PASA-Math Test Specifications Appendix 2.1

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Introduction

The *Pennsylvania Alternate System of Assessment* (*PASA*) is a statewide alternate assessment designed for students with the most significant cognitive disabilities. It is administered on a one-to-one basis to students who are unable to participate in the *Pennsylvania System of School Assessment* (*PSSA*) as determined by their Individualized Education Plan (IEP). Administration of the *PASA* achieves compliance with several federal laws and Pennsylvania School Code. The *PASA-Math* is part of the *PASA* and is designed to assess math content knowledge.

This *Test Specifications* document provides a reference for test developers to help build tests which remain consistent across years. This reference provides a blueprint for the number of skills per assessment anchor and clarifications or restrictions for how skills should be written for the tests. **It is not intended to inform instruction other than to outline the academic content prioritized for this student population**. Teachers are still responsible for providing instruction across the entire range of grade level eligible content to the fullest appropriate extent.

Purpose

Administration of the *PASA* serves 3 main purposes, it:

1. Keeps the state in compliance with federal laws and state codes requiring all students to be part of the statewide accountability system,
2. Promotes access to the general education curriculum for students with the most significant cognitive disabilities,
3. Provides evidence of progress by students with the most significant cognitive disabilities toward proficiency in state academic content standards in science to relevant stakeholders.

Content

The *PASA-Math* is administered to students in grades 3-8, and 11 and is aligned to the appropriate grade level PA Core Math Standards through the Alternate Eligible Content in math. The Alternate Eligible Content in math represents a reduction in breadth, depth, and/or level of complexity in the associated grade level standards. This supports increased access to the general education curriculum at an entry point appropriate for this student population.

The Alternate Eligible Content was developed by a team of university faculty, special education teachers, math teachers, math content experts, and experts in the field of special education. Alternate Eligible Content were designed to specify essential learning outcomes in math and conceive a population-appropriate learning progression across grade levels. A separate document entitled *Understanding the Alternate Eligible Content* is available which outlines the Alternate Eligible Content and the overall sequence of the framework.

Test Levels

Students with significant cognitive disabilities are a diverse population with a range in level of communication, level of independence, and ability to function at an abstract level. Many researchers believe that this diversity requires more than one level of test to fairly accommodate the wide range of abilities. For this reason, two tests are constructed per grade level; a Tier 1 test and a Tier 2 test.

Tier 1
Tier 1 tasks are predominately basic matching and counting tasks, however, simple application and problem-solving tasks are present. At this level, mathematical terminology is minimized whenever possible and picture support is provided whenever feasible. As grade level progresses, familiarity with simple, basic mathematical vocabulary becomes necessary. Unless otherwise indicated in the alternate eligible content, tasks are mostly 1-step problems.

Tier 2
Tier 2 tasks involve basic matching and counting tasks, as well as application and problem-solving tasks. Familiarity with simple, basic mathematical terminology (e.g., plus, minus, times, etc.) and symbols (e.g., $+$, $<$, $=$) is expected. Additionally, tasks may involve 2-step processes.

Table 1. PASA-Math tier descriptions

General Performance Descriptions

The *PASA* assessment reports results in terms of four performance categories for both tiers; Emerging, Novice, Proficient, and Advanced. General outlines for each of the performance categories that guide test development are listed in the following paragraphs.

Advanced
Using their primary mode of communication, appropriate supports and accommodations, the student demonstrates a consistent academic awareness and excellent understanding of the knowledge, skills and process as outlined by the Pennsylvania Alternate Eligible Content and tier designation.

Proficient
Using their primary mode of communication, appropriate supports and accommodations, the student demonstrates an essential academic awareness and satisfactory understanding of the knowledge, skills and process as outlined by the Pennsylvania Alternate Eligible Content and tier designation.

Novice
Using their primary mode of communication, appropriate supports and accommodations, the student demonstrates an improving academic awareness and partial understanding of the knowledge, skills and process as outlined by the Pennsylvania Alternate Eligible Content and tier designation.

Emerging
Using their primary mode of communication, appropriate supports and accommodations, the student demonstrates a preliminary academic awareness and limited understanding of the knowledge, skills and process as outlined by the Pennsylvania Alternate Eligible Content and tier designation.

Test Item Format

The *PASA-Math* is an individually administered multiple-choice test. Each item consists of a context, an item prompt, and 3 answer choices. The items are standardized through the scripting of each part of the item. Test assessors are given a script which specifies what to say to; 1) present the item context, 2) ask the target question, 3) present the answer choices. Assessors are permitted to change everyday language in the item to vocabulary more familiar to the student and consistent with daily instruction.

Item stimuli and answer choices are predominately presented as images. In some cases, answer choices may be words or symbols with picture support when feasible. Even though the test is available in both digital and paper format, both formats present the same 2-dimensional images. In other words, the same graphics are displayed on a computer screen or in print in a test booklet and the student chooses their answer from the available pictures. At this time, students do NOT interact with the computer to respond to items.

Student Responses

Students with the most severe cognitive disabilities do not communicate necessarily in traditional ways. On the *PASA-Math* assessment, students are allowed to indicate their answer choice in different ways, including but not limited to:

- saying/signing the letter associated with their choice,
- saying/signing a word or words associated with their choice,
- pointing to their answer choice,
- touching the picture of their answer choice,
- gazing at their answer choice,
- nodding their head or gesturing in some other way at their answer choice

Scoring

The assessor enters student responses for each *PASA-Math* item directly into the *PASA-Digital* system. Assessors record a student's response to an item by entering the letter that matches the answer choice indicated by the student into the computer before moving on to the next item. Student responses consist of a letter that corresponds to the answer choice indicated by the student during the assessment or a 'no response' option for students who did not respond to a particular prompt. After the test administration closes, student responses are assigned a score of correct or incorrect for scoring or scaling.

Test Design

Each year two tests, a Tier 1 and a Tier 2, are administered per grade level for a total of 14 operational tests. Each operational administration of the *PASA-Math* consists of 34 multiple-choice items; 30 operational items and 4 field test items. Only the 30 operational items count toward a student's total score on the test and the items are the same for all students taking the tests.

Of the items counting toward a student's score, approximately 12 items will be 'easy' items from the designated tier, the other approximately 12 items will be 'difficult' items from the designated tier and 6 items are 'off-tier'. This will help to ensure differentiation among students across their respective 'ability' continuum. The 12 linking items are being used in the service of developing a placement test which will replace assessors choosing the tier test the student will take. The linking items used for equating purposes range in difficulty for the Tier 1 items, but will include more 'easy' items than hard items for the items from the Tier 2 designation.

The tables below present outlines by grade level of the number of skills that can be expected by Reporting Category and Assessment Anchor.

Table 2. Grade 3 Test Specifications

Grade 3 Reporting Category and Assessment Anchor	Number of Alternate Eligible Content	Number of Skills
M03.AT. Numbers and Operations	6	10-13
AT.1 Numbers and operations with whole numbers	4	8-10
AF.1 Numbers and operations with fractions	2	2-3
M03.BO. Operations and Algebraic Thinking	4	3-5
BO.1 Understanding multiplication and division	1	0-1
BO.3 Using operations and patterns to solve problems	3	3-4
M03.CG Geometry	2	2-3
CG.1 Classifying and manipulating shapes	2	2-3
M03.DM. Measurement and Data	7	10-16
DM.1 Using measuring tools and counting money	4	8-11
DM.2 Displaying data with graphic representations	1	2-3
DM.3 Understanding area	1	0-1
DM.4 Understanding perimeter	1	0-1

Table 3. Grade 4 Test Specifications

Grade 4 Reporting Category and Assessment Anchor	Number of Alternate Eligible Content	Number of Skills
M04.AT. Numbers and Operations	10	13-16
AT.1 Numbers and operations with whole numbers	2	4-5
AT.2 Using operations to solve problems with whole numbers	3	4-6
AF.1 Numbers and operations with fractions	2	2-3
AF.2 Using operations to solve problems with fractions	2	2-3
AF.3 Converting decimals and fractions	1	0-1
M04.BO. Operations and Algebraic Thinking	4	4-8
BO.1 Using operations to solve problems with whole numbers	2	2-4
BO.2 Identifying multiples	1	0-1
BO.3 Generating patterns	1	2-3
M04.CG Geometry	2	2-3
CG.1 Classifying and manipulating shapes	2	2-3
04.DM Measurement and Data	4	6-8
DM.1 Solving problems involving measurement, area, and perimeter	2	4-5
DM.2 Organizing and answering questions about data presented in graphs	2	2-3

Table 4. Grade 5 Test Specifications

Grade 5 Reporting Category and Assessment Anchor	Number of Alternate Eligible Content	Number of Skills
M05.AT. Numbers and Operations	9	12-19
AT.1. Understanding place-value of whole numbers and decimals	4	6-8
AT.2. Using operations to solve problems with whole numbers and decimals	3	4-6
AF.1 Solving addition and subtraction problems with fractions	1	2-4
AF.2 Solving multiplication and division problems with fractions	1	0-1
M05.BO. Operations and Algebraic Thinking	2	2-3
BO.2 Extending patterns and determining rules for patterns	2	2-3
M05.CG Geometry	3	4-5
CG.1 Identifying and graphing ordered pairs	2	1-2
CG.2 Identifying 2-dimensional shapes	1	2-3
M05.DM Measurement and Data	3	2-5
DM.1 Solving measuring problems with a conversion table	1	1-2
DM.2 Using different representations to display data	1	1-2
DM.3 Solving volume problems	1	0-1

Table 5. Grade 6 Test Specifications

Grade 6 Reporting Category and Assessment Anchor	Number of Alternate Eligible Content	Number of Skills
M06.AN. The Number System	9	14-18
AN.2 Using operations to solve problems using multi-digit numbers and identifying multiples	2	4-5
AN.3 Understanding positive and negative numbers including identifying points in all 4 quadrants	4	5-7
AR.1 Understanding ratios, unit rate, and percentages	3	5-6
M06.BE. Expressions and Equations	3	3-5
BE.2 Selecting and using algebraic expressions to solve problems	2	3-4
BE.3 Identifying relationships between variables	1	0-1
M06.CG Geometry	3	3-4
CG.1 Classifying 3-dimensional figures and calculating area and volume using formulas	3	3-4
M06.DS Statistics and Probability	2	3-4
DS.1 Identifying measures of central tendency and comparing points on a graph	2	3-4

Table 6. Grade 7 Test Specifications

Grade 7 Reporting Category and Assessment Anchor	Number of Alternate Eligible Content	Number of Skills
M07.AN. The Number System	7	12-15
AN.1 Using operations to solve problems with whole numbers, fractions, decimals, and positive and negative numbers	3	6-7
AR.1 Identifying proportional relationships and using them to solve problems	4	6-8
M07.BE. Expressions and Equations	2	4-5
BE.2 Selecting algebraic expressions and deterring reasonableness of solutions to problems using all 4 operations	2	4-6
M07.CG Geometry	5	6-8
CG.1 Describe and use properties of geometric figures to solve problems	3	4-5
CG.2 Identify, use, and describe properties of angles and their measures	2	2-3
M07.DS Statistics and Probability	3	2-4
DS.2 Using statistical measures to compare data distributions	2	2-3
DS.3 Predicting the likelihood of outcomes	1	0-1

Table 7. Grade 8 Test Specifications

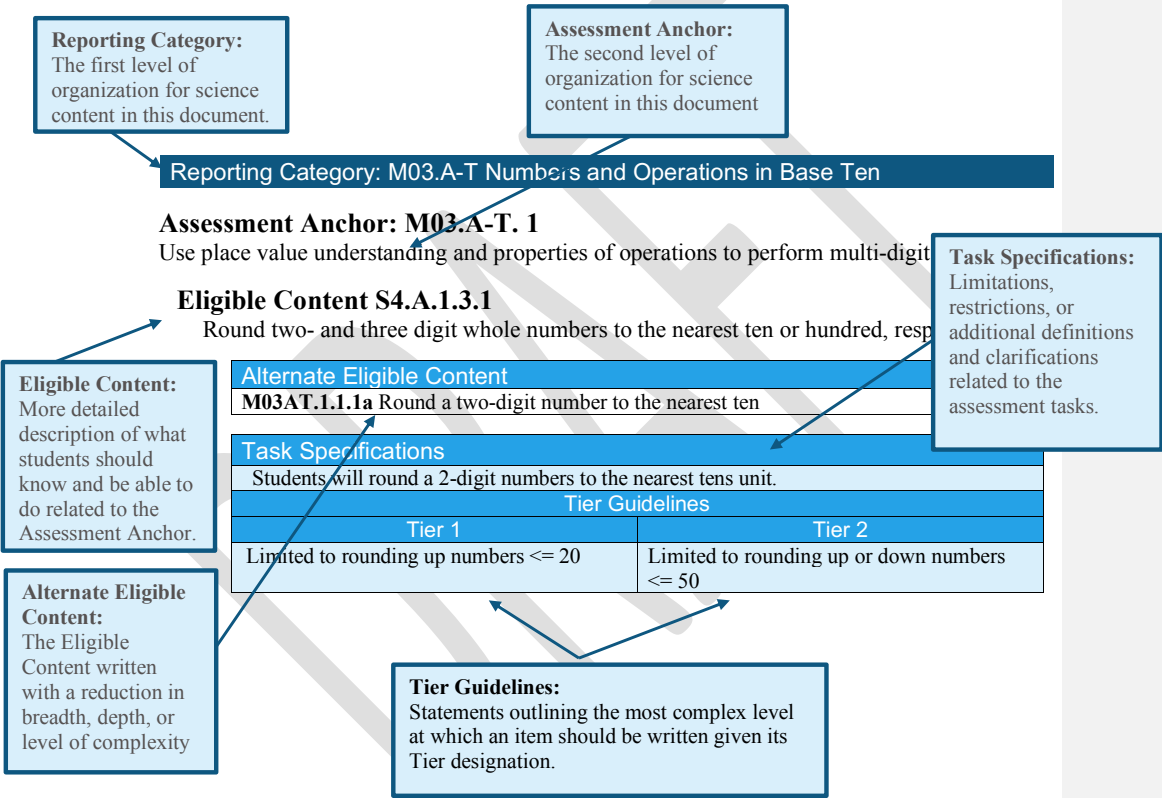| Grade 8 Reporting Category and Assessment Anchor	Number of Alternate Eligible Content	Number of Skills
M08.A The Number System	2	2-3
AN.1 Applying concepts of rational and irrational numbers	2	2-3
M08.B Expressions and Equations	8	11-14
BE.1 Selecting and using expressions and equations to solve problems involving rational numbers	1	0-1
BE.2 Analyzing and describing linear relationships	2	3-4
BE.3 Selecting, solving, and interpreting linear equations with one or two variables using the 4 operations	3	5
BF.2 Selecting or interpreting functional relationships between displayed as tables or graphs	2	4
M08.CG Geometry	4	2-5
CG.1 Identifying congruence or similarity of geometric shapes	2	2-3
CG.2 Solving problems with right angles and triangles	1	0-1
CG.3 Calculating volume	1	0-1
M08.DS Statistics and Probability	2	2-4
DS.1 Analyzing and interpreting data displayed in 2-way tables	2	2-4

Table 8. Grade 11 Test Specifications

Grade 11 Reporting Category and Assessment Anchor	Number of Alternate Eligible Content	Number of Skills
CC.2.1.HS.F – Fractions- Single Numbers/ Measurement	3	6
F.2 Converting between fractions and decimals in a real-world problem	1	2
F.3 Identifying and interpreting scale in a real-world problem	1	2
F.4 Determining the necessary units and solving a real-world problem	1	2
CC.2.2.HS.C – Building Data Displays and Using Data Displays	4	6-8
C.1 Determining the missing coordinates in a table of values	1	2
C.3 Describing the linear relationship displayed in a table	1	1-2
C.5a Interpreting the effect of a change in one variable on the other variable using graphs or tables	1	2
C.5b Interpreting a graphical representation of a linear model in a real-world problem	1	1-2
CC.2.2.HS.D – Expressions, Equations, and Functions	4	6-9
D.1 Selecting an algebraic expression using any of the four operations and solve a real world problem	1	2-3
D.7 Selecting a one-variable equation that represents a real-world problem	1	2-3
D.8 Solving to find a missing attribute when determining area or volume	1	0-1
D.9 Selecting the missing step in a given sequence of steps to solve an equation	1	2
CC.2.3.HS.A – Geometric Figures	2	2-3
A.13 Matching corresponding two-dimensional and three-dimensional representations	1	2
A.14 Comparing the area of two objects with one equivalent attribute	1	0-1
CC.2.4.HS.B – Measurement	4	4
B.2 Interpreting the means and/or medians of two sets of data	1	1
B.3 Identifying the relationship between two or more variables in a function	1	1
B.5 Drawing a conclusion about data presented in a two-way table representing a real world problem	1	1
B.7 Identifying the probability of events based on real-world examples of conditional probability	1	1

Task Specifications

Task specifications clarify, define, and limit how standards are tested for this unique student population. These specifications do NOT dictate what content is to be taught or how the content is to be taught. They indicate only what is assessed. Teachers are still responsible for providing instruction across the entire range of eligible content to the greatest appropriate extent.

Guide to Reading the Specifications Table

Reporting Category:
The first level of organization for science content in this document.

Assessment Anchor:
The second level of organization for science content in this document

Reporting Category: M03.A-T Numbers and Operations in Base Ten

Assessment Anchor: M03.A-T. 1
Use place value understanding and properties of operations to perform multi-digit

Eligible Content S4.A.1.3.1
Round two- and three digit whole numbers to the nearest ten or hundred, resp

Task Specifications:
Limitations, restrictions, or additional definitions and clarifications related to the assessment tasks.

Eligible Content:
More detailed description of what students should know and be able to do related to the Assessment Anchor.

Alternate Eligible Content
M03AT.1.1.1a Round a two-digit number to the nearest ten

Task Specifications	
Students will round a 2-digit numbers to the nearest tens unit.	
Tier Guidelines	
Tier 1	Tier 2
Limited to rounding up numbers <= 20	Limited to rounding up or down numbers <= 50

Alternate Eligible Content:
The Eligible Content written with a reduction in breadth, depth, or level of complexity

Tier Guidelines:
Statements outlining the most complex level at which an item should be written given its Tier designation.

Explanation of Terms used in Specifications Table

The **Reporting Category** is the first level of organization for the collection of assessment anchors and associated eligible content related to the PA Core Standards in math. The reporting categories in math vary depending on grade level:

- Numbers and Operations (grades 3-5)
- Operations and Algebraic Thinking (grades 3-5)
- Measurement and Data (grades 3-5)
- Geometry (grades 3-8, 11)

- The Number System (grades 6-8)
- Ratios and Proportional Relationships (grades 6-7)
- Statistics and Probability (grades 6-8, 11)

- Functions (grades 8 and 11)
- Number and Quantity (grade 11)
- Algebra (grade 11)

The total number of skills that will test this reporting category is included in parentheses at the right hand side of the bar.

The **Assessment Anchor** is the second level of organization for this same collection of assessment anchors and eligible content. Each reporting category has sub-categories.

The **Eligible Content** is a more detailed description of individual skills that students should know and be able to do as a result of instruction to demonstrate proficiency on the state's PA Core Standards in math.

The **Alternate Eligible Content** is a reduction in breadth, depth, and level of complexity of the Eligible Content.

The **Code** is a numeric tag for each alternate eligible content statement that associates the alternate eligible content with the other organizational levels of the PA Core Standards in math.

Task Specifications are definitions, clarifications, and limitations to the skills designed to assess the alternate eligible content.

Tier Guidelines are additional statements outlining the highest level of complexity to which an item should be written given its Tier designation.

Grade 3

Reporting Category: M03.A-T Numbers and Operations in Base Ten

Assessment Anchor: M03.A-T.1
Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Eligible Content: M03.A-T.1.1.1
Round two- and three-digit whole numbers to the nearest ten or hundred, respectively.

Alternate Eligible Content
M03AT.1.1.1a Round a two-digit number to the nearest ten

Task Specifications	
Students will determine the nearest neighbor for a given location.	
Tier Guidelines	
Tier 1	Tier 2
Limited to showing how close an object is to another object.	Limited to rounding up or down numbers ≤ 30

Reporting Category: M03.A-T Numbers and Operations in Base Ten

Assessment Anchor: M03.A-T.1
Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Eligible Content: M03.A-T.1.1.2
Add two- and three- digit whole numbers (limit sums from 100 through 1,000) and/or subtract two- and three-digit numbers from three-digit whole numbers.

Alternate Eligible Content
M03AT.1.1.2a Demonstrate understanding of addition with small sets

Task Specifications	
Students will add one- and two- digit quantities or numbers.	
Tier Guidelines	
Tier 1	Tier 2
Limited to two quantities with sums ≤ 10	Limited to two numbers with sums ≤ 20

Reporting Category: M03.A-T Numbers and Operations in Base Ten

Assessment Anchor: M03.A-T.1
Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Eligible Content: M03.A-T.1.1.2
Add two- and three- digit whole numbers (limit sums from 100 through 1,000) and/or subtract two- and three-digit numbers from three-digit whole numbers.

Alternate Eligible Content
M03AT.1.1.2b Demonstrate understanding subtraction with small sets

Task Specifications
Students will subtract single digit quantities or numbers.

Tier Guidelines	
Tier 1	Tier 2
Limited to two quantities ≤ 5	Limited to two numbers ≤ 10

Reporting Category: M03.A-T Numbers and Operations in Base Ten

Assessment Anchor: M03.A-T.1
Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Eligible Content: M03.A-T.1.1.4
Order a set of whole numbers from least to greatest or greatest to least (up through 9,999, and limit sets to no more than four numbers).

Alternate Eligible Content
M03AT.1.1.4a Order 3 numbers under 10

Task Specifications
Students will put quantities or numbers ≤ 10 in ascending or descending order.

Tier Guidelines	
Tier 1	Tier 2
Limited to ascending sequences. Do not have to be consecutive.	No additional limitations

Reporting Category: M03.A-F Numbers and Operations - Fractions

Assessment Anchor: M03.A-F.1

Develop an understanding of fractions as numbers.

Eligible Content: M03.A-F.1.1.1

Demonstrate that when a whole or set is partitioned into y equal parts, the fraction 1/y represents 1 part of the whole and/or the fraction x/y represents x equal parts of the whole (limit denominators to 2, 3, 4, 6, and 8; limit numerators to whole numbers less than the denominator; and no simplification necessary).

Alternate Eligible Content
M03AF1.1.1a Identify the unit fraction or other proper fraction (denominators = 2, 3, 4, 6) that matches the representation

Task Specifications
Identify a fraction as an equal part of a whole

Tier Guidelines	
Tier 1	Tier 2
Limited to matching same images for denominators limited to 2 and 4.	No additional limitations

Reporting Category: M03.A-F Numbers and Operations - Fractions

Assessment Anchor: M03.A-F.1

Develop an understanding of fractions as numbers.

Eligible Content: M03.A-F.1.1.3

Recognize and generate simple equivalent fractions (limit the denominators to 1, 2, 3, 4, 6, and 8 and limit numerators to whole numbers less than the denominator).
Example 1: 1/2 = 2/4
Example 2: 4/6 = 2/3

Alternate Eligible Content
M03AF1.1.3b Identify equivalent fractions using representations

Task Specifications
Students will match a unit fraction with its unsimplified equivalent

Tier Guidelines	
Tier 1	Tier 2
Limited to matching same images for denominators limited to 2 and 4.	Denominators limited 2, 3, 4, and 6

Reporting Category: M03.B-O Operations and Algebraic Thinking

Assessment Anchor: M03.B-O.1
Represent and solve problems involving multiplication and division.

Eligible Content: M03.B-O.1.1.1
Interpret and/or describe products of whole numbers (up to and including 10×10).
Example 1: Interpret 35 as the total number of objects in 5 groups, each containing 7 objects.
Example 2: Describe a context in which a total number of objects can be expressed as 5×7.

Alternate Eligible Content
M03BO1.1.1a Use a model in a multiplication situation

Task Specifications
Students will identify a model that represents a multiplication problem

Tier Guidelines	
Tier 1	Tier 2
Limited to 2 or 3 sets of quantities with a product ≤ 10	Limited to 2, 3, or 4 sets with products ≤ 20

Reporting Category: M03.B-O Operations and Algebraic Thinking

Assessment Anchor: M03.B-O.3
Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Eligible Content: M03.B-O.3.1.1.1
Solve two-step word problems using the four operations (expressions are not explicitly stated).
Limit to problems with whole numbers and having whole-number answers.

Alternate Eligible Content
M03BO3.1.1a Solve a 1-step real-world problem involving numbers under 10 using addition or subtraction

Task Specifications
Students will solve a real-world problem using addition or subtraction with quantities or numbers less than 10

Tier Guidelines	
Tier 1	Tier 2

Commented [DM1]: No limitations beyond tier descriptions? Tier 1 just addition?

Reporting Category: M03.B-O Operations and Algebraic Thinking

Assessment Anchor: M03.B-O.3
Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Eligible Content: M03.B-O.3.1.5
Identify arithmetic patterns (including patterns in the addition table or multiplication table) and/or explain them using properties of operations.
Example 1: Observe that 4 times a number is always even.
Example 2: Explain why 6 times a number can be decomposed into three equal addends.

Alternate Eligible Content
M03BO3.1.5a Identify a mathematical pattern in a real-world problem

Task Specifications	
Students will choose the base pattern that creates a given pattern.	
Tier Guidelines	
Tier 1	Tier 2
Limited to picture sequences and picture rules	Can be pictures or numeric sequences. Numeric sequences limited to identifying rule for increasing or decreasing sequences by 1, 2, 5.

Reporting Category: M03.B-O Operations and Algebraic Thinking

Assessment Anchor: M03.B-O.3
Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Eligible Content: M03.B-O.3.1.5
Identify arithmetic patterns (including patterns in the addition table or multiplication table) and/or explain them using properties of operations.
Example 1: Observe that 4 times a number is always even.
Example 2: Explain why 6 times a number can be decomposed into three equal addends.

Alternate Eligible Content
M03BO3.1.5b Identify the 3 next terms in a mathematical pattern (increasing by 2, 5 or 10)

Task Specifications	
Students will choose the next 3 elements in an ascending mathematical pattern	
Tier Guidelines	
Tier 1	Tier 2
No additional limitations beyond tier descriptions.	No additional limitations beyond tier descriptions.

Reporting Category: M03.C-G Geometry

Assessment Anchor: M03.C-G.1
Reason with shapes and their attributes.

Eligible Content: M03.C-G.1.1.1
Explain that shapes in different categories may share attributes and that the shared attributes can define a larger category.
Example 1: A rhombus and a rectangle are both quadrilaterals since they both have exactly four sides.
Example 2: A triangle and a pentagon are both polygons since they are both multi-sided plane figures.

Alternate Eligible Content
M03CG1.1.1a Identify similarities between two polygons

Task Specifications
Students will match two-dimensional shapes

Tier Guidelines	
Tier 1	Tier 2
Given a model, students will match shapes. Limited to triangles, rectangles, and circles.	Limited to shapes with no more than 5 sides. May be asked to identify groups of shapes.

Reporting Category: M03.C-G Geometry

Assessment Anchor: M03.C-G.1
Reason with shapes and their attributes.

Eligible Content: M03.C-G.1.1.3
Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.
Example 1: Partition a shape into 4 parts with equal areas.
Example 2: Describe the area of each of 8 equal parts as 1/8 of the area of the shape.

Alternate Eligible Content
M03CG1.1.3a Partition a rectangle into parts with equal areas

Task Specifications
Students will select the rectangle that is partitioned equally

Tier Guidelines	
Tier 1	Tier 2
Limited to 2 equal parts	Limited to 2, 3, or 4 equal parts

Reporting Category: M03.D-M Measurement and Data

Assessment Anchor: M03.D-M.1

Solve problems involving measurement and estimation of intervals of time, money, liquid volumes, masses, and lengths of objects.

Eligible Content: M03.D-M.1.1.1

Tell, show, and/or write time (analog) to the nearest minute.

Alternate Eligible Content
M03DM1.1.1a Tell time to the hour or half hour on a clock

Task Specifications
Students will tell time on a clock

Tier Guidelines	
Tier 1	Tier 2
Limited to digital clocks and hours only	No additional limitations

Reporting Category: M03.D-M Measurement and Data

Assessment Anchor: M03.D-M.1

Solve problems involving measurement and estimation of intervals of time, money, liquid volumes, masses, and lengths of objects.

Eligible Content: M03.D-M.1.2.1

Measure and estimate liquid volumes and masses of objects using standard units (cups [c], pints [pt], quarts [qt], gallons [gal], ounces [oz.], and pounds [lb]) and metric units (liters [l], grams [g],and kilograms [kg]).

Alternate Eligible Content
M03DM1.2.1a Identify and use the appropriate measurement tool based on the situation

Task Specifications
Students will identify the measurement tool to be used for a given real world problem

Tier Guidelines	
Tier 1	Tier 2
Limited to choices between a tool needed for the task and two tools that would not be used.	May be asked to differentiate from similar tools for a single task.

Reporting Category: M03.D-M Measurement and Data

Assessment Anchor: M03.D-M.1
Solve problems involving measurement and estimation of intervals of time, money, liquid volumes, masses, and lengths of objects.

Eligible Content: M03.D-M.1.2.3
Use a ruler to measure lengths to the nearest quarter inch or centimeter.

Alternate Eligible Content
M03DM1.2.3a Use a ruler and measure to the nearest inch (exact measurement)

Task Specifications
Student will use a ruler to measure an object to the nearest inch

Tier Guidelines	
Tier 1	Tier 2
Length should be ≤ 3in.	Length should be ≤ 5in.

Reporting Category: M03.D-M Measurement and Data

Assessment Anchor: M03.D-M.1
Solve problems involving measurement and estimation of intervals of time, money, liquid volumes, masses, and lengths of objects.

Eligible Content: M03.D-M.1.3.1
Compare total values of combinations of coins (penny, nickel, dime, and quarter) and/or dollar bills less than $5.00.

Alternate Eligible Content
M03DM1.3.1a Count money using coins or one- dollar bills

Task Specifications
Students will count either coins or one-dollar bills

Tier Guidelines	
Tier 1	Tier 2
Limited to pennies and one-dollar bills present in the representation or matching same representations.	No additional limitations

Reporting Category: M03.D-M Measurement and Data

Assessment Anchor: M03.D-M.2

Represent and interpret data.

Eligible Content: M03.D-M.2.1.1

Complete a scaled pictograph and a scaled bar graph to represent a data set with several categories (scales limited to 1, 2, 5, and 10).

Alternate Eligible Content
M03DM2.1.1a Add information to a pictograph, line plot, or bar graph

Task Specifications
Complete a pictograph, line plot, or bar graph that matches data presented in a table or a math story

Tier Guidelines	
Tier 1	Tier 2
Limited to data presented in a math story and values ≤ 3. Answer choices must be different quantities of the same element.	Data can presented in a table or in a story but values are limited to ≤ 5

Reporting Category: M03.D-M Measurement and Data

Assessment Anchor: M03.D-M.3

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

Eligible Content: M03.D-M.3.1.2

Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.

Alternate Eligible Content
M03DM3.1.2a Measure the area of a rectangle by counting squares, tiling, or addition

Task Specifications
Students will recognize that area is the space inside a given rectangle.

Tier Guidelines	
Tier 1	Tier 2
Limited to demonstrating the space inside the rectangle is area.	Area is limited to ≤ 10in^2.

Reporting Category: M03.D-M Measurement and Data

Assessment Anchor: M03.D-M.4
Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

Eligible Content: M03.D-M.4.1.1
Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, exhibiting rectangles with the same perimeter and different areas, and exhibiting rectangles with the same area and different perimeters. Use the same units throughout the problem.

Alternate Eligible Content
M03DM4.1.1a Find the perimeter of a rectangle

Task Specifications
Students will identify the perimeter of a rectangle as the space around the outside.

Tier Guidelines	
Tier 1	Tier 2
Limited to demonstrating the space outside the rectangle is perimeter. No calculations.	Limited to determining the number of sides that must be added together to determine perimeter.

Grade 4

Reporting Category: M04.A-T Numbers and Operations in Base Ten

Assessment Anchor: M04.A-T.1
Generalize place-value understanding for multi-digit whole numbers.

Eligible Content: M04.A-T.1.1.1
Demonstrate an understanding that in a multi-digit whole number (through 1,000,000), a digit in one place represents ten times what it represents in the place to its right.
Example: Recognize that in the number 770, the 7 in the hundreds place is ten times the 7 in the tens place.

Alternate Eligible Content
M04AT1.1.1a Model relationships between adjacent digits in a multi-digit whole number

Task Specifications	
Students will	
Tier Guidelines	
Tier 1	Tier 2

Commented [DM2]: Any ideas?

Reporting Category: M04.A-T Numbers and Operations in Base Ten

Assessment Anchor: M04.A-T.1

Generalize place-value understanding for multi-digit whole numbers.

Eligible Content: M04.A-T.1.1.1

Compare two multi-digit numbers through 1,000,000 based on meanings of the digits in each place, using >, =, and < symbols.

Alternate Eligible Content
M04AT1.1.3a Compare to determine if a value is greater than, less than, or equal to another value

Task Specifications	
Student will compare whole numbers to determine which is greater than, less than, or the same as.	
Tier Guidelines	
Tier 1	Tier 2
Compare two quantities, select the largest/smallest quantities, identify quantities that are the same.	No additional limitations.

Reporting Category: M04.A-T Numbers and Operations in Base Ten

Assessment Anchor: M04.A-T.2

Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Eligible Content: M04.A-T.2.1.1

Add and subtract multi-digit whole numbers (limit sums and subtrahends up to and including 1,000,000).

Alternate Eligible Content
M04AT2.1.1a Add or subtract whole numbers with sums and differences <1000

Task Specifications	
Students will add or subtract whole numbers.	
Tier Guidelines	
Tier 1	Tier 2
Limited to quantities ≤ 20	Limited to 2-digit numbers ≤ 50

Reporting Category: M04.A-T Numbers and Operations in Base Ten

Assessment Anchor: M04.A-T.2

Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Eligible Content: M04.A-T.2.1.2

Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two-digit numbers.

Alternate Eligible Content
M04AT2.1.2a Demonstrate understanding of multiplication or division with small sets

Task Specifications	
Students will perform multiplication as repeated addition.	
Tier Guidelines	
Tier 1	Tier 2
Limited to 2-3 sets of quantities with products ≤ 20	Limited to 5 sets with products ≤ 50. Arrays will be used as representations

Reporting Category: M04.A-T Numbers and Operations in Base Ten

Assessment Anchor: M04.A-T.2

Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Eligible Content: M04.A-T.2.1.4

Estimate the answer to addition, subtraction, and multiplication problems using whole numbers through six digits (for multiplication, no more than 2 digits × 1 digit, excluding powers of 10).

Alternate Eligible Content
M04AT2.1.4a Assess the plausibility of results from addition or subtraction

Commented [DM3]: Any ideas or samples?

Task Specifications	
Tier Guidelines	
Tier 1	Tier 2

Reporting Category: M04.A-F Numbers and Operations—Fractions

Assessment Anchor: M04.A-F.1
Extend understanding of fraction equivalence and ordering.

Eligible Content: M04.A-F.1.1.1
Recognize and generate equivalent fractions.

Alternate Eligible Content
M04AF1.1.1a Identify equivalent fractions

Task Specifications
Students will match a unit fraction with its unsimplified equivalent

Tier Guidelines	
Tier 1	Tier 2
Denominators limited to 2, 3, 4, and 6	Denominators limited to 3, 4, 5, 6, 8 and 10

Reporting Category: M04.A-F Numbers and Operations—Fractions

Assessment Anchor: M04.A-F.1
Extend understanding of fraction equivalence and ordering.

Eligible Content: M04.A-F.1.1.2
Compare two fractions with different numerators and different denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100) using the symbols >, =, or < and justify the conclusions.

Alternate Eligible Content
M04AF1.1.2a Compare two fractions with like denominators

Task Specifications
Students will compare two fractions will like denominators to determine which is greater than, less than, or the same as.

Tier Guidelines	
Tier 1	Tier 2
Limited to comparing fractions, not using symbols, with denominators ≤ 6.	Can use symbols with picture support. Denominators ≤ 10.

Reporting Category: M04.A-F Numbers and Operations—Fractions

Assessment Anchor: M04.A-F.2
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Eligible Content: M04.A-F.2.1.1
Add and subtract fractions with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; answers do not need to be simplified; and no improper fractions as the final answer).

Alternate Eligible Content
M04AF2.1.1a Add or subtract fractions with common denominators (denominators limited to 2, 3, 4, or 8)

Task Specifications	
Students will add or subtract 2 fractions with like denominators.	
Tier Guidelines	
Tier 1	Tier 2
Limited to addition with denominators <= 4	Can be addition or subtraction with denominators <= 8.

Reporting Category: M04.A-F Numbers and Operations—Fractions

Assessment Anchor: M04.A-F.2
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Eligible Content: M04.A-F.2.1.2
Decompose a fraction or a mixed number into a sum of fractions with the same denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100), recording the decomposition by an equation. Justify decompositions (e.g., by using a visual fraction model).
Example 1: $3/8 = 1/8 + 1/8 + 1/8$ OR $3/8 = 1/8 + 2/8$
Example 2: $2\ 1/12 = 1 + 1 + 1/12 = 12/12 + 12/12 + 1/12$

Alternate Eligible Content
M04AF.2.1.2a Decompose a proper fraction into multiple copies of a unit fraction (denominators limited to 3, 4, or 8)

Task Specifications	
Students will decompose a proper fraction into multiple copies	
Tier Guidelines	
Tier	Tier 2
Limited to choosing the missing copy of a unit fraction with denominators <= 4	Limited to denominators <= 8

Reporting Category: M04.A-F Numbers and Operations—Fractions

Assessment Anchor: M04.A-F.3
Understand decimal notation for fractions and compare decimal fractions.

Eligible Content: M04.A-F.3.1.2
Use decimal notation for fractions with denominators 10 or 100.
Example: Rewrite 0.62 as 62/100 and vice versa.

Alternate Eligible Content
M04AF3.1.2a Identify equivalent values in decimal or fraction form (limited to denominator of 10)

Task Specifications	
Students will identify an equivalent value in decimal or fraction form using denominator of 10.	
Tier Guidelines	
Tier 1	Tier 2

Commented [DM4]: Presentation will be different between tier 1 and 2

Reporting Category: M04.B-O Operations and Algebraic Thinking

Assessment Anchor: M04.B-O.1

Use the four operations with whole numbers to solve problems.

Eligible Content: M04. B-O.1.1.2

Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison.

Example: Know that 3 × 4 can be used to represent that Student A has 4 objects and Student B has 3 times as many objects not just 3 more objects.

Alternate Eligible Content
M04BO1.1.2a Use a model to solve a real-world multiplication problem

Task Specifications	
Students will match a multiplication model representing a real-world setting.	
Tier Guidelines	
Tier 1	Tier 2
Limited to 2 or 3 sets of quantities with products < 20	Limited to 2 - 5 sets with products < 50

Reporting Category: M04.B-O Operations and Algebraic Thinking

Assessment Anchor: M04.B-O.1

Use the four operations with whole numbers to solve problems.

Eligible Content: M04. B-O.1.1.3

Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity.

Alternate Eligible Content
M04BO1.1.3a Solve a real-world problem with one or more steps using addition or subtraction

Task Specifications	
Students will solve a real-world problem using addition or subtraction	
Tier Guidelines	
Tier 1	Tier 2
Limited to addition of 2 quantities ≤ 20 involving one step	Can be addition or subtraction with 2-digit numbers ≤ 50 and can involve more than 1 step

Reporting Category: M04.B-O Operations and Algebraic Thinking

Assessment Anchor: M04.B-O.2
Gain familiarity with factors and multiples.

Eligible Content: M04. B-O.2.1.1
Find all factor pairs for a whole number in the interval 1 through 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the interval 1 through 100 is a multiple of a given one digit number. Determine whether a given whole number in the interval 1 through 100 is prime or composite.

Alternate Eligible Content
M04BO2.1.1a Identify the multiples of 5 to 100 and 10 to 100 (e.g., count money)

Task Specifications	
Students will count by 5s or 10s.	
Tier Guidelines	
Tier 1	Tier 2
Limited to selecting the next quantity in a sequence of 10s.	Limited to counting by 5s to 20 or by 10s to 50.

Reporting Category: M04.B-O Operations and Algebraic Thinking

Assessment Anchor: M04.B-O.3
Generate and analyze patterns.

Eligible Content: M04. B-O.3.1.1
Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.
Example 1: Given the rule "add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms alternate between odd and even numbers.
Example 2: Given the rule "increase the number of sides by 1" and starting with a triangle, observe that the tops of the shapes alternate between a side and a vertex.

Alternate Eligible Content
M04BO3.1.1a Extend a pattern when shown a model and told the rule

Task Specifications	
Students will extend a mathematical pattern when given the rule.	
Tier Guidelines	
Tier 1	Tier 2
Limited to +1, +2, or +5	Limited to +/- 1, 2, or 5. Can be a numeric pattern.

Reporting Category: M04.C-G Geometry

Assessment Anchor: M04.C-G.1
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Eligible Content: M04. C-G.1.1.2
Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.

Alternate Eligible Content
M04CG1.1.2a Classify two-dimensional shapes based on attributes

Task Specifications	
Students will identify similar shapes.	
Tier Guidelines	
Tier 1	Tier 2
Limited to shapes with no more than 4 sides.	Limited to shapes with no more than 8 sides.

Reporting Category: M04.C-G Geometry

Assessment Anchor: M04.C-G.1
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Eligible Content: M04. C-G.1.1.3
Recognize a line of symmetry for a two dimensional figure as a line across the figure such that the figure can be folded along the line into mirroring parts. Identify line-symmetric figures and draw lines of symmetry (up to two lines of symmetry).

Alternate Eligible Content
M04CG1.1.3a Recognize a line of symmetry in a two-dimensional figure

Task Specifications	
Students will identify a line of symmetry in a 2-dimensional shape.	
Tier Guidelines	
Tier 1	Tier 2
Limited to squares, rectangles, and circles.	Shapes will be polygons and circles.

Reporting Category: M04.D-M Measurement and Data

Assessment Anchor: M04.D-M.1
Solve problems involving measurement and conversion of measurements from a larger unit to
a smaller unit.

Eligible Content: M04.D-M.1.1.1
Know relative sizes of measurement units within one system of units including standard units (in.,
ft, yd, mi; oz., lb; and c, pt, qt, gal), metric units (cm, m, km; g, kg; and mL, L), and time (sec,
min, hr, day, wk, mo, and yr). Within a single system of measurement, express measurements in a
larger unit in terms of a smaller unit. A table of equivalencies will be provided.
Example 1: Know that 1 kg is 1,000 times as heavy as 1 g.
Example 2: Express the length of a 4-foot snake as 48 in.

Alternate Eligible Content
M04DM1.1.1a Identify the appropriate unit of measurement in a real-world problem

Task Specifications
Student will identify the appropriate unit for measuring an object given a real-world context

Tier Guidelines	
Tier 1	Tier 2
Distractors are limited to be tools used to represent the measurement of length (ruler), volume (measuring cup), and weight (scale).	Distractors can be different units of measure for the same category (length, volume, weight). Picture support will be used for measurements (e.g., milk jug for gallon)

Reporting Category: M04.D-M Measurement and Data

Assessment Anchor: M04.D-M.1
Solve problems involving measurement and conversion of measurements from a larger unit to
a smaller unit.

Eligible Content: M04.D-M.1.1.3
Apply the area and perimeter formulas for rectangles in real-world and mathematical problems
(may include finding a missing side length). Whole numbers only. The formulas will be provided.

Alternate Eligible Content
M04DM1.1.3a Identify the area or perimeter of a rectangle

Task Specifications
Identify the area or perimeter of a rectangle.

Tier Guidelines	
Tier 1	Tier 2
Limited to quantities ≤ 10 by counting tiles for area only.	Limited to quantities ≤ 20. Can be asked to calculate area or perimeter.

Commented [DM5]: This is stepped up from grade 3 by asking for the actual perimeter or area?

Reporting Category: M04.D-M Measurement and Data

Assessment Anchor: M04.D-M.2
Represent and interpret data.

Eligible Content: M04.D-M.2.1.1
Make a line plot to display a data set of measurements in fractions of a unit (e.g., intervals of 1/2, 1/4, or 1/8).

Alternate Eligible Content
M04DM2.1.1a Organize data into a pictograph, line plot, or bar graph

Task Specifications
Select a pictograph, line plot or bar graph that matches a data set.

Tier Guidelines	
Tier 1	Tier 2
Limited to ≤ 3 data points.	Limited to ≤ 5 data points.

Commented [DM6]: Does this need to be limited further by graph choice between tiers?

Reporting Category: M04.D-M Measurement and Data

Assessment Anchor: M04.D-M.2
Represent and interpret data.

Eligible Content: M04.D-M.2.1.1
Solve problems involving addition and subtraction of fractions by using information presented in line plots (line plots must be labeled with common denominators, such as 1/4, 2/4, 3/4).

Alternate Eligible Content
M04DM2.1.2a Answer a question about data in a pictograph, line plot, or bar graph

Task Specifications
Students will answer a literal question about information presented in a pictograph, line plot, or graph.

Tier Guidelines	
Tier 1	Tier 2
Limited to pictographs and bar graphs with values ≤ 5 with scales in increments of 1 unit	Limited to values ≤ 10 with scales in increments of 1, 2 or 5 units.

Grade 5

Reporting Category: M05.A-T Numbers and Operations in Base Ten

Assessment Anchor: M05.A-T.1.1

Understand the place-value system.

Eligible Content: M05.A-T.1.1.1

Demonstrate an understanding that in a multi-digit number, a digit in one place represents 1/10 of what it represents in the place to its left.

Example: Recognize that in the number 770, the 7 in the tens place is 1/10 the 7 in the hundreds place.

Alternate Eligible Content
M05AT1.1.1a Identify place value in a 3-digit number using models

Task Specifications
Students will identify place value in a 2- or 3-digit number.

Tier Guidelines	
Tier 1	Tier 2
Limited to ones and tens place in a 2-digit number.	Can be asked to identify ones, tens, or hundreds place in a 2- or 3-digit number

Reporting Category: M05.A-T Numbers and Operations in Base Ten

Assessment Anchor: M05.A-T.1.1
Understand the place-value system.

Eligible Content: M05.A-T.1.1.2
Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
Example 1: $4 \times 10^2 = 400$
Example 2: $0.05 \div 10^3 = 0.00005$

Alternate Eligible Content
M05AT1.1.2a Identify a pattern and change in place value when a number up to 99 is multiplied by powers of 10

Task Specifications
Students will identify the pattern of exponents in powers of 10 or the change in place value.

Tier Guidelines	
Tier 1	Tier 2
Choose the next number in the pattern of powers of 10.	Can be asked to choose the next power of 10 that completes the pattern.

Reporting Category: M05.A-T Numbers and Operations in Base Ten

Assessment Anchor: M05.A-T.1.1
Understand the place-value system.

Eligible Content: M05.A-T.1.1.4
Compare two decimals to thousandths based on meanings of the digits in each place using >, =, and < symbols.

Alternate Eligible Content
M05AT1.1.4a Compare two numbers up to the hundredths place

Task Specifications
Students will compare relative values of decimals.

Tier Guidelines	
Tier 1	Tier 2
Limited to comparing tenths place with or without symbols.	Can be asked to compare tenths or hundredths place with or without symbols.

Reporting Category: M05.A-T Numbers and Operations in Base Ten

Assessment Anchor: M05.A-T.1

Understand the place-value system.

Eligible Content: M05.A-T.1.1.5
Round decimals to any place (limit rounding to ones, tenths, hundredths, or thousandths place).

Alternate Eligible Content
M05AT1.1.5a Round a decimal from the tenths place to the nearest whole number

Task Specifications
Students will find the nearest whole number given a decimal in the tenths place.

Tier Guidelines	
Tier 1	Tier 2
Limited to finding the nearest whole number that is larger than the decimal (rounding up).	Can be asked to find the nearest whole number that is above or below the decimal (rounding up or down).

Reporting Category: M05.A-T Numbers and Operations in Base Ten

Assessment Anchor: M05.A-T.2.1
Perform operations with multi-digit whole numbers and with decimals to hundredths.

Eligible Content: M05.A-T.2.1.1
Multiply multi-digit whole numbers (not to exceed three-digit by three-digit).

Alternate Eligible Content
M05AT2.1.1a Multiply single-digit whole numbers

Task Specifications
Students will multiply two single digit whole numbers.

Tier Guidelines	
Tier 1	Tier 2
Limited to multiplication by 1, 2 or 5 with products ≤ 20 using models.	Limited to multiplication by 1 to 9 with products ≤ 50 using models.

Reporting Category: M05.A-T Numbers and Operations in Base Ten

Assessment Anchor: M05.A-T.2.1
Perform operations with multi-digit whole numbers and with decimals to hundredths.

Eligible Content: M05.A-T.2.1.2

Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.

Alternate Eligible Content
M05AT2.1.2a Illustrate the concept of division using fair and equal shares

Task Specifications
Students will group numbers without remainders into sets of the same size.

Tier Guidelines	
Tier 1	Tier 2
Limited to 2 or 3 sets of objects totaling ≤ 10.	Limited to 2-5 sets of objects totaling ≤ 20.

Reporting Category: M05.A-T Numbers and Operations in Base Ten

Assessment Anchor: M05.A-T.2.1

Perform operations with multi-digit whole numbers and with decimals to hundredths.

Eligible Content: M05.A-T.2.1.3

Add, subtract, multiply, and divide decimals to hundredths (no divisors with decimals).

Alternate Eligible Content
M05AT2.1.3a Add or subtract decimals to the tenths place

Task Specifications
Students will add or subtract two decimals to the tenths place.

Tier Guidelines	
Tier 1	Tier 2
Limited to addition of two decimals.	Can be addition or subtraction of two decimals.

Reporting Category: M05.A-F Numbers and Operations—Fractions

Assessment Anchor: M05.A-F.1.1

Use equivalent fractions as a strategy to add and subtract fractions.

Eligible Content: M05.A-F.1.1.1

Add and subtract fractions (including mixed numbers) with unlike denominators. (May include multiple methods and representations.)
Example: 2/3 + 5/4 = 8/12 + 15/12 = 23/12

Alternate Eligible Content
M05AF1.1.1a Add or subtract proper fractions with common denominators to solve a real-world problem

Task Specifications
Students will add or subtract fractions with common denominators in a real-world context.

Tier Guidelines	
Tier 1	Tier 2
Addition limited to 2 fractions with denominators of 2-10; subtraction limited to 2 fractions with denominators of 3 or 4.	Limited to addition or subtraction of 2 fractions with denominators of 2-10.

Reporting Category: M05.A-F Numbers and Operations—Fractions

Assessment Anchor: M05.A-F.2.1
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Eligible Content: M05.A-F.2.1.2
Multiply a fraction (including mixed numbers) by a fraction.

Alternate Eligible Content
M05AF2.1.2a Multiply a fraction by a whole number less than 10

Task Specifications
Students will multiply a whole number less than 10 times a fraction that results in a proper fraction.

Tier Guidelines	
Tier 1	Tier 2
Limited to choosing the numerator of the fraction.	No additional limitations.

Reporting Category: M05.B-O Operations and Algebraic Thinking

Assessment Anchor: M05.B-O.2.1
Analyze patterns and relationships.

Eligible Content: M05.B-O.2.1.1

Generate two numerical patterns using two given rules.
Example: Given the rule "add 3" and the starting number 0 and given the rule "add 6" and the starting number 0, generate terms in the resulting sequences.

Alternate Eligible Content
M05BO2.1.1a Identify and extend numeric patterns

Task Specifications
Students will identify the rule used to extend numeric patterns.

Tier Guidelines	
Tier 1	Tier 2
Addition limited to 2, 5, or 10. Subtraction limited to 1.	Addition rules limited to 1-10, but subtraction rules limited to 2, 5, 10

Reporting Category: M05.B-O Operations and Algebraic Thinking

Assessment Anchor: M05.B-O.2.1

Analyze patterns and relationships.

Eligible Content: M05.B-O.2.1.1

Generate two numerical patterns using two given rules.
Example: Given the rule "add 3" and the starting number 0 and given the rule "add 6" and the starting number 0, generate terms in the resulting sequences.

Alternate Eligible Content
M05BO2.1.1b Generate a pattern that follows 1 or more rules provided

Task Specifications
Students will be given a rule and asked to generate a pattern.

Tier Guidelines	
Tier 1	Tier 2
Choose the representation that follows the rule given.	Choose the numeric pattern that follows the rule given.

Reporting Category: M05.C-G Geometry

Assessment Anchor: M05.C-G.1.1

Graph points on the coordinate plane to solve real-world and mathematical problems.

Eligible Content: M05.C-G.1.1.1

Identify parts of the coordinate plane (x-axis, y-axis, and the origin) and the ordered pair (x-coordinate and y-coordinate). Limit the coordinate plane to quadrant I.

Alternate Eligible Content
M05CG1.1.1a Identify an ordered pair (x,y) in quadrant I

Task Specifications	
Students will identify the x and y coordinate for a point in quadrant I.	
Tier Guidelines	
Tier 1	Tier 2
Limited to finding the x coordinate or the y coordinate, but not both. Axes are limited to 5 with increments of 1.	No additional limitations. Axes are limited to 10 with increments of 1 or 2.

Reporting Category: M05.C-G Geometry

Assessment Anchor: M05.C-G.1.1

Graph points on the coordinate plane to solve real-world and mathematical problems.

Eligible Content: M05.C-G.1.1.2

Represent real-world and mathematical problems by plotting points in quadrant I of the coordinate plane and interpret coordinate values of points in the context of the situation.

Alternate Eligible Content
M05CG1.1.2a Graph an ordered pair (x,y) in quadrant I

Task Specifications	
Given an ordered pair, students will identify that point on a graph.	
Tier Guidelines	
Tier 1	Tier 2
Axes are limited to 5 with increments of 1.	Axes are limited to 10 with increments of 1 or 2.

Reporting Category: M05.C-G Geometry

Assessment Anchor: M05.C-G.2.1

Classify two-dimensional figures into categories based on their properties.

Eligible Content: M05.C-G.2.1.1

Classify two-dimensional figures in a hierarchy based on properties. Example 1: All polygons have at least three sides, and pentagons are polygons, so all pentagons have at least three sides. Example 2: A rectangle is a parallelogram, which is a quadrilateral, which is a polygon; so, a rectangle can be classified as a parallelogram, as a quadrilateral, and as a polygon.

Alternate Eligible Content
M05CG2.1.1a Identify a two-dimensional figure with specific attributes

Task Specifications	
Students will identify a 2-dimensional shape with specific attributes.	
Tier Guidelines	
Tier 1	Tier 2
Limited to shapes with no more than 5 sides.	Limited to shapes with no more than 8 sides.

Reporting Category: M05.D-M Measurement and Data

Assessment Anchor: M05.D-M.1.1
Convert like measurement units within a given measurement system.

Eligible Content: M05.D-M.1.1.1
Convert between different-sized measurement units within a given measurement system. A table of equivalencies will be provided.
Example: Convert 5 cm to meters.

Alternate Eligible Content
M05DM1.1.1a Use a conversion table to identify equivalent standard measurements of length or mass

Task Specifications	
Students will use a conversion table to identify equivalent standard measurements of length or weight.	
Tier Guidelines	
Tier 1	Tier 2

Reporting Category: M05.D-M Measurement and Data

Assessment Anchor: M05.D-M.2.1
Represent and interpret data.

Eligible Content: M05.D-M.2.1.2
Display and interpret data shown in tallies, tables, charts, pictographs, bar graphs, and line graphs,

and use a title, appropriate scale, and labels. A grid will be provided to display data on bar graphs or line graphs.

Alternate Eligible Content
M05DM2.1.2a Interpret one set of data given in 2 different displays

Task Specifications
Students will match two graphic representations displaying the same data.

Tier Guidelines	
Tier 1	Tier 2
Limited to ≤ 3 data points	Limited to ≤ 5 data points

Reporting Category: M05.D-M Measurement and Data

Assessment Anchor: M05.D-M.3.1
Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

Eligible Content: M05.D-M.3.1.2
Find volumes of solid figures composed of two non-overlapping right rectangular prisms.

Alternate Eligible Content
M05DM3.1.2a Find volume by using filling or multiplication

Task Specifications
Students will determine the volume of a box by counting cubes.

Tier Guidelines	
Tier 1	Tier 2
An exact number of cubes will be given to students.	The students will be given more cubes than needed to fill the box.

Grade 6

Reporting Category: M06.A-N The Number System

Assessment Anchor: M06.A-N.2.1

Compute with multi-digit numbers and find common factors and multiples.

Eligible Content: M06.A-N.2.1.1

Solve problems involving operations (+, –, ×, and ÷) with whole numbers, decimals (through thousandths), straight computation, or word problems.

Alternate Eligible Content
M06AN2.1.1a Solve a problem using up to 3-digit whole numbers and any of the four operations

Task Specifications	
Students will solve problems using whole numbers and any of the 4 operations.	
Tier Guidelines	
Tier 1	Tier 2
Limited to 2-digit whole numbers for addition and subtraction and numbers that do not require regrouping. Limited to single digit numbers for multiplication.	Limited to 3-digit numbers for addition and subtraction with or without regrouping. Limited to single digit numbers for multiplication.

Reporting Category: M06.A-N The Number System

Assessment Anchor: M06.A-N.2.1

Compute with multi-digit numbers and find common factors and multiples.

Eligible Content: M06.A-N.2.2.1

Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12.

Alternate Eligible Content
M06AN2.2.1a Identify multiples for numbers 5, 10, 25, or 100

Task Specifications	
Students will count by 5s, 10s, 25s, or 100s.	
Tier Guidelines	
Tier 1	Tier 2
Limited to selecting the next quantity in a sequence of 5s or 10s.	Limited to determining the missing quantity in a sequence using any of the multiples.

Reporting Category: M06.A-N The Number System

Assessment Anchor: M06.A-N.3.1

Apply and extend previous understandings of numbers to the system of rational numbers.

Eligible Content: M06.A-N.3.1.1

Represent quantities in real-world contexts using positive and negative numbers, explaining the meaning of 0 in each situation (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge).

Alternate Eligible Content
M06AN3.1.1a Identify a specific integer in a real-world context

Task Specifications
Students will identify the positive or negative number that corresponds to a real-world context.

Tier Guidelines	
Tier 1	Tier 2
Limited to a number line that spans -5 to +5.	Limited to a number line that spans from -10 to +10.

Reporting Category: M06.A-N The Number System

Assessment Anchor: M06.A-N.3.1
Apply and extend previous understandings of numbers to the system of rational numbers.

Eligible Content: M06.A-N.3.1.2
Determine the opposite of a number and recognize that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$; 0 is its own opposite).

Alternate Eligible Content
M06AN3.1.2a Identify the opposite of a number on the number line

Task Specifications
Students will identify the opposite of a whole number using a number line.

Tier Guidelines	
Tier 1	Tier 2
Limited to a number line that spans -5 to +5.	Limited to a number line that spans from -10 to +10.

Reporting Category: M06.A-N The Number System

Assessment Anchor: M06.A-N.3.1

Apply and extend previous understandings of numbers to the system of rational numbers.

Eligible Content: M06.A-N.3.1.3

Locate and plot integers and other rational numbers on a horizontal or vertical number line; locate and plot pairs of integers and other rational numbers on a coordinate plane.

Alternate Eligible Content
M06AN3.1.3a Locate positive and negative numbers on the number line

Task Specifications	
Students will locate positive and negative whole numbers on a number line.	
Tier Guidelines	
Tier 1	Tier 2
Limited to a number line that spans -5 to +5.	Limited to a number line that spans -10 to +10.

Reporting Category: M06.A-N The Number System

Assessment Anchor: M06.A-N.3.2

Apply and extend previous understandings of numbers to the system of rational numbers.

Eligible Content: M06.A-N.3.2.3

Solve real-world and mathematical problems by plotting points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Alternate Eligible Content
M06AN3.2.3a Identify points in all four quadrants of the coordinate plane

Task Specifications	
Students will identify the relationship between the x- and y-coordinate in an ordered pair in any of the 4 quadrants.	
Tier Guidelines	
Tier 1	Tier 2
Limited to quadrants I and III (pos/pos and neg/neg)	No additional limitations

Reporting Category: M06.A-R Ratios and Proportional Relationships

Assessment Anchor: M06.A-R.1.1

Understand ratio concepts and use ratio reasoning to solve problems.

Eligible Content: M06.A-R.1.1.2

Find the unit rate a/b associated with a ratio a:b (with b ≠ 0) and use rate language in the context of a ratio relationship.
Example 1: "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar."
Example 2: "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."

Alternate Eligible Content
M06AR1.1.2a Identify the ratio that matches a given statement and/or representation

Task Specifications
Students will identify the ratio that matches a given representation.

Tier Guidelines	
Tier 1	Tier 2
Limited to total number of objects ≤ 10. Representations should be organized into the two groups being compared. Students are not expected to reduce ratios to their simplest form.	Limited to total number of objects ≤ 15. Representations can be presented in two groups that are to be compared or as a single set of objects not yet grouped. Students are not expected to reduce ratios to their simplest form.

Reporting Category: M06.A-R Ratios and Proportional Relationships

Assessment Anchor: M06.A-R.1.1

Understand ratio concepts and use ratio reasoning to solve problems.

Eligible Content: M06.A-R.1.1.4

Solve unit rate problems including those involving unit pricing and constant speed.
Example: If it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

Alternate Eligible Content
M06AR1.1.4a Solve a 1-step real-world problem given the unit rate

Task Specifications
Students will use the unit rate to solve a 1-step real-world problem.

Tier Guidelines	
Tier 1	Tier 2
Limited to identifying the next value in the unit rate pattern. Presentation of data will be in a table.	Can be asked to identify any value in the unit rate pattern. Presentation of data will be in a table.

Reporting Category: M06.A-R Ratios and Proportional Relationships

Assessment Anchor: M06.A-R.1.1

Understand ratio concepts and use ratio reasoning to solve problems.

Eligible Content: M06.A-R.1.1.5

Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percentage.

Alternate Eligible Content
M06AR1.1.5a Calculate a percent of a quantity as a rate per 100

Task Specifications
Students will choose the fraction (denominator of 100) that represents a percent.

Tier Guidelines	
Tier 1	Tier 2
Limited to identifying the numerator.	

Commented [DM8]: Tier guidelines to be added later.

Reporting Category: M06.B-E Expressions and Equations

Assessment Anchor: M06.B-E.2.1
Interpret and solve one-variable equations and inequalities.

Eligible Content: M06.B-E.2.1.2
Write algebraic expressions to represent real-world or mathematical problems.

Alternate Eligible Content
M06BE2.1.2a Select an algebraic expression involving addition or subtraction of whole numbers to solve a 1-step real-world problem

Task Specifications
Students will select the algebraic expression that matches a given real-world problem.

Tier Guidelines	
Tier 1	Tier 2
Limited to completing an expression with 1 variable using addition only.	Limited to 1 variable, but will select the entire expression using addition or subtraction.

Reporting Category: M06.B-E Expressions and Equations

Assessment Anchor: M06.B-E.2.1
Interpret and solve one-variable equations and inequalities.

Eligible Content: M06.B-E.2.1.3
Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q, and x are all non-negative rational numbers.

Alternate Eligible Content
M06BE2.1.3a Use a 1-step algebraic expression to solve a real-world problem involving addition or subtraction of whole numbers

Commented [DM9]: How is this different from 2.1.2?

Task Specifications
Students will solve a 1-step algebraic expression using addition or subtraction in a real-world context.

Tier Guidelines	
Tier 1	Tier 2
	u

Commented [LL10]: Asking the student to solve an expression is different than having them use an expression to solve a problem. This task spec. is written to a higher level than the AEC. Grade 8 asks the student to SOLVE. This is grade 6 which is use an expression to solve a problem.

Deleted: sing a calculator

Reporting Category: M06.B-E Expressions and Equations

Assessment Anchor: M06.B-E.3.1
Represent and analyze quantitative relationships between dependent and independent variables.

Eligible Content: M06.B-E.3.1.1
Write an equation to express the relationship between the dependent and independent variables. Example: In a problem involving motion at a constant speed of 65 units, write the equation d = 65t to represent the relationship between distance and time.

Alternate Eligible Content
M06BE3.1.1a Identify the relationship between two variables in an equation

Task Specifications	
Students will identify the relationship between x and y using a table and pictorial representations.	
Tier Guidelines	
Tier 1	Tier 2
Choose the answer that shows the relationship between x and y as presented in the table. Table and answer choices in pictorial form.	Choose the answer that shows the relationship between x and y. May or may not use pictorial representations.

Reporting Category: M06.C-G Geometry

Assessment Anchor: M06.C-G.1.1
Solve real-world and mathematical problems involving area, surface area, and volume.

Eligible Content: M06.C-G.1.1.1
Determine the area of triangles and special quadrilaterals (i.e., square, rectangle, parallelogram, rhombus, and trapezoid). Formulas will be provided.

Alternate Eligible Content
M06CG1.1.1a Find the area of a quadrilateral given the dimensions

Task Specifications	
Students will calculate area of squares and rectangles using the dimensions.	
Tier Guidelines	
Tier 1	Tier 2
Length and width of rectangle will be presented with picture support (grid).	Formula will be given.

Reporting Category: M06.C-G Geometry

Assessment Anchor: M06.C-G.1.1

Solve real-world and mathematical problems involving area, surface area, and volume.

Eligible Content: M06.C-G.1.1.3

Determine the volume of right rectangular prisms with fractional edge lengths. Formulas will be provided.

Alternate Eligible Content
M06CG1.1.3a Solve a real-world problem involving volume using unit cubes or multiplication

Task Specifications
Students will determine the volume of a box using unit cubes or multiplication.

Tier Guidelines	
Tier 1	Tier 2
Choose the number of cubes needed to fill the box. Students will be given more cubes than needed to fill the box.	Use multiplication to find the volume of a box.

Reporting Category: M06.C-G Geometry

Assessment Anchor: M06.C-G.1.1

Solve real-world and mathematical problems involving area, surface area, and volume.

Eligible Content: M06.C-G.1.1.5

Represent three-dimensional figures using nets made of rectangles and triangles.

Alternate Eligible Content
M06CG1.1.5a Classify three-dimensional figures

Task Specifications
Students will identify the characteristics of 3-dimensional figures.

Tier Guidelines	
Tier 1	Tier 2
Limited to determining the shape of the faces and base of cubes, square pyramids, cones, and rectangular prisms	Limited to determining the shape of the faces and base of Tier 1 figures plus cylinders, triangular prisms, and hemispheres

Reporting Category: M06.D-S Statistics and Probability

Assessment Anchor: M06.D-S.1.1
Demonstrate understanding of statistical variability by summarizing and describing
distributions.

Eligible Content: M06.D-S.1.1.2
Determine quantitative measures of center (e.g., median, mean, mode) and variability (e.g., range,
interquartile range, mean absolute deviation).

Alternate Eligible Content
M06DS1.1.2a Identify measures of central tendency (mean, median, mode)

Task Specifications
Students will identify the central tendency of a dataset.

Tier Guidelines	
Tier 1	Tier 2
Limited to median and mode with 3 data points	Can be any of the measures of central tendency, but limited to ≤ 5 data points. Median limited to odd number of elements only.

Reporting Category: M06.D-S Statistics and Probability

Assessment Anchor: M06.D-S.1.1
Demonstrate understanding of statistical variability by summarizing and describing
distributions.

Eligible Content: M06.D-S.1.1.3
Describe any overall pattern and any deviations from the overall pattern with reference to the
context in which the data were gathered.

Alternate Eligible Content
M06DS1.1.3a Compare points in a line plot, histogram, or on a number line

Task Specifications
Students will compare and contrast the position of two points on a graph or number line.

Tier Guidelines	
Tier 1	Tier 2
Axes are limited to 5 with increments of 1. Limited to ≤ 3 data points.	Axes are limited to 10 with increments of 1 or 2. Limited to ≤ 5 data points

Grade 7

Reporting Category: M07.A-N The Number System

Assessment Anchor: M07.A-N.1.1
Apply and extend previous understandings of operations to add, subtract, multiply, and divide rational numbers.

Eligible Content: M07.A-N.1.1.1
Apply properties of operations to add and subtract rational numbers, including real-world contexts.

Alternate Eligible Content
M07AN1.1.1a Solve a 1-step addition or subtraction problem with fractions, decimals, or positive/negative integers

Task Specifications
Students will solve a 1-step addition or subtraction problem with fractions, decimals, or positive and negative integers.

Tier Guidelines	
Tier 1	Tier 2
Limited to fractions with common denominators of 2, 3, and 4. Integers are limited to the range of -5 to +5 and tasks involving negative integers should be addition only. Decimals are limited to tenths place.	Limited to fractions with common denominators of 2, 3, 4, 5 and 10. Integers are limited to the range of -10 to +10 and tasks involving negative integers should be addition only. Decimals limited to hundredths place.

Reporting Category: M07.A-N The Number System

Assessment Anchor: M07.A-N.1.1
Apply and extend previous understandings of operations to add, subtract, multiply, and divide rational numbers.

Eligible Content: M07.A-N.1.1.2
Represent addition and subtraction on a horizontal or vertical number line.

Alternate Eligible Content
M07AN1.1.2a Identify the difference between two numbers on the number line

Task Specifications
Students will find the distance between two numbers using a number line.

Tier Guidelines	
Tier 1	Tier 2
Limited to a number line that spans -3 to +3.	Limited to a number line that spans -5 to +5.

Reporting Category: M07.A-N The Number System

Assessment Anchor: M07.A-N.1.1
Apply and extend previous understandings of operations to add, subtract, multiply, and divide rational numbers.

Eligible Content: M07.A-N.1.1.3
Apply properties of operations to multiply and divide rational numbers, including real-world contexts; demonstrate that the decimal form of a rational number terminates or eventually repeats.

Alternate Eligible Content
M07AN1.1.3a Solve a multiplication or division problem with positive/negative rational numbers

Task Specifications	
Students will solve a 1-step multiplication or division problem involving positive or negative rational numbers.	
Tier Guidelines	
Tier 1	Tier 2
Limited to multiplication of positive numbers and fractions only.	Multiplication is not limited, but division is limited to positive whole numbers without remainders.

Reporting Category: M07. A-R Ratios and Proportional Relationships

Assessment Anchor: M07.A-R.1.1
Demonstrate an understanding of proportional relationships.

Eligible Content: M07.A-R.1.1.1
Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.
Example: If a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2 / 1/4 miles per hour, equivalently 2 miles per hour.

Alternate Eligible Content
M07AR1.1.1a Find the unit rate in a real-world problem

Task Specifications	
Students will identify the unit rate given a real-world context or math story.	
Tier Guidelines	
Tier 1	Tier 2
Identify the unit rate given in a table.	Identify the missing unit rate from a table.

Reporting Category: M07. A-R Ratios and Proportional Relationships

Assessment Anchor: M07.A-R.1.1
Demonstrate an understanding of proportional relationships.

Eligible Content: M07.A-R.1.1.3
Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

Alternate Eligible Content
M07AR1.1.3a Represent a proportional relationship on a line graph

Task Specifications	
Students will identify a relationship displayed on a graph as proportional or linear.	
Tier Guidelines	
Tier 1	Tier 2
Scale of the axes is limited to increments of 1. Origin must be visible and line should cross y-axes or origin.	Scale of the axes is limited to increments of 1 or 2. Origin must be visible and line should cross y-axes or origin.

Reporting Category: M07. A-R Ratios and Proportional Relationships

Assessment Anchor: M07.A-R.1.1
Demonstrate an understanding of proportional relationships.

Eligible Content: M07.A-R.1.1.5
Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r), where r is the unit rate.

Alternate Eligible Content
M07AR1.1.5a Interpret an ordered pair in a real-world problem

Task Specifications	
Students will answer a literal question based on a proportional relationship shown as a graph.	
Tier Guidelines	
Tier 1	Tier 2
Scale of the axes is limited to increments of 1 or 2.	Scale of the axes is limited to increments of 1, 2, or 5.

Reporting Category: M07. A-R Ratios and Proportional Relationships

Assessment Anchor: M07.A-R.1.1

Demonstrate an understanding of proportional relationships.

Eligible Content: M07.A-R.1.1.6

Use proportional relationships to solve multi-step ratio and percent problems.
Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease.

Alternate Eligible Content
M07AR1.1.6a Use percentages to solve a real-world problem

Task Specifications
Students will use percentages to solve a real-world problem.

Tier Guidelines	
Tier 1	Tier 2
Percentages are limited to 50%	Percentages are limited to 25%, and 50%

Reporting Category: M07.B-E Expressions and Equations

Assessment Anchor: M07.B-E.2.2

Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems.

Eligible Content: M07.B-E.2.2.1

Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers.
Example: The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

Alternate Eligible Content
M07BE2.2.1a Select an algebraic expression (equations or inequalities) using addition or subtraction of fractions, decimals, or positive/negative integers to solve a 1-step real-world problem

Task Specifications
Students will select an algebraic expression using addition or subtraction with fractions, decimals, or positive/negative numbers that will solve a 1-step real-world problem.

Tier Guidelines	
Tier 1	Tier 2
Limited to completing an expression with 1 variable using addition with fractions, decimals, and positive numbers.	No additional limitations

Reporting Category: M07.B-E Expressions and Equations

Assessment Anchor: M07.B-E.2.3

Determine the reasonableness of the answer(s) in problem- solving situations.

Eligible Content: M07.B-E.2.3.1

Determine the reasonableness of answer(s) or interpret the solution(s) in the context of the problem.

Example: If you want to place a towel bar that is 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.

Alternate Eligible Content
M07BE2.3.1a Identify a reasonable solution in the context of a problem using the four basic operations and numbers under 20

Task Specifications	
Students will identify a reasonable solution to a problem using any of the 4 operations.	
Tier Guidelines	
Tier 1	Tier 2
Limited to totals up to 10.	Limited to totals up to 20.

Reporting Category: M07.C-G Geometry

Assessment Anchor: M07.C-G.1.1

Describe and apply properties of geometric figures.

Eligible Content: M07.C-G.1.1.1

Solve problems involving scale drawings of geometric figures, including finding length and area.

Alternate Eligible Content
M07CG1.1.1a Solve a 1-step real-world problem related to scaling

Task Specifications	
Students will identify the object(s) that matches a specific scaling factor (size).	
Tier Guidelines	
Tier 1	Tier 2

Commented [LL12]: Intent: Use a model reduced in scale (size) to solve a real world problem (e.g., use model of room to figure out arrangement of furniture)

This could also be a map type of question.

Reporting Category: M07.C-G Geometry

Assessment Anchor: M07.C-G.1.1
Describe and apply properties of geometric figures.

Eligible Content: M07.C-G.1.1.2
Identify or describe the properties of all types of triangles based on angle and side measures.

Alternate Eligible Content
M07CG1.1.2a Identify the properties of a right triangle

Task Specifications
Students will identify parts of a right triangle.

Tier Guidelines	
Tier 1	Tier 2

> **Commented [DM13]:** What would the tier guidelines be for this one? How would they be different?

Reporting Category: M07.C-G Geometry

Assessment Anchor: M07.C-G.1.1
Describe and apply properties of geometric figures.

Eligible Content: M07.C-G.1.1.4
Describe the two-dimensional figures that result from slicing three-dimensional figures.
Example: Describe plane sections of right rectangular prisms and right rectangular pyramids.

Alternate Eligible Content
M07CG1.1.4a Identify a three-dimensional figure with specific attributes

Task Specifications
Students will identify a 3-dimensional figure given specific attributes.

Tier Guidelines	
Tier 1	Tier 2
Limited to determining number of faces for cones, cubes, square pyramid, and rectangular prisms	Limited to determining number of faces, edges, and vertices for Tier 1 figures plus cylinders, triangular prism, and hemisphere

Reporting Category: M07.C-G Geometry

Assessment Anchor: M07.C-G.2.1

Identify, use, and describe properties of angles and their measures.

Eligible Content: M07.C-G.2.1.1

Identify and use properties of supplementary, complementary and adjacent angles in a multi- step problem to write and solve simple equations for an unknown angle in a figure.

Alternate Eligible Content
M07CG2.1.1a Use angle relationships to find the missing angle

Task Specifications
Students will use angle relationships to identify the measure of a missing angle that forms a straight line.

Tier Guidelines	
Tier 1	Tier 2
Limited to angles ending in 0.	Limited to ending to angles in 5 and 0.

Commented [DM14]: Since the EC mentions complementary and adjacent angles can we do that for Tier 1?

Reporting Category: M07.C-G Geometry

Assessment Anchor: M07.C-G.2.2

Determine circumference, area, surface area, and volume

Eligible Content: M07.C-G.2.2.2

Solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. Formulas will be provided.

Alternate Eligible Content
M07CG2.2.2a Find the area or volume of a two- or three-dimensional object given the formula

Task Specifications
Students will calculate the area or volume of a figure given the formula.

Tier Guidelines	
Tier 1	Tier 2
Limited to area and volume ≤ 50	Limited to area or volume ≤ 100

Reporting Category: M07.D-S Statistics and Probability

Assessment Anchor: M07.D-S.2.1

Use statistical measures to compare two numerical data distributions.

Eligible Content: M07. D-S.2.1.1

Compare two numerical data distributions using measures of center and variability.
Example 1: The mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team. This difference is equal to approximately twice the variability (mean absolute deviation) on either team. On a line plot, note the difference between the two distributions of heights.
Example 2: Decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth- grade science book.

Alternate Eligible Content
M07DS2.1.1a Compare two sets of data within a single pictograph, line plot, or bar graph

Task Specifications	
Students will compare and contrast two sets of data presented in a single pictograph, line plot, or bar graph.	
Tier Guidelines	
Tier 1	Tier 2
Limited to 2-3 data points.	Limited to 4-5 data points.

<div style="background:#2196c4;color:white;padding:4px;font-weight:bold">Reporting Category: M07.D-S Statistics and Probability</div>

Assessment Anchor: M07.D-S.2.1

Use statistical measures to compare two numerical data distributions.

Eligible Content: M07. D-S.2.1.1

Compare two numerical data distributions using measures of center and variability.
Example 1: The mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team. This difference is equal to approximately twice the variability (mean absolute deviation) on either team. On a line plot, note the difference between the two distributions of heights.
Example 2: Decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth- grade science book.

Alternate Eligible Content
M07DS2.1.1b Use measures of central tendency to interpret data, including overall patterns in the data

Task Specifications
Students will interpret the central tendency of a dataset.

Tier Guidelines	
Tier 1	Tier 2
Limited to mode and median and to 3 data points.	Limited to 3 - 5 data points. Median limited to odd number of elements.

<div style="background:#2196c4;color:white;padding:4px;font-weight:bold">Reporting Category: M07.D-S Statistics and Probability</div>

Assessment Anchor: M07.D-S.3.1

Predict or determine the likelihood of outcomes.

Eligible Content: M07. D-S.3.1.1

Predict or determine whether some outcomes are certain, more likely, less likely, equally likely, or impossible (i.e., a probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event).

Alternate Eligible Content
M07DS3.1.1a Identify the probability of events occurring as possible/impossible or likely/unlikely

Task Specifications
Students will identify whether an event is certain, impossible, or possible (yes, no, maybe).

Tier Guidelines	
Tier 1	Tier 2
Limited to familiar events in home, school, or community.	No additional limitations.

Grade 8

Reporting Category: M08.A-N The Number System

Assessment Anchor: M08.A-N.1.1
Demonstrate an understanding of rational and irrational numbers.

Eligible Content: M08.A-N.1.1.2
Convert a terminating or repeating decimal to a rational number (limit repeating decimals to thousandths).

Alternate Eligible Content
M08AN1.1.2a Convert a fraction to a decimal up to the hundredths place

Task Specifications
Students will convert a fraction to a decimal.

Tier Guidelines	
Tier 1	Tier 2
Fractions limited to half, thirds, and fourths.	Fractions limited to those with denominators ≤ 10.

Reporting Category: M08.A-N The Number System

Assessment Anchor: M08.A-N.1.1
Demonstrate an understanding of rational and irrational numbers.

Eligible Content: M08.A-N.1.1.5
Locate/identify rational and irrational numbers at their approximate locations on a number line.

Alternate Eligible Content
M08AN1.1.5a Locate a non-terminating decimal at its approximate location on the number line

Task Specifications
Students will determine the location of an irrational number on the number line.

Tier Guidelines	
Tier 1	Tier 2
Limited to decimals less than 1 (.333, .666).	No additional limitations

Reporting Category: M08.B-E Expressions and Equations

Assessment Anchor: M08.B-E.1.1
Demonstrate an understanding of expressions and equations with radicals and integer
exponents.

Eligible Content: M08.B-E.1.1.2
Use square root and cube root symbols to represent solutions to equations of the form $x2 = p$ and
$x3 = p$, where p is a positive rational number. Evaluate square roots of perfect squares (up to and
including 122) and cube roots of perfect cubes (up to and including 53) without a calculator.
Example: If $x2 = 25$ then $x = \pm\sqrt{25}$.

Alternate Eligible Content
M08BE1.1.2a Identify the meaning of an exponent (limited to exponents of 2 and 3)

Task Specifications
Students will recognize the meaning of squares and cubes

Tier Guidelines	
Tier 1	Tier 2
Limited to recognizing the expansion of the exponent.	Can be asked to expand the exponent or determining the exponent.

Reporting Category: M08.B-E Expressions and Equations

Assessment Anchor: M08.B-E.2.1
Understand the connections between proportional relationships, lines, and linear equations.

Eligible Content: M08.B-E.2.1.1
Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two
different proportional relationships represented in different ways.
Example: Compare a distance-time graph to a distance-time equation to determine which of two
moving objects has greater speed.

Alternate Eligible Content
M08BE2.1.1a Compare two proportional relationships shown in graph form

Task Specifications
Students will identify the similarities and/or differences of two proportional relationships on a graph.

Tier Guidelines	
Tier 1	Tier 2
Axes range is limited to 5 with increments of 1. Limited to answering a question about a relationship shown in one graph (more, less, or same).	Axes range is limited to 20 with increments of 1, 2, or 5. Limited to selecting the appropriate graph for the given relationship.

Reporting Category: M08.B-E Expressions and Equations

Assessment Anchor: M08.B-E.2.1

Understand the connections between proportional relationships, lines, and linear equations.

Eligible Content: M08.B-E.2.1.3

Derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.

Alternate Eligible Content
M08BE2.1.3a Identify the slope and y-intercept of a line on a graph

Task Specifications
Students will identify if the slope of a line is positive or negative and the y-intercept of that line.

Tier Guidelines	
Tier 1	Tier 2
Limited to determining either the y-intercept or the direction of the slope	Will be asked to determine the direction of the slope as well as the y-intercept

Reporting Category: M08.B-E Expressions and Equations

Assessment Anchor: M08.B-E.3.1

Analyze and solve linear equations and pairs of simultaneous linear equations.

Eligible Content: M08.B-E.3.1.1

Write and identify linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).

Alternate Eligible Content
M08BE3.1.1a Select an algebraic equation using addition or subtraction to solve a 2-step real-world problem with one variable

Task Specifications
Students will match a two-step algebraic equation or expression using one variable and addition or subtraction to a real-world situation.

Tier Guidelines	
Tier 1	Tier 2
Limited to completing the expression.	No additional limitations.

Reporting Category: M08.B-E Expressions and Equations

Assessment Anchor: M08.B-E.3.1
Analyze and solve linear equations and pairs of simultaneous linear equations.

Eligible Content: M08.B-E.3.1.2
Solve linear equations that have rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

Alternate Eligible Content
M08BE3.1.2a Solve a 2-step real-world problem using an algebraic equation involving addition or subtraction and one variable

Task Specifications
Students will solve an algebraic equation with one variable.

Tier Guidelines	
Tier 1	Tier 2
Limited to quantities ≤ 10	Limited to quantities ≤ 20

Reporting Category: M08.B-E Expressions and Equations

Assessment Anchor: M08.B-E.3.1
Analyze and solve linear equations and pairs of simultaneous linear equations.

Eligible Content: M08.B-E.3.1.5
Solve real-world and mathematical problems leading to two linear equations in two variables. Example: Given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.

Alternate Eligible Content
M08BE3.1.5a Graph a linear equation

Task Specifications
Students will select the graph which shows a linear relationship.

Tier Guidelines	
Tier 1	Tier 2
Limited to lines with positive slopes in quadrant I with axes limited to 5 with increments of 1.	Limited to lines with positive or negative slopes in quadrant I with axes limited to 10 with increments of 1 or 2.

<div style="background:#2196c4;color:white;padding:6px;font-weight:bold">Reporting Category: M08.B-F Functions</div>

Assessment Anchor: M08.B-F.2.1

Analyze and solve linear equations and pairs of simultaneous linear equations.

Eligible Content: M08.B-F.2.1.1

Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models and in terms of its graph or a table of values.

Alternate Eligible Content
M08BF2.1.1a Determine the missing value in a graph showing a real-world linear relationship

Task Specifications
Students will find the missing value based on information shown on a graph.

Tier Guidelines	
Tier 1	Tier 2
Limited to lines with positive slopes with axes limited to 5 in increments of 1.	Lines can have a positive or negative slopes, but axes limited to 10 with increments of 1 or 2.

Reporting Category: M08.B-F Functions

Assessment Anchor: M08.B-F.2.1

Analyze and solve linear equations and pairs of simultaneous linear equations.

Eligible Content: M08.B-F.2.1.2

Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch or determine a graph that exhibits the qualitative features of a function that has been described verbally.

Alternate Eligible Content
M08BF2.1.2a Describe the relationship between two variables with a linear relationship displayed in graph form

Task Specifications
Students will identify a linear relationship as positive, negative, or constant when shown on a graph.

Tier Guidelines	
Tier 1	Tier 2
Axes range is limited to 5 with increments of 1. Limited to answering a question about a relationship shown in one graph (increasing, decreasing, or stays the same).	Axes range is limited to 20 with increments of 1, 2, or 5. Limited to selecting the appropriate graph for the given relationship.

Reporting Category: M08.C-G Geometry

Assessment Anchor: M08.C-G.1.1

Demonstrate an understanding of geometric transformations.

Eligible Content: M08.C-G.1.1.1

Identify and apply properties of rotations, reflections, and translations. Example: Angle measures are preserved in rotations, reflections, and translations.

Alternate Eligible Content
M08CG1.1.1a Identify a rotation, reflection, or translation of a two- or three-dimensional figure

Task Specifications
Students will identify translations, rotations, or reflections of 2-dimensional shapes.

Tier Guidelines	
Tier 1	Tier 2
Limited to triangles.	Can be shapes other than triangles.

Commented [DM15]: Not sure about tier guidelines

Reporting Category: M08.C-G Geometry

Assessment Anchor: M08.C-G.1.1

Demonstrate an understanding of geometric transformations.

Eligible Content: M08.C-G.1.1.2

Given two congruent figures, describe a sequence of transformations that exhibits the congruence between them.

Alternate Eligible Content
M08CG1.1.2a Identify figures that are congruent/similar

Task Specifications
Students will identify shapes that are either congruent or similar.

Tier Guidelines	
Tier 1	Tier 2
Limited to 2-dimensional shapes, regular or irregular, with sides ≤ 8.	Can be asked to compare two 2-dimensional shapes or two 3-dimensional figures that are congruent or similar.

Reporting Category: M08.C-G Geometry

Assessment Anchor: M08.C-G.2.1

Understand and apply the Pythagorean Theorem

Eligible Content: M08.C-G.2.1.2

Apply the Pythagorean theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. (Figures provided for problems in three dimensions will be consistent with Eligible Content in grade 8 and below.)

Alternate Eligible Content
M08CG2.1.2a Apply the Pythagorean theorem to determine length/distance in a real-world problem

Task Specifications
Students will use the relationship between sides of a right triangle to determine relative or actual distance in a real-world situation (triangle inequality rule).

Tier Guidelines	
Tier 1	Tier 2
Limited to Pythagorean triples and their ratios and to the relative length of the hypotenuse.	Limited to Pythagorean triples and their ratios, but can be asked to determine the length of any leg of the triangle using a table.

Reporting Category: M08.C-G Geometry

Assessment Anchor: M08.C-G.3.1

Solve real-world and mathematical problems involving volume.

Eligible Content: M08.C-G.3.1.1

Apply formulas for the volumes of cones, cylinders, and spheres to solve real-world and mathematical problems. Formulas will be provided.

Alternate Eligible Content
M08CG3.1.1a Complete the formula for volume to solve a real-world or mathematical problem

Task Specifications
Students will complete the formula for the volume of a given figure with edges and vertices. Formula is given.

Tier Guidelines	
Tier 1	Tier 2

> **Commented [DM16]:** Needs tier guidelines. Intent mentions area, but area is not included in the AEC?

Reporting Category: M08.D-S Statistics and Probability

Assessment Anchor: M08.D-S.1.1

Investigate patterns of association in bivariate data.

Eligible Content: M08.D-S.1.1.2

For scatter plots that suggest a linear association, identify a line of best fit by judging the closeness of the data points to the line.

Alternate Eligible Content
M08DS1.1.2a Identify a statement that describes the relationship between variables displayed in a scatterplot

Task Specifications
Students will describe the relationship between two variables in a scatterplot.

Tier Guidelines	
Tier 1	Tier 2
Limited to identifying positive, negative, or no relationship.	Can be asked to identify to positive, negative, or no relationship, but can be asked about relative strength of a series of positive or negative relationships.

Reporting Category: M08.D-S Statistics and Probability

Assessment Anchor: M08.D-S.1.2
Investigate patterns of association in bivariate data.

Eligible Content: M08.D-S.1.2.1
Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible associations between the two variables.
Example: Given data on whether students have a curfew on school nights and whether they have assigned chores at home, is there evidence that those who have a curfew also tend to have chores?

Alternate Eligible Content
M08DS1.2.1a Answer a question using data from a two-way table

Task Specifications
Students will answer a literal question about data presented in a two-way table.

Tier Guidelines	
Tier 1	Tier 2
Limited to literal questions about individual values.	Limited to literal questions and can ask about individual or total values.

Grade 11

Reporting Category: CC.2.1 Numbers and Operations

Common Core Standard: CC.2.1.HS.F
Number and Quantity

Eligible Content: CC.2.1.HS.F.2
Apply properties of rational and irrational numbers to solve real world or mathematical problems.

Alternate Eligible Content
CC.2.1.HSF2a Convert between fractions and decimals in a real-world problem

Task Specifications	
Students will convert between fractions and decimals in a real-world context.	
Tier Guidelines	
Tier 1	Tier 2
Limited to	

Commented [DM17]: Needs tier guidelines

Reporting Category: CC.2.1 Numbers and Operations

Common Core Standard: CC.2.1.HS.F
Number and Quantity

Eligible Content: CC.2.1.HS.F.3
Apply quantitative reasoning to choose and Interpret units and scales in formulas, graphs and data displays.

Alternate Eligible Content
CC.2.1.HSF3a Identify and interpret scale in a real-world problem

Task Specifications	
Students will interpret scale given a real-world context.	
Tier Guidelines	
Tier 1	Tier 2
Limited to 2 times or half as large.	No additional limitations.

Reporting Category: CC.2.1 Numbers and Operations

Common Core Standard: CC.2.1.HS.F
Number and Quantity

Eligible Content: CC.2.1.HS.F.4
Use units as a way to understand problems and to guide the solution of multi-step problems.

Alternate Eligible Content
CC.2.1.HSF4a Determine the necessary units and solve a real-world problem

Task Specifications
Students will identify the appropriate units to answer a real-world question.

Tier Guidelines	
Tier 1	Tier 2

> **Commented [DM18]:** Needs tier guidelines

Reporting Category: CC.2.2 Algebraic Concepts

Common Core Standard: CC.2.2.HS.C
Functions

Eligible Content: CC.2.2.HS.C.1
Use the concept and notation of functions to interpret and apply them in terms of their context.

Alternate Eligible Content
CC.2.2.HSC1a Determine the missing coordinates in a table of values containing at least 2 complete ordered pairs

Task Specifications
Students will identify the value of a missing coordinate(s) given a table of ordered pairs.

Tier Guidelines	
Tier 1	Tier 2
Limited to determining the x or y coordinate, but not both.	Can be asked to determine both coordinates of a missing ordered pair

Reporting Category: CC.2.2 Algebraic Concepts

Common Core Standard: CC.2.2.HS.C
Functions

Eligible Content: CC.2.2.HS.C.3
Write functions or sequences that model relationships between two quantities.

Alternate Eligible Content
CC.2.2.HSC3a Describe the linear relationship between two variables displayed in a table of values

Task Specifications
Students will describe the relationship (positive, negative, no) between two variables displayed in a table.

Tier Guidelines	
Tier 1	Tier 2

Reporting Category: CC.2.2 Algebraic Concepts

Common Core Standard: CC.2.2.HS.C
Functions

Eligible Content: CC.2.2.HS.C.5
Construct and compare linear, quadratic, and exponential models to solve problems.

Alternate Eligible Content
CC.2.2.HSC5a Interpret the effect of a change in one variable on the other variable using graphs or tables

Task Specifications
Students will identify the change in one variable on another displayed in a graph or table.

Tier Guidelines	
Tier 1	Tier 2
Limited to identifying whether the target variable is increasing or decreasing.	Can be asked to identify whether the target variable is increasing, decreasing, or staying the same.

Reporting Category: CC.2.2 Algebraic Concepts

Common Core Standard: CC.2.2.HS.C
Functions

Eligible Content: CC.2.2.HS.C.5
Construct and compare linear, quadratic, and exponential models to solve problems.

Alternate Eligible Content
CC.2.2.HSC5b Interpret a graphical representation of a linear model in a real-world problem

Task Specifications
Students will answer a literal question about a linear relationship shown on a graph

Tier Guidelines	
Tier 1	Tier 2
Axes are limited to 10 in increments of 1 or 2.	Axes are limited to 20 with increments of 1, 2, or 5.

Reporting Category: CC.2.2 Algebraic Concepts

Common Core Standard: CC.2.2.HS.D
Algebra

Eligible Content: CC.2.2.HS.D.1
Interpret the structure of expressions to represent a quantity in terms of its context.

Alternate Eligible Content
CC.2.2.HSD1a Select an algebraic expression using any of the four operations and solve a real-world problem

Task Specifications
Students will select an algebraic expression using any of the four operations that would solve a real-world problem.

Tier Guidelines	
Tier 1	Tier 2
Limited to 1 variable and total quantities ≤ 20.	Limited to 1 variable and total quantities ≤ 50.

Reporting Category: CC.2.2 Algebraic Concepts

Common Core Standard: CC.2.2.HS.D
Algebra

Eligible Content: CC.2.2.HS.D.7
Create and graph equations or inequalities to describe numbers or relationships.

Alternate Eligible Content
CC.2.2.HSD7a Translate a real-world problem into a one-variable equation

Task Specifications	
Students select an equation that models a given real-world problem.	
Tier Guidelines	
Tier 1	Tier 2
Limited to total quantities ≤ 20.	Limited to total quantities ≤ 50.

Reporting Category: CC.2.2 Algebraic Concepts

Common Core Standard: CC.2.2.HS.D
Algebra

Eligible Content: CC.2.2.HS.D.8
Apply inverse operations to solve equations or formulas for a given variable.

Alternate Eligible Content
CC.2.2.HSD8a Solve a linear equation to find a missing attribute when determining area or volume

Task Specifications	
Students will select the missing attribute when solving for area or volume.	
Tier Guidelines	
Tier 1	Tier 2
Limited to area of rectangles and division without remainders.	Limit to are of rectangles or volume of rectangular prisms and division without remainders.

Reporting Category: CC.2.2 Algebraic Concepts

Common Core Standard: CC.2.2.HS.D
Algebra

Eligible Content: CC.2.2.HS.D.9
Use reasoning to solve equations and justify the solution method.

Alternate Eligible Content
CC.2.2.HSD9a Order a given sequence of steps to solve an equation

Task Specifications
Students will select the missing step in a sequence of steps to solve an equation.

Tier Guidelines	
Tier 1	Tier 2
Limited to a 1-step problem using addition or subtraction	Can be a 2-step problem and can use any of the four operations

Reporting Category: CC.2.3 Geometry

Common Core Standard: CC.2.3.HS.A
Geometry

Eligible Content: CC.2.3.HS.A.13
Analyze relationships between two-dimensional and three dimensional objects.

Alternate Eligible Content
CC.2.3.HSA13a Match corresponding two-dimensional and three-dimensional representations

Task Specifications
Students will match a 3-dimensional figure with its corresponding net.

Tier Guidelines	
Tier 1	Tier 2
Limited to cones, cubes, square pyramids, and rectangular prisms	Limited to all tier 1 figures plus cylinders, triangular prisms, and hexagonal prisms

Reporting Category: CC.2.3 Geometry

Common Core Standard: CC.2.3.HS.A
Geometry

Eligible Content: CC.2.3.HS.A.14
Apply geometric concepts to model and solve real world problems.

Alternate Eligible Content
CC.2.3.HSA14a Compare the area of two objects with one equivalent attribute

Task Specifications
Students will compare the relative area of shapes.

Tier Guidelines	
Tier 1	Tier 2
Limited to squares and rectangles.	No additional limitations.

Reporting Category: CC.2.4 Measurement, Data, and Probability

Common Core Standard: CC.2.4.HS.B
Statistics and Probability

Eligible Content: CC.2.4.HS.B.2
Summarize, represent, and interpret data on two categorical and quantitative variables.

Alternate Eligible Content
CC.2.4.HSB2a Interpret the means and/or medians of two sets of data

Task Specifications
Students will interpret the mean or median of two sets of data.

Tier Guidelines	
Tier 1	Tier 2
Limited to 3 elements with quantities limited to ≤ 15.	Limited to 3 or 5 elements with individual quantities limited to ≤ 30.

Reporting Category: CC.2.4 Measurement, Data, and Probability

Common Core Standard: CC.2.4.HS.B
Statistics and Probability

Eligible Content: CC.2.4.HS.B.3
Analyze linear models to make interpretations based on the data.

Alternate Eligible Content
CC.2.4.HSB3a Identify the relationship between two or more variables in a function

Task Specifications
Students will identify the relationship between 2 variables in a function.

Tier Guidelines	
Tier 1	Tier 2
Rules limited to addition or subtraction. Elements limited to 4.	Rules limited to addition, subtraction, or multiplication. Elements limited to 6.

Reporting Category: CC.2.4 Measurement, Data, and Probability

Common Core Standard: CC.2.4.HS.B
Statistics and Probability

Eligible Content: CC.2.4.HS.B.5
Make inferences and justify conclusions based on sample surveys, experiments, and observational studies.

Alternate Eligible Content
CC.2.4.HSB5a Draw a conclusion about data presented in a two-way table representing a real-world problem

Task Specifications
Students will answer an inferential question about data presented in a two-way table given a real-world context

Tier Guidelines	
Tier 1	Tier 2
Limited to inferential questions about individual values	Can ask inferential questions about individual or total values

Reporting Category: CC.2.4 Measurement, Data, and Probability

Common Core Standard: CC.2.4.HS.B
Statistics and Probability

Eligible Content: CC.2.4.HS.B.7
Apply the rules of probability to compute probabilities of compound events in a uniform probability model.

Alternate Eligible Content
CC.2.4.HSB7a Identify the probability of events based on real-world examples of conditional probability

Task Specifications
Students will select a conditional probability scenario given a real world context.

Tier Guidelines	
Tier 1	Tier 2

Commented [DM20]: How will the tiers be different?