

# Mathematical Practice Anchor Charts

To support students' understanding of the Mathematical Practice, have them use the anchor charts in the front of the Student Edition as they work through the lessons. You can also project or print copies to display in the classroom.

Mathematical Practices	
Use this chart to help you apply the Mathematical Practices when solving problems.	
<b>Mathematical Practice</b>	<b>What to Ask and Think About</b>
<b>MP 1</b> Make sense of problems and persevere in solving them. 	<b>Ask:</b> <ul style="list-style-type: none"> <li>• What is the problem about?</li> <li>• What plan can I make to solve the problem?</li> <li>• How do I know that my answer makes sense?</li> </ul> <b>Think:</b> <ul style="list-style-type: none"> <li>• If I don't know how to solve the problem, I can _____. _____.</li> <li>• I can solve the problem in a different way by _____.</li> </ul>
<b>MP 2</b> Reason abstractly and quantitatively. 	<b>Ask:</b> <ul style="list-style-type: none"> <li>• What are some different ways that I can express the problem?</li> <li>• What do the numbers in the problem represent?</li> <li>• What can I write or draw to describe the problem?</li> </ul> <b>Think:</b> <ul style="list-style-type: none"> <li>• The symbols in the problem show _____.</li> <li>• The steps in my solution make sense because _____.</li> </ul>
<b>MP 3</b> Construct viable arguments and critique the reasoning of others. 	<b>Ask:</b> <ul style="list-style-type: none"> <li>• How can I convince someone that my answer is correct?</li> <li>• How do I know when an answer is NOT correct?</li> <li>• How is my solution the same as or different from others' solutions?</li> </ul> <b>Think:</b> <ul style="list-style-type: none"> <li>• A question I can ask to understand how someone solved the problem is _____. _____.</li> <li>• I agree or disagree with _____ because _____.</li> </ul>
<b>MP 4</b> Model with mathematics. 	<b>Ask:</b> <ul style="list-style-type: none"> <li>• What model will I use for the problem?</li> <li>• What question am I answering with the model?</li> <li>• Would a different model work better? Why or why not?</li> </ul> <b>Think:</b> <ul style="list-style-type: none"> <li>• My model helps me understand the problem by _____.</li> <li>• I can show that my answer is reasonable by _____.</li> </ul>

This will change. Don't template this yet

Mathematical Practices	
Mathematical Practice	What to Ask and Think About
<b>MP 5</b> Use appropriate tools strategically. 	<b>Ask:</b> <ul style="list-style-type: none"> <li>• What tool can I use to solve the problem?</li> <li>• Was the tool I chose helpful? Why or why not?</li> <li>• What tool could show my thinking in another way?</li> </ul> <b>Think:</b>
<b>MP 7</b> Look for and make use of structure. 	<b>Ask:</b> <ul style="list-style-type: none"> <li>• What can I use from other problems to help with this problem?</li> <li>• Can I break the problem into smaller parts that are easier to solve?</li> <li>• Is there a pattern that can help me solve the problem?</li> </ul> <b>Think:</b> <ul style="list-style-type: none"> <li>• The rule I can use to solve this problem is _____.</li> <li>• A pattern I see is _____, I can use it to solve the problem by _____.</li> </ul>
<b>MP 8</b> Look for and express regularity in repeated reasoning. 	<b>Ask:</b> <ul style="list-style-type: none"> <li>• How can I use what I know to get started on the problem?</li> <li>• What is always true for this type of problem? sometimes true? never true?</li> <li>• When can I use my strategy again?</li> </ul> <b>Think:</b> <ul style="list-style-type: none"> <li>• When solving the problem, I do _____ again and again.</li> <li>• I think the next step will be _____ because _____.</li> </ul>

# Volume 1 Contents

## Module 1 Multi-Digit Numbers ..... 3

**High-level summary:** Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus et. Lorum ipsum dolor sit amet, consectetur adipiscing elit. Vivamus et.

The five **New** problem-solving model are introduced throughout the lessons in Module 1. In the last lesson of Module 1, the problem-solving model is then applied to the module content.

Prerequisite Check	8
1.1 Understand Place-Value Relationships	10
TEKS 4.2.A    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection ← <b>New</b>
1.2 Read and Write Numbers	26
TEKS 4.2.A & B    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
1.3 Regroup and Rename Numbers	40
TEKS 4.2.A    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
1.4 Compare and Order Numbers	54
TEKS 4.2.A    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
1.5 Use Place-Value Understanding to Round Numbers	68
TEKS 4.2.A    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
1.6 Add Whole Numbers and Assess Reasonableness	82
TEKS 4.2.A    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
1.7 Subtract Whole Numbers and Assess Reasonableness	96
TEKS 4.2.A & B    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
1.8 PROBLEM SOLVING ← <b>New</b>	
Use Addition and Subtraction to Solve Comparison Problems	110
TEKS 4.2.A & B    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
Module Review	124



## Module 2 Multiplicative Comparisons ..... 129

**High-level summary:** Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus et. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus et.

Prerequisite Check	134
2.1 Explore Multiplicative Comparisons	136
TEKS 4.2.A    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
2.2 Distinguish Between Multiplicative and Additive Comparisons	150
TEKS 4.2.A    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
2.3 Use Division to Solve Multiplicative-Comparison Problems	164
TEKS 4.2.A & B    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
2.4 Explore Multiplication Patterns with Tens, Hundreds, and Thousands	178
TEKS 4.2.A    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
2.5 Explore Division Patterns with Tens, Hundreds, and Thousands	192
TEKS 4.2.A & B    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
2.6 PROBLEM SOLVING	
Estimate Products by 1-Digit Numbers	206
TEKS 4.2.A    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
2.7 Estimate Quotients Using Compatible Numbers	220
TEKS 4.2.A    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
2.8 Use Mental Math Strategies for Multiplication and Division	234
TEKS 4.2.A & B    PS 3, 6, 7	TEKS 4.1.A: Prior Learning Connection
Module Review	250



# Multi-Digit Numbers

## What standards does the module focus on?

### Texas Essential Knowledge and Skills

- 4.7.A** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
- 4.7.B** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using  $>$ ,  $=$ , and  $<$  symbols to record the results of comparisons.
- 4.7.C** Use place value understanding to round multi-digit numbers to any place.
- 4.7.D** Fluently add and subtract multi-digit whole numbers using the standard algorithm.

Headers  
New

### TEKS Process Standards

- SMP.2** Reason abstractly and quantitatively.
- SMP.3** Construct viable arguments and critique the reasoning of others.
- SMP.4** Model with mathematics.
- SMP.5** Use appropriate tools strategically.
- SMP.6** Attend to precision.
- SMP.7** Look for and make use of structure.
- SMP.8** Look for and express regularity in repeated reasoning.

### English Language Proficiency Standards

- 4.1.C.10** Writing . . . to present, describe, and explain ideas and information . . .
- 4.1.C.12** Selecting and applying . . . precise vocabulary . . . to effectively convey ideas
- 4.2.C.6** Connecting ideas



©HMH Education Company

## What will students learn in this module?

### PRIOR LEARNING

#### Students:

- used place-value understanding to round whole numbers.
- used place-value strategies to fluently add and subtract within 1,000.
- used place-value strategies to multiply by multiples of 10.
- fluently added and subtracted using algorithms, properties of numbers, and place values.



Use Pacing Guide and Correlations for full standards coverage.

### THIS MODULE

#### TEKS 4.NBT.1, 4.NBT.2, 4.NBT.3, 4.NBT.4

In this module, as students look at multi-digit numbers they will:

- read and write multi-digit numbers in different ways and describe the values of digits in a number.
- use visual representations to group and name multi-digit whole numbers.
- use place-value charts and number lines to compare and order whole numbers.
- round whole number and recognize rounding as an estimation strategy.
- determine reasonableness of sums and differences.
- add and subtract whole numbers using understanding of place value.
- add and subtract to solve comparison problems.

### FUTURE CONNECTIONS

#### Students:

- will recognize the relationships of the values of digits in a multi-digit number.
- will explain patterns in the digits of numbers when multiplying and dividing by a power of 10.
- will read, write, and compare decimals based on place value.
- will use visual models and the standard algorithm to add and subtract decimals to hundredths.
- will use place value to round numbers.
- will write simple expressions and interpret numerical expressions.

New

## What is the flow of the module?

Note: This flow can be flexibly adjusted to accommodate various schedule needs.

### Prerequisite Check

1 Day

### Lessons

8 Days

### Module Review

1 Day

### Module Test

1 Day

1 Day\*

### Project-Based Learning: Module 1 Project

Depth of Knowledge  
Level 4

\*The project can take place at any point during the module.



### What lessons are in this module?

A lesson is:

- Approximately 45 minutes of an Essential Session
- 15+ minutes of suggested Differentiation and Practice Opportunities

New

### HMH Classcraft Planning Support

- Go to the Classcraft Session Organizer for online module planning and to preview resources.
- For offline planning, use the Editable Lesson Plan.

### LESSON 1 PROBLEM SOLVING

#### Understand Place-Value Relationships

Learning objective: Describe the value of a digit.

Materials:

- 12 Foam Base-Ten Flats
- 14 Foam Base-Ten Rods
- 10 Foam Base-Ten Units
- 1 Plastic Base-Ten Cube

### LESSON 2

#### Read and Write Numbers

Learning objective: Use place-value relationships to read and write multi-digit whole numbers to 1,000,000 in different forms.

Materials

- 10 Foam Base-Ten Flats
- 20 Foam Base-Ten Rods
- 100 Foam Base-Ten Units

Printables:

- Place-Value Charts (to hundred thousands)

### LESSON 4

#### Compare and Order Numbers

Learning objective: Compare and order whole numbers through 1,000,000.

Printables:

- Horizontal Number Lines
- Place-Value Charts (to hundred thousands)

### LESSON 5 PROBLEM SOLVING

#### Use Place-Value Understanding to Round Numbers

Learning objective: Round whole numbers through 1,000,000.

Printables:

- Number Lines
- Place-Value Charts

HMH Classcraft Planning Support

- For offline planning, use the Editable Lesson Plan.

### LESSON 3

#### Regroup and Rename Numbers

Learning objective: Group multi-digit whole numbers in different ways to 1,000,000.

Materials

- 10 Foam Base-Ten Flats
- 20 Foam Base-Ten Rods
- 20 Foam Base-Ten Units

Printables:

- Place-Value Charts

### LESSON 7

#### Subtract Whole Numbers and Assess Reasonableness

Learning objective: Use the standard algorithm to find the difference between two whole numbers and assess the reasonableness using mental math and estimates.

Printables:

- Place-Value Charts (to hundred thousands)

### LESSON 8

#### Use Addition and Subtraction to Solve Comparison Problems

Learning objective: Interpret and solve comparison problems using addition and subtraction by drawing bar models.

Printables:

- Bar Models
- Place-Value Charts

\* Used in Small-Group Activity





# Teacher Background

## How can I Rationale of the Module Sequence?

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris. Ut ut iaculis magna. Suspendisse id mauris. Lorem ipsum dolor sit

amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspen

This will change. Don't template this yet

ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id ma

Lorem ipsum dolor sit amet, con

elit. Ut ut iaculis magna. Suspen

## How can I Conceptual and Procedural Emphasis of TEKs?

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut

amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris.



## Teacher Background, continued

### What are Process Standards Connections?

Ut ut iaculis magna. Suspendisse id mauris. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris.

Ut ut iaculis magna. Suspendisse id mauris. This will change. Don't template this yet

amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris.

Ut ut iaculis magna. Suspendisse id mauris. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut ut iaculis magna. Suspendisse id mauris.

ctetur adipiscing  
sse id mauris.



## Mathematical Language & Emergent Bilinguals

Emergent Bilingual is New

### How can I improve all students' academic language development?

#### Vocabulary

Use the **Words to Learn (WTL)** routine in Classcraft or with the module's WTL Vocabulary Cards to help students master any review terms and the following new terms:

- **period** (Lesson 1.1)      • **word form** (Lesson 1.2)
- **place value** (Lesson 1.1)      • **regroup** (Lesson 1.3)
- **expanded form** (Lesson 1.2)      • **estimate** (Lesson 1.5)
- **standard form** (Lesson 1.2)      • **round** (Lesson 1.5)
- **comparison** (Lesson 1.8)      • **addend** (Lesson 1.6)

Consider using the same routines to support students in mastering these high-utility words:

- comparison (Lesson 1.8)

#### Mathematical Language Routines (MLRs)

Access information, activities, and other resources like **Peer Coach Videos**, in the **Math Language Routines Library**. MLRs in this module include:

- **Three Reads** (All Lessons)
- **Collect and Display** (Lessons 1.1 and 1.4)
- **Compare and Connect** (Lessons 1.1–1.7)
- **Discussion Supports** (Lesson 1.8)
- **Stronger and Clearer Each Time** (Lessons 1.3–1.8)

\*Use **Peer Coach Videos** to help students remember the steps in each routine.

### How can I support my Emergent Bilinguals' participation in learning?

#### Module 1 Key Routine: Assigning Lesson Partners

**Purpose:** To ensure students can engage in lesson interactions efficiently and productively

1. Assign letters (A/B) for partners so you can easily cue who should speak first and increase time on task.
2. Use desk rows, places at tables, or proximity to classroom items to assign A/B partners.
3. Initially pair students with partners with whom they'll feel focused and comfortable.
4. Keep partners together for a module before changing to help them acclimate and achieve a working rhythm.
5. Avoid partnering students with extreme skill inequities (e.g., emerging English with advanced) or similar challenges (e.g., striving reader; easily distracted).
6. Assign students with emerging English proficiency and/or learning challenges to an existing duo who has stronger social and academic skills. (This will be a trio instead of partners.)

See Language Development Resource Guide for more details about these routines.



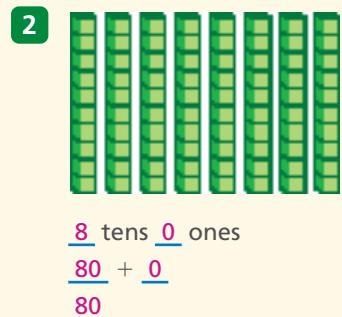
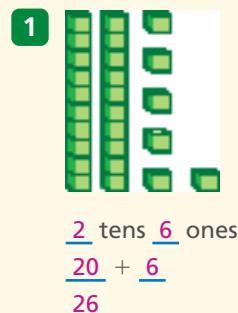
# Prerequisite Check

1 Day

- Assign Prerequisite Check to determine student readiness for this module.
- Use the Data-Driven Support table to support prerequisite understanding.
- To administer offline, have students complete page 6 in the Student Edition.

## STUDENT CONTENT

Show the number in three different ways.



- 3** 156  
 Find the value of the underlined digit. 50
- 4** 501  
 Find the value of the underlined digit. 0

**5**

$$\begin{array}{r} 6 \\ 2 \\ + 4 \\ \hline \end{array}$$

Determine the sum. 12

**6**

$$\begin{array}{r} 3 \\ 5 \\ 5 \\ + 1 \\ \hline \end{array}$$

Determine the sum. 14

**7**

$$\begin{array}{r} 8 \\ 7 \\ 2 \\ + 3 \\ \hline \end{array}$$

Determine the sum. 20

**8**

$$\begin{array}{r} 84 \\ - 56 \\ \hline \end{array}$$

Determine the sum. 28

**9**

$$\begin{array}{r} 67 \\ + 29 \\ \hline \end{array}$$

Determine the sum. 96

## Data-Driven Support

**Assessment Report**

Use the table below to find the recommended intervention resources, found on Ed.

Item	Content Focus	Intervention Activities
<b>1-2</b>	Tens and Ones	Count and group base-ten blocks into tens and ones and relate the grouping to the corresponding written numeral.
<b>3-4</b>	Place Value to One Thousand	Know the value of designated digits in whole numbers.
<b>5-7</b>	Column Addition	Add three numbers in a column.
<b>8-19</b>	Two-Digit Addition and Subtraction	Add and subtract two 2-digit numbers.

### Adaptive Skill Development:

**Waggle** Use Waggle, with its skill-driven AI engine to provide targeted support to your students.



## LESSON 1

45 minutes

# Understand Place-Value Relationships

## What should I understand about the math?

- Place-value understanding is a fundamental skill particularly used in estimation, the algorithms for the four basic operations.
- Build on **Enlarged to match other text** the value to realize that the relationship between digits in a multi-digit number holds even as the number extends into millions.

## What will students learn in this lesson?

## PRIOR LEARNING FOR STUDENTS Deleted extra head

- understood that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.

## Mathematical Standards in This Lesson

**TEKS**

**6.8.B:** model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes

**6.8.C:** write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

**6.8.D:** determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

**6.8.D:** determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

## FUTURE CONNECTIONS FOR STUDENTS Deleted extra head

- will recognize that in a multi-digit whole number, a digit in one place represents 10 times as much as it represents in the place to its right.

**PS**

**6.1.B:** use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, and evaluating the process and the reasonableness of the solution

**6.1.D:** communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate

- understood that the numbers 100, 200, 300, 400, 500, 600, and 900 refer to 1, 2, 3, 4, 5, 6, 7, 8, or 9 hundreds (and 0 tens and 0 ones).

**ELPS** Deleted extra head

**1F:** derive meaning from a variety of auditory multimedia sources to build and reinforce concepts and language acquisition

**3.C:** use high-frequency words, contextual factors, and word analysis such as Greek and Latin prefixes, suffixes, and roots and cognates to comprehend content-area vocabulary in text.

**3.G:** demonstrate reading comprehension of content-area texts by retelling, paraphrasing, summarizing, and responding to questions

**3.G:** demonstrate reading comprehension of content-area texts by retelling, paraphrasing, summarizing, and responding to questions

**Learning Objective:** Describe the value of a digit.

**Language Objective:** Show how to represent the value of a digit by connecting ideas about various representations.

## Manipulatives &amp; Materials

## Per student

## Per group

- 12 Foam Base-Ten Flats
- 14 Foam Base-Ten Rods
- 10 Foam Base-Ten Units
- 1 Plastic Base-Ten Cube

## HMH PER

- Base 10 Blocks

## Vocabulary

- place value
  - period
- Use the WTL routine within the lesson, where it makes sense to support all students.

## What does this lesson look like in my classroom?

FIRST, launch the **Classcraft Essential Session** to teach the lesson.



TEACHERS present the session.



STUDENTS participate using books or devices.

45 minutes

**Learning Goal:** I can use a place-value chart to compare the values of different digits and justify the comparisons.

## Get Ready

## ⑯ Learning Goal routine

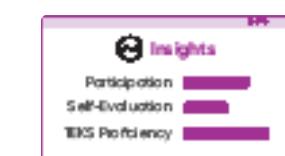
## Learn

- ⑯ Spark Your Learning: Three Reads routine  
No changes this page. There will be more time icons coming
- ⑯ Task 1:
- ⑯ Task 2:
- ⑯ Task 3: Compare and Connect routine
- ⑯ Review Spark Your Learning

## Assess

- ⑯ Quick Check routine
- ⑯ Learning Goal routine

## + Turn &amp; Talk routines



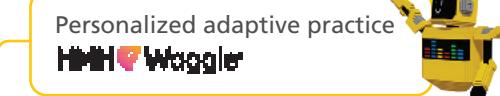
USE the Program Activity Report to differentiate instruction.

## Teacher-Led Small-Group Activities

15 minutes  
1-3 rotations per lesson as time allows

## Collaborative Groups

## Independent Practice



Personalized adaptive practice

## Waggle

Homework

Extension

\* Find all resources for differentiation and practice on page xx.

## LESSON 1

45 minutes

# Graph Linear Equations, Inequalities, and Systems in Two Variables

Smaller font size and leading for longer title so they will never go to 3 lines

## What should I understand about the math?

- Place-value understanding is a fundamental skill particularly used in estimation, the algorithms for the four basic operations.
- Build on a prior understanding of place value to realize that the relationship between digits in a multi-digit number holds even as the number extends into millions.

## What will students learn in this lesson?

## PRIOR LEARNING FOR STUDENTS

- understood that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.
- understood that the numbers 100, 200, 300, 400, 500, 600, 700, 800, and 900 refer to 1, 2, 3, 4, 5, 6, 7, 8, or 9 hundreds (and 0 tens and 0 ones).

## Mathematical Standards in This Lesson



**6.8.B:** model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes

**6.8.C:** write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

**6.8.D:** determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

**6.8.D:** determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

## FUTURE CONNECTIONS FOR STUDENTS

- will recognize that in a multi-digit whole number, a digit in one place represents 10 times as much as it represents in the place to its right.
- will recognize that in a multi-digit whole number, a digit in one place represents  $\frac{1}{10}$  of what it represents in the place to its left.



**6.1.B:** use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution

**6.1.D:** communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate



**1F:** derive meaning from a variety of auditory multimedia sources to build and reinforce concepts and language acquisition

**3.C:** use high-frequency words, contextual factors, and word analysis such as Greek and Latin prefixes, suffixes, and roots and cognates to comprehend content-area vocabulary in text.

**3.G:** demonstrate reading comprehension of content-area texts by retelling, paraphrasing, summarizing, and responding to questions

**3.G:** demonstrate reading comprehension of content-area texts by retelling, paraphrasing, summarizing, and responding to questions

**Learning Objective:** Describe the value of a digit.

**Language Objective:** Show how to represent the value of a digit by connecting ideas about various representations.

## Manipulatives &amp; Materials

## Per student

## Per group

- 12 Foam Base-Ten Flats
- 14 Foam Base-Ten Rods
- 10 Foam Base-Ten Units
- 1 Plastic Base-Ten Cube

## HMH PER

- Base 10 Blocks

## Vocabulary

- place value
  - period
- Use the WTL routine within the lesson, where it makes sense to support all students.

## What does this lesson look like in my classroom?

FIRST, launch the Classcraft Essential Session to teach the lesson.



TEACHERS present the session.



STUDENTS participate using books or devices.

45 minutes

**Learning Goal:** I can use a place-value chart to compare the values of different digits and justify the comparisons.

## Get Ready

15 Learning Goal routine

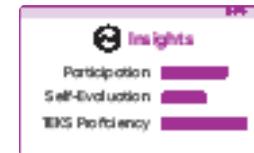
## Learn

- Spark Your Learning: Three Reads routine
- Task 1: Collect and Display routine
- Task 2: Compare and Connect routine
- Task 3: Compare and Connect routine
- Review Spark Your Learning

## Assess

- Quick Check routine
- Learning Goal routine

+ Turn &amp; Talk routines



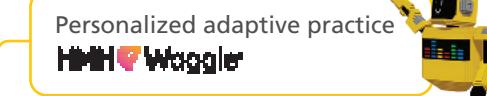
USE the Program Activity Report to differentiate instruction.

## Teacher-Led Small-Group Activities

15 minutes  
1-3 rotations per lesson as time allows

## Collaborative Groups

## Independent Practice



- Homework
- Extension

\* Find all resources for differentiation and practice on page xx.

## LESSON 1 PROBLEM SOLVING

45 minutes

The version with Problem Solving

# Understand Place-Value Relationships

## What should I understand about the math?

- Place-value understanding is a fundamental skill particularly used in estimation, the algorithms for the four basic operations.
- Build on a prior understanding of place value to realize that the relationship between digits in a multi-digit number holds even as the number extends into millions.

## What will students learn in this lesson?

## PRIOR LEARNING FOR STUDENTS

- understood that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.
- understood that the numbers 100, 200, 300, 400, 500, 600, 700, 800, and 900 refer to 1, 2, 3, 4, 5, 6, 7, 8, or 9 hundreds (and 0 tens and 0 ones).

## Mathematical Standards in This Lesson



**6.8.B:** model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes

**6.8.C:** write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

**6.8.D:** determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

**6.8.D:** determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

## FUTURE CONNECTIONS FOR STUDENTS

- will recognize that in a multi-digit whole number, a digit in one place represents 10 times as much as it represents in the place to its right.
- will recognize that in a multi-digit whole number, a digit in one place represents  $\frac{1}{10}$  of what it represents in the place to its left.



**6.1.B:** use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution

**6.1.D:** communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate



**1F:** derive meaning from a variety of auditory multimedia sources to build and reinforce concepts and language acquisition

**3.C:** use high-frequency words, contextual factors, and word analysis such as Greek and Latin prefixes, suffixes, and roots and cognates to comprehend content-area vocabulary in text.

**3.G:** demonstrate reading comprehension of content-area texts by retelling, paraphrasing, summarizing, and responding to questions

**3.G:** demonstrate reading comprehension of content-area texts by retelling, paraphrasing, summarizing, and responding to questions

**Learning Objective:** Describe the value of a digit.

**Language Objective:** Show how to represent the value of a digit by connecting ideas about various representations.

## Manipulatives &amp; Materials

## Per student

## Per group

- 12 Foam Base-Ten Flats
- 14 Foam Base-Ten Rods
- 10 Foam Base-Ten Units
- 1 Plastic Base-Ten Cube

## HMH PER

- Base 10 Blocks

## Vocabulary

- place value
  - period
- Use the WTL routine within the lesson, where it makes sense to support all students.

## What does this lesson look like in my classroom?

FIRST, launch the Classcraft Essential Session to teach the lesson.



TEACHERS present the session.



STUDENTS participate using books or devices.

45 minutes

**Learning Goal:** I can use a place-value chart to compare the values of different digits and justify the comparisons.

## Get Ready

⑯ Learning Goal routine

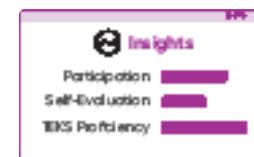
## Learn

- ⑯ Spark Your Learning: Three Reads routine
- ⑯ Task 1: Collect and Display routine
- ⑯ Task 2: Compare and Connect routine
- ⑯ Task 3: Compare and Connect routine
- ⑯ Review Spark Your Learning

## Assess

- ⑯ Quick Check routine
- ⑯ Learning Goal routine

+ Turn &amp; Talk routines



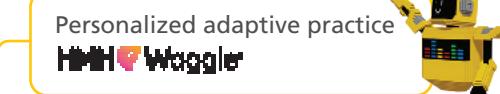
USE the Program Activity Report to differentiate instruction.

## Teacher-Led Small-Group Activities

15 minutes  
1-3 rotations per lesson as time allows

## Collaborative Groups

## Independent Practice



- Personalized adaptive practice
- HMH Waggle
- Homework
- Extension

\* Find all resources for differentiation and practice on page xx.

# Begin Essential Session

## Get Ready

### Learning Goal

(🕒 15 minutes)

**STUDENT CONTENT**

I can use a place-value chart to compare the values of different digits and justify the comparisons.

Rate yourself on this learning goal:

- I don't understand.
- I need more practice.
- I've got it.

**TEACHER GUIDE**

**START** the session by using the **Learning Goal** routine to assess students' confidence with the lesson objective.

1. Read aloud the **I Can** statement. Give students time to think about what the statement means.
2. Clarify the meaning of the words *compare* and *justify* by explaining that *compare* means to find similarities and differences, and *justify* means to explain or show mathematical reason, to support student understanding.
3. Students will individually assess their content knowledge based on the **I Can** statement.
4. Review student responses to see how they rate themselves for today's learning.
5. Tell students they will revisit the **I Can** Statement at the end of the session.

**Manipulatives****TEACHER GUIDE**

**FIRST**, review the problem and the **Spark Discussions** table on the following page. This prepares you to know what students are asked to do and what they might do when solving the problem.

**NOW**, use the **Three Reads** routine to support students in understanding the problem.

1. **First Read:** Students read or listen to the problem with a focus on the context of the problem. Discuss the problem with students to be sure they understand the context.

**ASK** What is the problem about? **Possible answer:** the number of beetles in the museum insect inventory

(🕒 15 minutes)



Student Edition p. 7

## Learn

### Spark Your Learning

(🕒 15 minutes)

**Manipulatives**

Student Edition p. 7

**STUDENT CONTENT**

Some museums keep collections of insect specimens as a historical record. Experts keep track of inventory, inspect specimen cases for damage, and check that labels are set correctly. How can you show the number of beetles in the museum insect inventory?

Insect	Number
beetles	1,240
wasps	19,725
butterflies	11,100

**TEACHER GUIDE**

**FIRST**, review the problem and the **Spark Discussions** table on the following page. This prepares you to know what students are asked to do and what they might do when solving the problem.

**NOW**, use the **Three Reads** routine to support students in understanding the problem.

1. **First Read:** Students read or listen to the problem with a focus on the context of the problem. Discuss the problem with students to be sure they understand the context.

**ASK** What is the problem about? **Possible answer:** the number of beetles in the museum insect inventory

©HMH Education Company • Image Credits: ©Shutterstock; ©alslutsly/Shutterstock; ©Adam Eastland Rome/Alamy

©HMH Education Company

**TEACHER GUIDE, CONTINUED**

2. **Second Read:** Reread the problem with a focus on what the quantities represent.

**ASK** What numbers are important? Why are they important? **1,240**; **Possible answer:** because that is the number of beetles in the museum inventory

3. **Third Read:** Reread the problem for the third time with a focus on the question being asked: *How can you show the number of beetles in the museum insect inventory?*

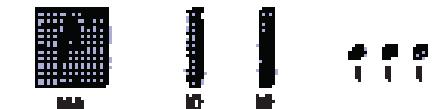
Have students brainstorm possible strategies and engage in independent think time before solving the problem.

**NEXT**, have students solve the problem. As students solve the problem, monitor their responses and use the **Spark Discussions** table to provide common-error support and to encourage students who used correct strategies to share their thinking.

**Spark Discussions**

Encourage students to be mindful of how many digits are in the number they are representing; sometimes one or more of the digits might be zero. When a number contains a zero or zeros, the zero or zeros can be between digits or at the end of the number.

**Addressing Common Errors** Students might incorrectly represent the number. They may not understand how to represent numbers that contain 0 as a digit. Use the scripting to provide support for this error.



**ASK** Which digit is in the ones place-value position in the number 1,240? **0**

**ASK** How many small units should you use to show the number of ones? **0**

**ASK** Which digit is in the tens place-value position in the number 1,240? **4**

**ASK** How many rods should you use to show the number of tens? **4**

**ASK** Which digit is in the hundreds place-value position in the number 1,240? **2**

**ASK** How many flats should you use to show the number of hundreds? **2**

**ASK** Which digit is in the thousands place-value position in the number 1,240? **1**

**ASK** How many large cubes should you use to show the number of thousands? **1**

## Learn | Essential Sessions

## Learn | Essential Session

 Spark Discussions, continued

**Deepening Student Thinking** If students represented 1,240 correctly, then use the scripting to help students explain their thinking.



**ASK** How can you represent 1,240? **Possible answer:** I can draw quick representations of base-ten blocks.

**ASK** How can you show the value of each digit? **Possible answer:** I can draw one big square and label it *T* for 1,000, 2 smaller squares for 2 hundreds or 200, and 4 lines for 4 tens or 40.

**ASK** Did you draw a picture for the ones position? Explain.

**Possible answer:** No, because the digit is 0 in the ones place-value position.

 Spark Your Learning, continued

## STUDENT CONTENT

**Turn & Talk** Can you show the number of beetles in a different way? How do the different ways compare?

**Possible answer:** Yes, I can draw 12 same-size squares for 12 hundreds and 4 lines for 4 tens. They show the same number using different base-ten blocks.

## TEACHER GUIDE

**FINALLY**, have students complete the **Turn & Talk** routine. Have students share their responses. Select students who have used various strategies and tools to share with the class how they solved the problem. Have them discuss why they chose a specific strategy or tool so they can connect their representation with how it describes the value of the digits.



## TEACHING STRATEGY

**Emergent Bilinguals: Supporting All Language Learners**

Project students' work so the class can discuss the different representations. Allow students to use drawings and manipulatives to represent the value of the digits in the number and support their language when comparing different methods. Students may create labels or draw arrows between different forms to show their understanding of the similarities and differences between the forms. Guide students to see similarities among the different representations and discuss the efficiency of the different representations.

Use the Supporting All Language Learners chart to let students choose the language scaffolding that they need.

## Language Proficiency Level

↗ **Pre-Production/Beginning** Allow students to represent their methods with drawings or manipulatives. Students may choose to point to numbers and place values and reference their drawings or manipulatives to show similarities.

➡ **Intermediate** Students may reference their representations of different numbers with drawings or manipulatives. Students may choose to point to numbers and place values while speaking and use their drawings or manipulatives to represent their answers.

➡ **High Intermediate/Advanced** Students reference drawings or manipulatives while speaking about their methods and their similarities and differences.

## Scaffolding Examples

Students may represent the number 1,240 using different methods with manipulatives or by drawing their answers using base-ten blocks. A student may use 12 flats to represent 1,200 and point to the 12 in the number 1,240.

Students may represent the number 1,240 using different methods with manipulatives or by drawing their answers using base-ten blocks. A student might use 12 flats to represent 1,200 and point to the 12 in the number 1,240 and use words like *same* and *hundreds* to demonstrate their understanding of representing place value.

Students may represent the number 1,240 using different methods with manipulatives or by drawing their answers using base-ten blocks. A student might use 12 flats to represent 1,200 and point to the 12 in the number 1,240 and speak in complete sentences to compare the two representations.

## Learn | Essential Sessions

## Task 1

15 minutes

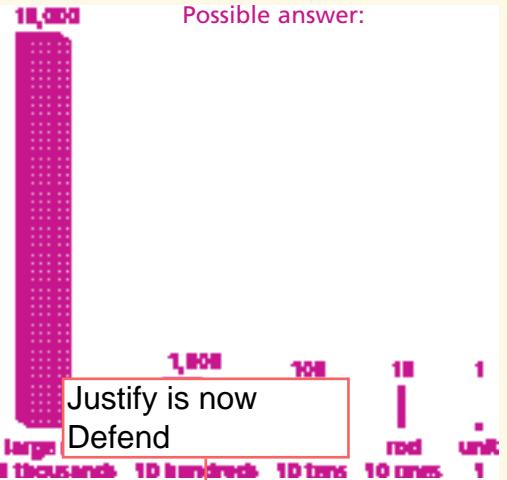
**STUDENT CONTENT**

**PROBLEM SOLVING**

 **PS Construct Arguments:** The museum has 11,100 butterfly specimens. Describe the relationship between the values of the digits in the thousands place and the hundreds place in 11,100.

Represent and describe ten thousands, thousands, hundreds, tens, and ones.

**Possible answer:**



**Defend:** *Defend*: Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus et. anno text

**B.** What do you notice about the size of each representation?  
**Possible answer:** Each representation is ten times the size of the previous representation.

Student Edition p. 8

**TEACHER GUIDE**

**START** the task by making sure the students understand the problem.

 **PS** Next, have students use the **Process Standard: Construct Arguments**.

Remind students how base-ten blocks can be used to show the quantities numerals represent. Have them explain the relationships between the place values so that they can conceptualize greater numbers.

**ASK** How does one flat compare to one large cube?  
**Possible answer:** 10 flats make up 1 large cube.

**ASK** How do you think one large cube will compare to the next representation? **Possible answer:** 10 large cubes make up 1 large rod.

**ASK** What is the value of the large rod block? **Possible answer:** 10,000

**ASK** What is the pattern unit in the shapes of the representations? **Possible answer:** cube, rod, flat

**ASK** What is the next place value to the left of 10 thousands? **Possible answer:** 100 thousands

**ASK** Based on the pattern of the shapes you have seen so far, what would the shape of the representation of 100 thousands be? **Possible answer:** a large flat

**ASK** How would the representation for 100 thousands compare to the representation for 10 thousands? **Possible answer:** 100 thousands is 10 times larger than 10 thousands.

**NOW**, have students solve the problem.

**Defend:** *Defend*: Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus et.

Run in is now purple to match SE

Run in is now purple to match SE



Blue mountain swallowtail butterfly

Run in is now purple to match SE

Run in is now purple to match SE

## Task 1, continued

**STUDENT CONTENT, CONTINUED**

- C.** Describe the relationship between the values of the digits in the thousands place and hundreds place in 11,100. **Possible answer:** The value of the digit in the thousands place is ten times the value of the digit in the hundreds place.

**TEACHING STRATEGY**  
**Common Error**

Have students describe the relationship between a 1 and the 1 to its right in the number 11,100. Have them act out the problem. Display the sentence: The value of the digit in the thousands place is \_\_\_\_\_ times the value of the digit in the hundreds place. Hand the student at least 12 hundreds flats while you are holding a thousands cube. **ASK** How many flats must you give me to trade for this thousands cube? Then have the student explain why and ask what number should go on the blank line to complete the displayed sentence. Have the student extend their thinking by looking and comparing greater value digits in the number 11,100. Point to the 1 in the 10 thousands place. **ASK** How many times the value of the 1 in the thousands place is the value of the 1 in the ten thousands place?

**TEACHER GUIDE, CONTINUED**

**THEN**, have students use the **Collect and Display** routine to discuss their thinking.

During pair work, circulate and listen to student discussion. Write common or important words, phrases, sketches, or diagrams on a visual display for students to see. Refer back to the display during whole class discussion to help students communicate ideas more precisely.

**TEACHING STRATEGY**  
**Emergent Bilinguals**

Have students act out the relationship between the 1 in the thousands place and the 1 in the hundreds place. Let some students represent hundreds and some students represent thousands. Ask students to determine how many would need to be in each group so that the values are equal. Make connections between the location of the students and the place values in the number.

**Depth of Knowledge Leveled Questions**

If time allows, use these questions to progress students through different levels of understanding.

**Level 1: Recall**

What is the place-value position of each digit in the number 11,100?  
**Possible answer:** The digit 1 is in the ten thousands place, the digit 1 is in the thousands place, the digit 1 is in the hundreds place, the digit 0 is in the tens place, and the digit 0 is in the ones place.

**Level 2: Basic Application of Skills & Concepts**

How can you show the number 11,100 using base-ten blocks?  
**Possible answer:** 1 large rod, 1 cube, 1 flat

**Level 3: Strategic Thinking and Complex Reasoning**

What is the relationship among place-value positions?  
**Possible answer:** A digit in one place has ten times the value of the same digit in the place to its right.

Students get opportunities to work in Depth of Knowledge 4 in the Module Project.

## Learn | Essential Sessions

## Task 2

## PROBLEM SOLVING

Run in is now purple to match SE

15 minutes

## STUDENT CONTENT

 Use a Problem-Solving

**Model:** Makani is making kites in the shape of a parallelogram. He wants to make 10 kites. Makani is trying to figure out how much fabric he needs to construct the kites. Each parallelogram has a height of 2.5 feet and a base of 3 feet.

**A. Analyze:** What information do you have?

What are you trying to figure out?

I know the shape of each kite and the dimensions. I also know that Makani wants to make 10 kites. I am trying to figure out how much total fabric is needed to make the 10 kites, which would be the area of the kites.

**B. Plan:** How can you use the information you have to solve this problem?

I can use the formula for the area of a parallelogram and the dimensions of each kite to find the area of one kite. Then, I can multiply by 10 to find the total area, or the amount of fabric Makani needs.

**C. Solve:** Use your plan to solve this problem. Show your work.

$$A=bh$$

$$A=(3)(2.5)=7.5 \text{ "ft"}^2$$

$$\text{Total Area} = 10A = 10(7.5) = 75 \text{ "ft"}^2$$

One kite needs 7.5 square feet of fabric. Multiply by 10 to find that Makani needs 75 square feet for all 10 kites.

**D. Justify:** Explain why your answer in Part C makes sense.

The area of a single kite should be between  $3 \times 2 = 6 \text{ ft}^2$  and  $3 \times 3 = 9 \text{ ft}^2$ . So, the area of 10 kites should be between  $10 \times 6 = 60 \text{ ft}^2$  and  $10 \times 9 = 90 \text{ ft}^2$ . Since my answer of 75  $\text{ft}^2$  is between these areas, it is reasonable.

## Student

Run in is now purple to match SE

## TEACHER GUIDE

 Have students use the **Process Standard: Use a Problem-Solving Model** to solve a problem in this task.

**START** the task by making sure students understand the problem. The **Analyze** step is an important first step in solving a problem. The **Three Reads** routine can help support students in analyze and make sense of the problem.

**ASK** What is the problem about?

Makani is making kites and needs to know how much fabric is needed to construct 10 kites.

**ASK** What numbers are important? Why are they important? 2.5, 3, and 10; The first two numbers, 2.5 and 3, are the dimensions of the parallelogram-shaped kites. Ten is the total number of kites Makani wants to make.

**ASK** Reread the problem for the third time. What question being asked?

How much fabric does Makani need to make 10 kites.

**NEXT**, have students make a **Plan**. Student plans should explain how they will use the information they have to determine the solution.

**NOW**, have students **Solve** the problem.

**THEN**, have students **Justify** their solution. Student justifications should include evidence and reasoning to support their solution.

TEACHING STRATEGY  
Common Error

If students use the place-value name of the digit with the greater value when comparing the values of the two digits, have them represent the value of the digit 5s with base-ten blocks above the columns of the place-value chart. Have students explain how many models for one place value are needed to create the model to its left. Students should recognize that each place value is 10 times the value of the place to its right as long as the digits they are comparing are the same.

## Task 2, continued



**Evaluate Process:** How effective was your strategy to solve this problem? What might you do differently.

My strategy makes sense because you need to find the area of one kite first and then multiply by the number of kites to find the total area. One thing I might do differently is add some extra area so there is some extra fabric to allow for better construction or to account for mistakes or scraps of fabric that can't be used after cutting. I would want to figure out how much extra fabric might be needed for these things.

## TEACHER GUIDE, CONTINUED

**FINALLY**, have students **Evaluate Process**. Have students use the **Compare and Connect** routine to discuss their thinking.

Encourage students to compare their strategy with another student and identify improvements or changes they might make to their process.

TEACHING STRATEGY  
ELPS

Lore ipsum dolor sit amet, consectetur adipiscing elit. Sed eleifend pharetra tellus. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed eleifend pharetra tellus. Lorem ipsum dolor sit amet,

## TEACHER GUIDE

**Connect to Prior Learning** **FINALLY**, have students use the **Turn & Talk** routine. Encourage students to share ideas about how they can use a place-value chart to identify the pattern in the periods. For students who need support, suggest they represent a number using base-ten blocks and then write the number in a place-value chart.

TEACHING STRATEGY  
UDL Support: Engagement

Have students work with a partner to explore the values of the digits placed in a place-value chart. They can use place-value charts already filled in or create their own. Instruct Partner 1 to point to two digits on the place-value chart. Next, Partner 2 points to the digit that has a greater value. Then, have the partners switch roles and repeat.

## Learn | Essential Sessions

## Beg Not in grades 1-5 2

## Task 3

(15 minutes)

Run in is now purple to match SE

**STUDENT CONTENT**

**PS Use Structure:** Yellow jacket wasps live in colonies that can contain up to 15,000 wasps, while bee colonies can have as many as 50,000 bees. How does the value of the digit 5 in 50,000 compare with the value of the digit 5 in 15,000? Use the place-value chart to compare.

**A.** Show 15,000.

Thousands			Ones		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
1	5	0	0	0	0

The value of the digit 5 is 5,000.**B.** Show 50,000.

Thousands			Ones		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
5	0	0	0	0	0

The value of the digit 5 is 50,000.**C.** Which digit 5 has the greater value?The digit 5 in 50,000.**D.** The value of the digit 5 in 50,000 is 10 times the value of the digit 5 in 15,000.

## TEACHER GUIDE

**START** the task by making sure the students understand the problem.

**PS** Next, have students use the **Process Standard: Use Structure**.

Remind students that a place-value chart is a way to display the digits of a number in their correct position and determine the value of the digit. It is important that they use the structure of the number to model its digits.

**ASK** How can you determine the value of the 5 in each number? **Possible answer:** I can determine the value by recording each number in each place-value chart and then looking at the value of each digit's place.

**NOW,** have students solve the problem.

**ASK** How does knowing that each place has a value that is 10 times the value of the place to its right help you compare the value of the digits 5? **Possible answer:** The digit 5 in 50,000 is one place to the left of the digit 5 in 5,000, so it is 10 times the value of the digit 5 in 5,000.

**THEN,** have students use the **Compare and Connect** routine to discuss their thinking.

After students have completed the task, have them discuss how they compared the value of the two digits when the digits were in different numbers. Point out to students that they had to use the structure of a number to make the comparison.

TEACHING STRATEGY  
Common Error

If students use the place-value name of the digit with the greater value when comparing the values of the two digits, have them represent the value of the digit 5s with base-ten blocks above the columns of the place-value chart. Have students explain how many models for one place value are needed to create the model to its left. Students should recognize that each place value is 10 times the value of the place to its right as long as the digits they are comparing are the same.

(Student Edition p. 10)

Run in is now purple to match SE

## Beg Not in grades 1-5 2

## Task 3, continued

## STUDENT CONTENT

**Turn & Talk** What is another way you can compare the digits without using a place-value chart?

**Possible answer:** I know the position of the place values and that the value of each place represents a value 10 times the value of the place to its right, so I can write the name of the place.

## TEACHER GUIDE

**FINALLY,** have students use the **Turn & Talk** routine. Encourage students to come up with a variety of ideas, including visual models and using the word form of the number.

TEACHING STRATEGY  
Emergent Bilinguals

Students may demonstrate their understanding with drawings or base-ten blocks. Allow students to point or use gestures to make connections between the number, the place value chart, and their drawing or base-ten block representation. Allow students to reference their drawings and manipulatives to support their language about their method.

## Review Spark Your Learning

(5 minutes)

(Student Edition p. 10)

## TEACHER GUIDE

**NOW,** review **Spark Your Learning**.

**ASK** How would a place-value chart help you solve the problem?

**Possible answer:** I would draw a place-value chart for the periods Thousands, Hundreds, Tens, and Ones. Then in the row below the place-value positions, I would write the digit 1 in the first cell, 2 in the second cell, 4 in the third cell, and 0 in the last cell.

Use the feedback from student answers to inform your next steps in Differentiation and Practice.

Museum Insect Inventory	
Insect	Number
beetles	1,240
wasps	19,725
butterflies	11,100

**How might you use a place-value chart to help you solve the problem?**

TEACHING STRATEGY  
Emergent Bilinguals

Group students and allow students who share the same home language to work together. Have each student show their method for representing the beetles. Have each student demonstrate a new method for representing the number of beetles. Encourage students to speak about what they changed and why. To support their language, students may demonstrate a different method with base-ten blocks or drawings rather than speaking.

## Learn | Essential Sessions

**Assess****Quick Check**

🕒 15 minutes

**STUDENT CONTENT**

1. What is the value of the digit 9 in the number 396,002?

The value of the digit 9 is 90,000.

2. How does the value of the digit 4 in 274,513 compare to the value of the digit 4 in 47,329?

The digit 4 in 47,329 has the greater value.

3. There are over 2,000 different species of jellyfish. The largest species have tentacles 200 feet long. How does the value of the digit 2 in 2,000 compare with the value of the digit 2 in 200?

The value of the digit 2 in 2,000 is 10 times the value of the digit 2 in 200.

4.  ELP\$ Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed eleifend pharetra tellus. Lorem ipsum doloramet.

▢ Student Edition p. 11

**TEACHER GUIDE**

NOW, use the **Quick Check** to determine students' mastery of the lesson objectives. To measure all students' mastery of the language objective, ask them to use manipulatives to represent the value of a digit.

See the Language Development Resource Guide for a sample answer.

**TEACHING STRATEGY**  
**Emergent Bilinguals**

Use similar scaffolds to those provided in the Emergent Bilinguals Teaching Strategy for Spark Your Learning to ensure the students have appropriate representing supports.

Have students use a drawing to show the value of each digit in a number. Have students compare their drawings of each number to determine the relationships of the place values within each number.

**Learning Goal**

🕒 15 minutes

**STUDENT CONTENT**

I can use a place-value chart to compare the values of different digits and justify the comparisons.

Rate yourself on this learning goal:

- I don't understand.
- I need more practice.
- I've got it.

**TEACHER GUIDE**

FINALLY, use the **Learning Goal** routine to assess students' confidence with the lesson objective.

- Share the I Can statement with students again. Ask students to assess their learning individually.
- Review the class results and discuss how the data changed from the beginning of the session.
- Use these results and other data from today to plan differentiated instruction and future learning.

**End Essential Sessions**

UP NEXT: Differentiation and Practice

**HMH** Program Activity Report

Gathered Insights generate Program Activity Report

**Additional Styles****STUDENT CONTENT**

If student content includes blue annotations, as shown below, use the `paraph` style `p_student_blue_note`. Answer boxes use the `object` style `wo_box`. Size can be adjusted as needed.

$$\begin{array}{r}
 3.2 \\
 \times 8 \\
 \hline
 \end{array}$$

← 8 × 2 tenths  
← 8 × 3 ones  
← 8 × 3.2

If student content has words or numbers set in red, green, or blue, use the following character styles: `student_text_blue`, `student_text_red`, `student_text_green`

**STUDENT CONTENT**

See below for bullet list after `p_body`.

- `ul_bullet_stu_nsa`
- `ul_bullet_stu`

1. See below for bullet list after `ol_number-student` or `ol_number-student_nsa`

- `ul_bullet_stu_indent_nsa`
- `ul_bullet_stud_indent`

2. See below for bullet list after `ol_number-student` or `ol_number-student_nsa`

- `ul_bullet_stu_indent_nsa`
- `ul_bullet_stud_indent`

`p_body_center``p_body anno_italic`

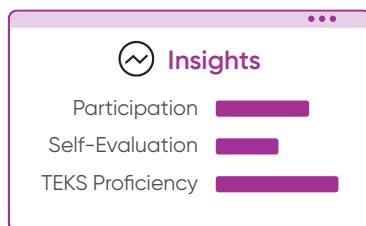
- A. `ol_alpha_sa`
- B. `ol_alpha_sa`
- C. `ol_alpha_sa`
- D. `ol_alpha_sa`

`wol_blank_inline` \_\_\_\_\_`p_handwriting`  $\frac{2}{5}$   
Fraction on a WOL  $\frac{1}{8}$ **CHANGES PER MOD COLOR****PROBLEM SOLVING****PROBLEM SOLVING****PROBLEM SOLVING**

# Differentiation and Practice

How can I use data to help me differentiate my instruction and practice?

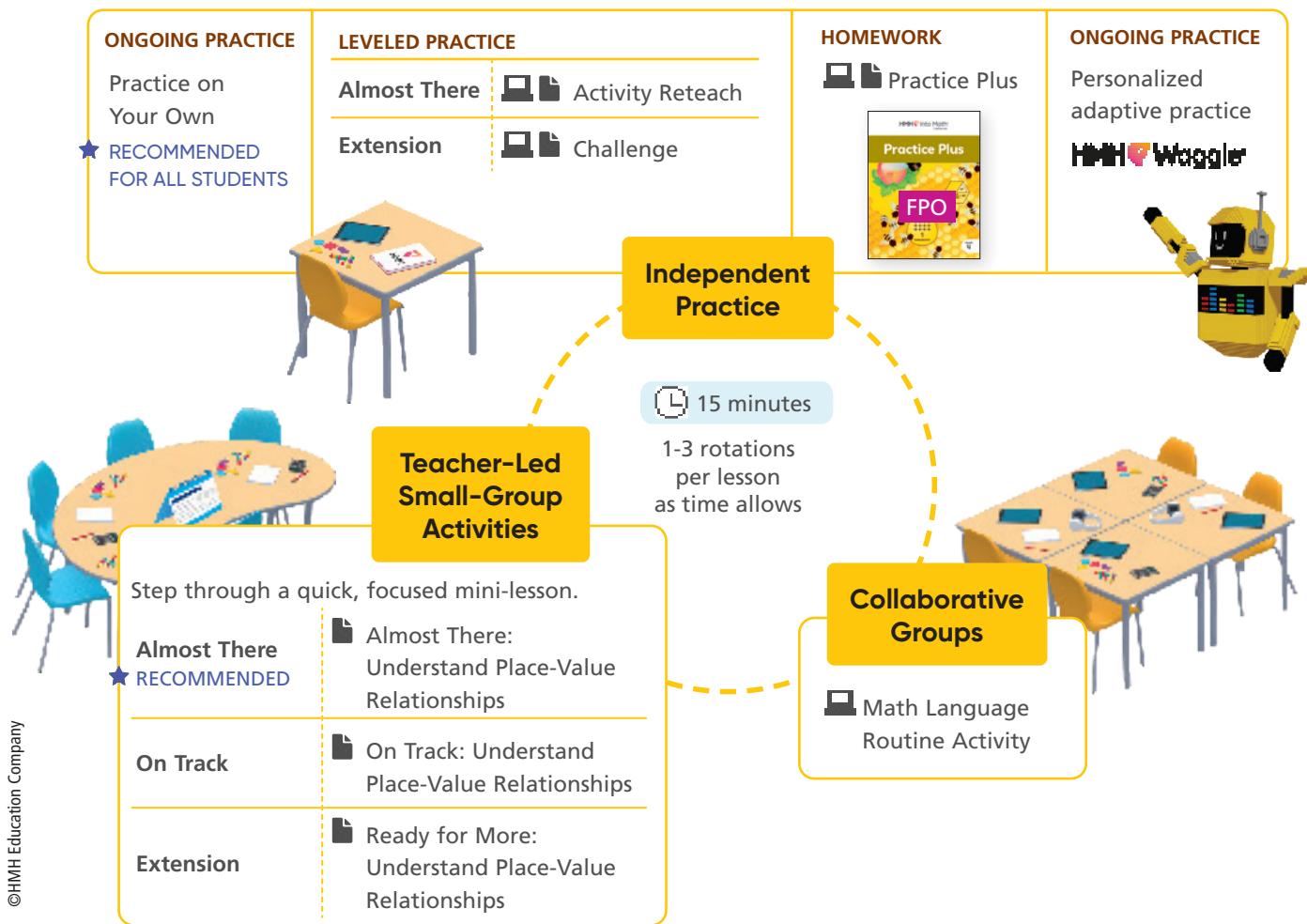
**FIRST**, use the Program Activity Report.



Review the data to determine a student's individual mastery of the Essential Session.

**THEN**, decide which students will best benefit from small-group instruction.

Work with additional groups as time allows. For students not currently working in teacher-led small-group activities, choose the best type of practice for them.



★ RECOMMENDED FOR ALL STUDENTS

## Practice on Your Own

Assign these problems to your students to solve independently.

Insights available from Assessment Report on Ed.

 Student Edition p. 12

## STUDENT CONTENT

## Practice on Your Own

- 1** In 2009, experts were called to a Baltimore wastewater treatment plant to remove orb weaving spider webbing. In the web samples that were removed, there were 31,194 spiders. Show the value of the digit 3 in two different ways. **3 ten thousands and 30,000**

- 2**  **Use Structure:** The praying mantis collection at a museum includes 13,000 specimens, while another museum has a collection of 300 specimens. How many times as great is the value of the digit 3 in 13,000 than the value of the digit 3 in 300? **10 times as great**

- 3** A beekeeper studies a colony of honeybees that has one queen bee, about 250 male drones, and about 37,250 female worker bees. Write the value of the digit 7 in 37,250 in two different ways. **7 thousands and 7,000**

- 4** One day, a cricket chirps 115,200 times. The next day it chirps 11,020 times. How many times as great is the value of the digit 2 in 115,200 than the value of the digit 2 in 11,020? How do you know?

Complete the sentence.

The value of the digit 2 in 115,200 is **10** times as great as the value of the digit 2 in 11,020 because the digit 2 in **11,020** is one place to the right of the digit 2 in **115,200**.

**Attend to Precision** Compare the values of the underlined digits. Then, complete the sentence.

- 5** 26,451 and 2,385

The value of the digit 2 in the number **26,451** is **10** times the value of the digit 2 in the number **2,385**.

- 6** 3,000 and 30,000  
The value of the digit 3 in the number **30,000** is **10** times the value of the digit 3 in the number **3,000**.

- 7** **Attend to Precision** Enter the digits for 23,518 in the top row of the place-value chart. Then complete the chart to find the value of each digit.

THOUSANDS			ONES		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
	2	3,	5	1	8
	2 ten thousands	3 thousands	5 hundreds	1 tens	8 tens
	20,000	3,000	500	10	8

Give the digit in its place-value position.

- 8** 5,619  
**5** thousands  
**6** hundreds  
**1** tens  
**9** ones

- 9** 605,981  
**6** hundred thousands  
**0** ten thousands  
**5** thousands  
**9** hundreds  
**8** tens  
**1** ones

## Practice On Your Own, continued

## Item Guide

Item #	DOK	 TEKS	Aligns to
<b>1</b>	2	4.6.A	Task 1
<b>2</b>	3	4.6.A	Task 1
<b>3</b>	2	4.6.A & B	Task 1
<b>4</b>	3	4.6.A	Task 2
<b>5–6</b>	3	4.6.A	Task 3
<b>7</b>	2	4.6.A	Task 2
<b>8–9</b>	1	4.6.A & B	Task 3

★ RECOMMENDED FOR ALL STUDENTS

## Practice on Your Own

Assign these problems to your students to solve independently.

 Insights available from Assessment Report on Ed. Student Edition p. 12

## STUDENT CONTENT

## Practice on Your Own

- 1** In 2009, experts were called to a Baltimore wastewater treatment plant to remove orb weaving spider webbing. In the web samples that were removed, there were 31,194 spiders. Show the value of the digit 3 in two different ways. **3 ten thousands and 30,000**

- 2**  **Use Structure:** The praying mantis collection at a museum includes 13,000 specimens, while another museum has a collection of 300 specimens. How many times as great is the value of the digit 3 in 13,000 than the value of the digit 3 in 300? **10 times as great**

- 3** A beekeeper studies a colony of honeybees that has one queen bee, about 250 male drones, and about 37,250 female worker bees. Write the value of the digit 7 in 37,250 in two different ways. **7 thousands and 7,000**

- 4** One day, a cricket chirps 115,200 times. The next day it chirps 11,020 times. How many times as great is the value of the digit 2 in 115,200 than the value of the digit 2 in 11,020? How do you know?

Complete the sentence.

The value of the digit 2 in 115,200 is **10** times as great as the value of the digit 2 in 11,020 because the digit 2 in **11,020** is one place to the right of the digit 2 in **115,200**.

**Attend to Precision** Compare the values of the underlined digits. Then, complete the sentence.

- 5** **26,451** and **2,385**

The value of the digit 2 in the number **26,451** is **10** times the value of the digit 2 in the number **2,385**.

- 6** **3,000** and **30,000**  
The value of the digit 3 in the number **30,000** is **10** times the value of the digit 3 in the number **3,000**.

- 7** **Attend to Precision** Enter the digits for 23,518 in the top row of the place-value chart. Then complete the chart to find the value of each digit.

THOUSANDS			ONES		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
	2	3,	5	1	8
	2 ten thousands	3 thousands	5 hundreds	1 tens	8 tens
	20,000	3,000	500	10	8

Give the digit in its place-value position.

- 8** 5,619  
**5** thousands  
**6** hundreds  
**1** tens  
**9** ones

- 9** 605,981  
**6** hundred thousands  
**0** ten thousands  
**5** thousands  
**9** hundreds  
**8** tens  
**1** ones

## Practice On Your Own, continued

## Item Guide

Item #	DOK	 TEKS	Aligns to
<b>1</b>	2	4.6.A	Task 1
<b>2</b>	3	4.6.A	Task 1
<b>3</b>	2	4.6.A & B	Task 1
<b>4</b>	3	4.6.A	Task 2
<b>5–6</b>	3	4.6.A	Task 3
<b>7</b>	2	4.6.A	Task 2
<b>8–9</b>	1	4.6.A & B	Task 3

★ RECOMMENDED FOR ALL STUDENTS

## Practice on Your Own

Assign these problems to your students to solve independently.

 Insights available from Assessment Report on Ed. Student Edition p. 12

## STUDENT CONTENT

## Practice on Your Own

- 1** In 2009, experts were called to a Baltimore wastewater treatment plant to remove orb weaving spider webbing. In the web samples that were removed, there were 31,194 spiders. Show the value of the digit 3 in two different ways. **3 ten thousands and 30,000**

- 2**  **Use Structure:** The praying mantis collection at a museum includes 13,000 specimens, while another museum has a collection of 300 specimens. How many times as great is the value of the digit 3 in 13,000 than the value of the digit 3 in 300? **10 times as great**

- 3** A beekeeper studies a colony of honeybees that has one queen bee, about 250 male drones, and about 37,250 female worker bees. Write the value of the digit 7 in 37,250 in two different ways. **7 thousands and 7,000**

- 4** One day, a cricket chirps 115,200 times. The next day it chirps 11,020 times. How many times as great is the value of the digit 2 in 115,200 than the value of the digit 2 in 11,020? How do you know?

Complete the sentence.

The value of the digit 2 in 115,200 is **10** times as great as the value of the digit 2 in 11,020 because the digit 2 in **11,020** is one place to the right of the digit 2 in **115,200**.

**Attend to Precision** Compare the values of the underlined digits. Then, complete the sentence.

- 5** **26,451 and 2,385**

The value of the digit 2 in the number **26,451** is **10** times the value of the digit 2 in the number **2,385**.

- 6** **3,000 and 30,000**  
The value of the digit 3 in the number **30,000** is **10** times the value of the digit 3 in the number **3,000**.

- 7** **Attend to Precision** Enter the digits for 23,518 in the top row of the place-value chart. Then complete the chart to find the value of each digit.

THOUSANDS			ONES		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
	2	3,	5	1	8
	2 ten thousands	3 thousands	5 hundreds	1 tens	8 tens
	20,000	3,000	500	10	8

Give the digit in its place-value position.

- 8** 5,619  
5 thousands  
6 hundreds  
1 tens  
9 ones

- 9** 605,981  
6 hundred thousands  
0 ten thousands  
5 thousands  
9 hundreds  
8 tens  
1 ones

## Practice On Your Own, continued

## Item Guide

Item #	DOK	 TEKS	Aligns to
<b>1</b>	2	4.6.A	Task 1
<b>2</b>	3	4.6.A	Task 1
<b>3</b>	2	4.6.A & B	Task 1
<b>4</b>	3	4.6.A	Task 2
<b>5–6</b>	3	4.6.A	Task 3
<b>7</b>	2	4.6.A	Task 2
<b>8–9</b>	1	4.6.A & B	Task 3

## Differentiation and Practice

# Module Review

45 minutes

Have students complete the Module Review to practice the module's content and prepare for the Module Test.

Assign the online version on Ed to generate data about class and student performance.

## Vocabulary

- addend
- estimate
- expanded form
- period
- place value
- regroup
- round
- standard form
- word form

Use the WTL routine where it makes sense to support all students.

■ Student Edition p. 57

## Vocabulary

### STUDENT CONTENT

Use vocabulary words to complete the sentence.

- The standard form of a number uses the digits 0-9, with each digit having a place value.
- Three hundred sixty-two is an example of the word form of a number.

- A(n) estimate is a number that is close to the exact amount.
- A number that is added to another number is called a(n) addend.

## Concepts and Skills

■ Student Edition p. 57

### STUDENT CONTENT

-  **Use Structure:** Choose all the ways to regroup

- |                  |                   |
|------------------|-------------------|
| (A) 42 hundreds  | (D) 420 tens      |
| (B) 42 thousands | (E) 420 ones      |
| (C) 4,200 ones   | (F) 420 thousands |

- The value of the digit 2 in 321,705 is \_\_\_\_\_ times the value of the digit 2 in 32,571.

Which is the correct value that completes the sentence?

- (A) 10      (B) 100      (C) 1,000      (D) 10,000

- What is  $200,000 + 80,000 + 500 + 70 + 1$  written in standard form? 280,571

- In the United States, about 620,000 dogs that enter animal shelters as strays are returned to their owners. Which numbers round to 620,000 when rounded to the nearest ten thousand? Choose all that apply.

- |             |             |
|-------------|-------------|
| (A) 619,000 | (D) 625,000 |
| (B) 605,000 | (E) 614,000 |
| (C) 621,000 |             |

- Which comparisons are true? Choose all that apply.

- (A)  $37,940 > 37,939$   
 (B)  $473,248 = 473,248$   
 (C)  $16,105 = 16,103$   
 (D)  $801,269 > 801,296$   
 (E)  $37,340 < 37,890$

- Which shows the numbers ordered correctly from least to greatest? Choose all that apply.

- (A) 32,245; 32,452; 32,425  
 (B) 304,561; 305,561; 306,561  
 (C) 817,902; 871,029; 871,092  
 (D) 216,135; 261,532; 216,153  
 (E) 86,109; 96,869; 169,715

### STUDENT CONTENT, CONTINUED

- Estimate the sum to the nearest hundred thousand.

$$\begin{array}{r} 480,321 \\ + 341,569 \\ \hline 800,000 \end{array}$$

- Determine the sum.

$$\begin{array}{r} 480,321 \\ + 341,569 \\ \hline 821,890 \end{array}$$

- Estimate the difference to the nearest ten thousand.

$$\begin{array}{r} 68,652 \\ - 16,867 \\ \hline 50,000 \end{array}$$

- Determine the difference.

$$\begin{array}{r} 68,652 \\ - 16,867 \\ \hline 51,785 \end{array}$$

- The library collected 2,532 books on Friday. The library collected 1,286 more books on Saturday than on Friday. How many books were collected on Saturday? 3,818 books

## Data-Driven Support



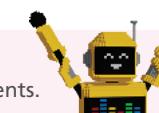
Use the table below to find the recommended reteaching resources, found on Ed.

Item	Content Focus	TEKS	Reteach Activity
5	Regroup and rename whole numbers.	4.6.A	Regroup and Rename Numbers
6	Understand place value relationships.	4.6.A	Understand Place-Value Relationships
7	Read and write multi-digit whole numbers.	4.6.A & B	Read and Write Numbers
8	Use place value understanding to round whole numbers.	4.6.A	Use Place-Value Understanding to Round Numbers
9	Compare two whole numbers.	4.6.A	Compare and Order Numbers
10	Order whole numbers.	4.6.A	Compare and Order Numbers
11	Add whole numbers and determine if an answer is reasonable.	4.6.A & B	Add Whole Numbers and Assess Reasonableness
12	Subtract whole numbers and determine if an answer is reasonable.	4.6.A	Subtract Whole Numbers and Assess Reasonableness
13	Add and subtract to solve comparison problems.	4.6.A & B	Use Addition and Subtraction to Solve Comparison Problems

## Adaptive Skill Development:



Use Waggle, with its skill-driven AI engine to provide targeted support to your students.



New TEKS column

## Module Test

45 minutes



Assign the Module Test online or print it out to evaluate students' mastery of concepts and skills taught in the module.

## Assign online:

- Use the test as is.
- Remove, edit, or add items based on students' needs.
- Review Standards Report to determine student mastery and growth as well as anticipate future remediation needs.

## Use offline:

- Start with the editable Module Test.
- Adapt the test according to students' needs.

## Available Assessments

- **Module Test Form A/B:** Multi-Digit Numbers
- **Editable Module Test Form A/B:** Multi-Digit Numbers

The image shows a laptop screen displaying a digital version of the Grade 4 • Module 2 Test • Form A. The test consists of several math problems. Problem 1 asks, "How many toothpicks are in the box?" with a picture of a football-shaped box containing toothpicks. Problem 2 is a word problem about Jaime and Chris having paper clips. Problem 3 is another word problem about Lars dividing students into groups. There are sections for "Cover Choice(s)" and "New reduxes". The right side of the screen shows a grid of math problems for students to solve, with handwritten answers like "Jaime 30" and "Jaime 35" visible. The bottom of the screen shows the footer "Grade 4 • Module 2 Test • Form A © HMH Education Company".