br/>Instructional Implications</b> |  |
| <b>*Correct Answer (A)</b>  |  |  |  |

| <b>3.9(B)</b> describe the relationship between the availability or scarcity of resources and how that impacts cost |  | <b>Analysis of Assessed Standards</b>                        |  |
|---|--|--|--|
| 2015 – Q24 Sample   |  | <b>Cluster</b>   | Personal Financial Literacy                |
|   |  | <b>Subcluster</b>  | Economics                                  |
|   |  | <b>Content</b>   | Supporting                                 |
|   |  | <b>Process</b>   | 3.1(A), 3.1(B), 3.1(G)                     |
|   |  | <b>Stimulus</b>  |  |
|   |  | <b>Data Analysis</b>   |  |
|   |  | Item   | State                                      |
|   |  | A  | NA   |
|   |  | B  | NA   |
|   |  | C*   | NA   |
|   |  | D  | NA   |
|   |  | <b>Error Analysis</b>  |  |
|   |  | <input type="checkbox"/> Guessing                            | <input type="checkbox"/> Mixed Up Concepts |
|   |  | <input type="checkbox"/> Careless Error                      | <input type="checkbox"/> Stopped Too Early |
| <b>*Correct Answer (C)</b>  |  | <b>Learning from Mistakes<br/>Instructional Implications</b> |  |
|   |  |  |  |

|                      |  |  | Analysis of Assessed Standards                       |       |       |  |  |  |
|----------------------|--|--|--|-------|-------|--|--|--|
|                      |  |  | Cluster  |       |       |  |  |  |
|                      |  |  | Subcluster   |       |       |  |  |  |
|                      |  |  | Content  |       |       |  |  |  |
|                      |  |  | Process  |       |       |  |  |  |
|                      |  |  | Item Type  |       |       |  |  |  |
|                      |  |  | Stimulus   |       |       |  |  |  |
|                      |  |  | Data Analysis  |       |       | Error Analysis   |  |  |
|                      |  |  | Item   | State | Local | <input type="checkbox"/> Guessing<br><input type="checkbox"/> Careless Error<br><input type="checkbox"/> Stopped Too Early<br><input type="checkbox"/> Mixed Up Concepts |  |  |
|                      |  |  |  |       |       |  |  |  |
|                      |  |  |  |       |       |  |  |  |
|                      |  |  |  |       |       |  |  |  |
|                      |  |  |  |       |       |  |  |  |
|                      |  |  | Learning from Mistakes<br>Instructional Implications |       |       |  |  |  |
| * Correct Answer ( ) |  |  |  |       |       |  |  |  |

|                      |  |  | Analysis of Assessed Standards                       |       |       |  |  |  |
|----------------------|--|--|--|-------|-------|--|--|--|
|                      |  |  | Cluster  |       |       |  |  |  |
|                      |  |  | Subcluster   |       |       |  |  |  |
|                      |  |  | Content  |       |       |  |  |  |
|                      |  |  | Process  |       |       |  |  |  |
|                      |  |  | Item Type  |       |       |  |  |  |
|                      |  |  | Stimulus   |       |       |  |  |  |
|                      |  |  | Data Analysis  |       |       | Error Analysis   |  |  |
|                      |  |  | Item   | State | Local | <input type="checkbox"/> Guessing<br><input type="checkbox"/> Careless Error<br><input type="checkbox"/> Stopped Too Early<br><input type="checkbox"/> Mixed Up Concepts |  |  |
|                      |  |  |  |       |       |  |  |  |
|                      |  |  |  |       |       |  |  |  |
|                      |  |  |  |       |       |  |  |  |
|                      |  |  |  |       |       |  |  |  |
|                      |  |  | Learning from Mistakes<br>Instructional Implications |       |       |  |  |  |
| * Correct Answer ( ) |  |  |  |       |       |  |  |  |