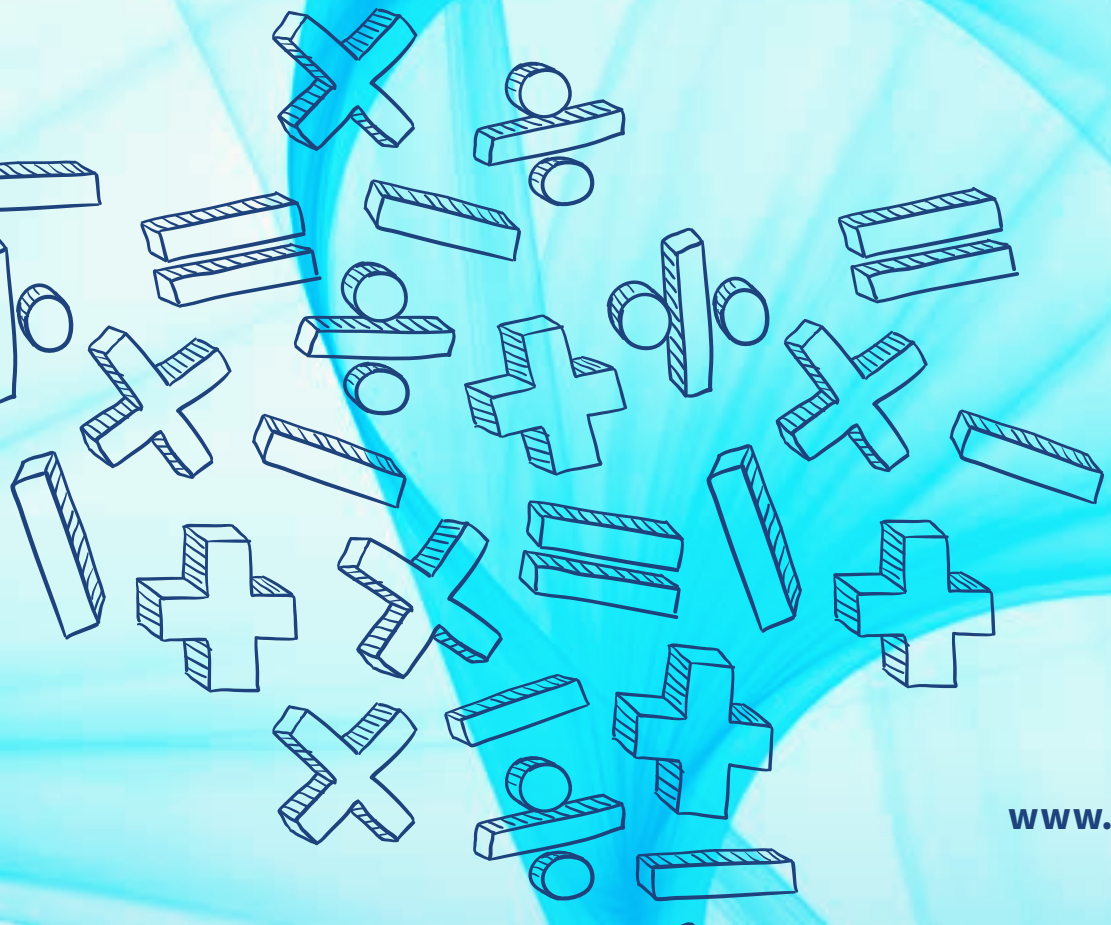
STEMscopes™ MATH

5TH GRADE
TEACHER LESSON SAMPLE

MODEL THE FOUR OPERATIONS WITH DECIMALS



www.stemscopes.com/math

Discover the wonder of mathematics in our everyday world with STEMscopes Math. Built from the ground up by practicing educators using the flexible 5E lesson model, STEMscopes Math provides you with everything you need to create a meaningful learning experience.

LEARNING WITHIN A REAL-WORLD, RELEVANT CONTEXT

Student learning is rooted in real-world scenarios. Real-world connection provides teachers a way to foster an understanding and appreciation for numbers by focusing on the relationship between mathematical concepts and students' experiences and interests. When real-world connection is incorporated into lessons, students can see how math fits into their daily lives.

STEMscopes Math uses the Hook, Explore Activities, and Problem-Based Tasks to engage students in real-world situations where math skill is needed. Life Connections, Career Connections, Math Today! News, and Math Story incorporate math into the everyday experiences and careers that students may encounter outside of the classroom.

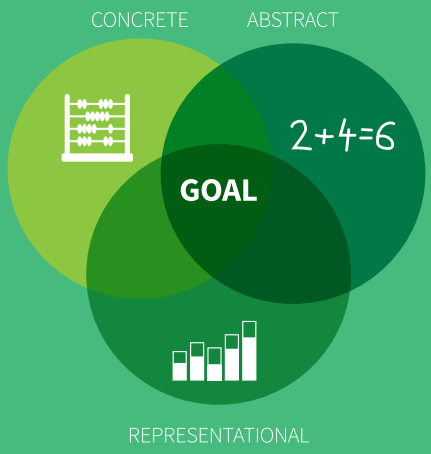
DESIGNED FOR NEW AND VETERAN TEACHERS

Every STEMscopes Math lesson is built to the standards, from the ground up. Chunking information into bite-size pieces, we make our units (called "scopes") digestible and engaging. Whether you're a new or veteran teacher, STEMscopes Math provides everything you need to create a meaningful learning experience.

CONCRETE-REPRESENTATIONAL-ABSTRACT (CRA) APPROACH

The CRA model is a powerful strategy for teaching new math concepts. It is a three-part constructivist process that transitions students from hands-on learning to the math we use as adults. As students progress through the Explore Activities (Lessons), they will transition from hands-on experiences with concrete objects to representational, pictorial models and ultimately arrive at symbolic representations, using only numbers, notations, and mathematical symbols.

Since state assessments often require students to solve problems at all three levels, the CRA model helps students succeed in high-stakes testing. Research-based studies show that students who use concrete materials to learn math develop more precise and comprehensive mental representations, show more motivation and on-task behavior, understand mathematical ideas, and better apply these ideas to life situations.



PROMOTING EQUITY

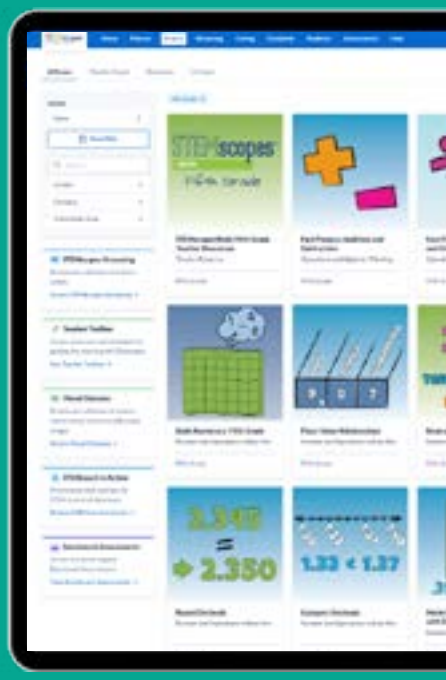
Implementing STEMscopes Math in the classroom provides every student access to high-quality, challenging learning opportunities. The activities within the program are scaffolded and differentiated so that all students find the content accessible, relatable, and challenging. The emphasis on collaborative learning and intentional discourse within the STEMscopes program promotes a sense of community in the classroom where students can learn from each other.

DIGITAL, PRINT, AND KITS

We are committed to delivering flexible, differentiated, student-centered instructional content through our digital platform, and we're all about making life easier for teachers.

DIGITAL CURRICULUM

Our **digital platform** allows you to assign work directly to student accounts, push content to Google Classroom, print materials on demand, and use our lessons in a whole-group or blended learning setting. Find coherent, 5E-based lessons that align with standards and seamlessly flow from one activity to the next.



Print and hands-on kits bring digital learning and real-world instruction together. These supplemental resources establish a concrete connection between school and home, helping teachers make education more equitable.

STUDENT PRINT

HANDS-ON KITS

STANDARDS

Aligning our math program to standards is at the core of what we do. STEMscopes Math fully supports your state standards, no matter where you are.

HOME

This is where you will find your lesson planning materials so you can facilitate fun, purposeful experiences for your students. Build your content knowledge, review the scope's standards, and access parent materials in the Home section.

ENGAGE

The Engage section lays the foundation for learning. You begin by pre-assessing students and filling knowledge gaps. The Hook lays out a storyline narrative to establish a purpose for learning and capture students' attention with real-world connections.

EXPLORE*

This is where students dig into the content. The Explore section includes scaffolded hands-on activities that build toward mastery of the standards. Each Explore prompt encourages rich mathematical discourse and student reasoning, and concludes with an Exit Ticket.

EXPLAIN*

Paired with Explore, the Explain section offers a variety of resources that connect the experiences of the Explore activities to the academic content students need to know. These resources include illustrated vocabulary cards, independent practice, and journal prompts that support the Explore activities and solidify student learning.

ELABORATE*

Workstations are a go! The Elaborate section makes differentiation a cinch with ready-made activities—digital and paper-based games, spiraled review, career connections, literacy connections, and more—perfect for rotations! Students continue learning while you make time for small group interventions and independent projects to support your struggling and advanced learners.

**Instructional elements in STEMscopes Mathematics are intended to work together. The elements in the Explain and Elaborate sections can be used to support student learning and provide opportunities for practice while students explore the concept.*

EVALUATE

Get the data you need from the assessment tools provided in the Evaluate section. From multiple choice-based assessments to an open-ended reasoning prompt, there's an evaluation for every student's learning style. You can also create your own assessments using the assessment builder tool.

INTERVENTION

Useful during Elaborate or as an after-school support, Intervention is a small hands-on activity designed to target students' conceptual misunderstanding while building their math skills. This is also a great re-teach and test prep tool!

ACCELERATION

Are your students ready to go above and beyond with what they've learned? In the Acceleration section, students complete a design challenge and relate learning to current events around the world. The activities prompt them to think more deeply about the content and its applications.

DIGITAL CURRICULUM SAMPLE

To review the lesson resources in the digital Fifth Grade Scope, *Model the Four Operations with Decimals*, access our digital curriculum sample at **www.stemscopes.com/math/national/curriculum-sample** and choose the Fifth Grade level on the left *Grades* menu bar.

Fifth Grade
SAMPLE LESSON

SCOPE (UNIT) **Model the Four Operations with Decimals**
EXPLORE (LESSON) **Adding Decimals**

The following pages introduce resources to help you get the most out of your STEMscopes Math Grade 5 lesson. You will also notice we've provided supportive unit resources that would allow you to plan lessons throughout the year using STEMscopes Math.

This sample lesson ***does not include*** all the elements and features of our digital and print math curriculum.

RESOURCE LIST

The following resources, as well as additional resources not listed, can be found in the digital curriculum *Grade 5 Scope, Model the Four Operations with Decimals.*

HOME

- Student Expectations
- Key Concepts
- Scope Overview
- Parent Letter

TEACHER TOOLBOX

- Scope List
- Scope and Sequence
- Lesson Planning Guide for 1-3 Explores
- Lesson Planning Guide for 3-5 Explores

EXPLORE

- Explore 1: Adding Decimals*

ELABORATE

- "Risky Wagers" Fluency Builder*

EXPLAIN

- Vocabulary Cards*

DAILY NUMERACY

- "Not Like the Others" Activity*

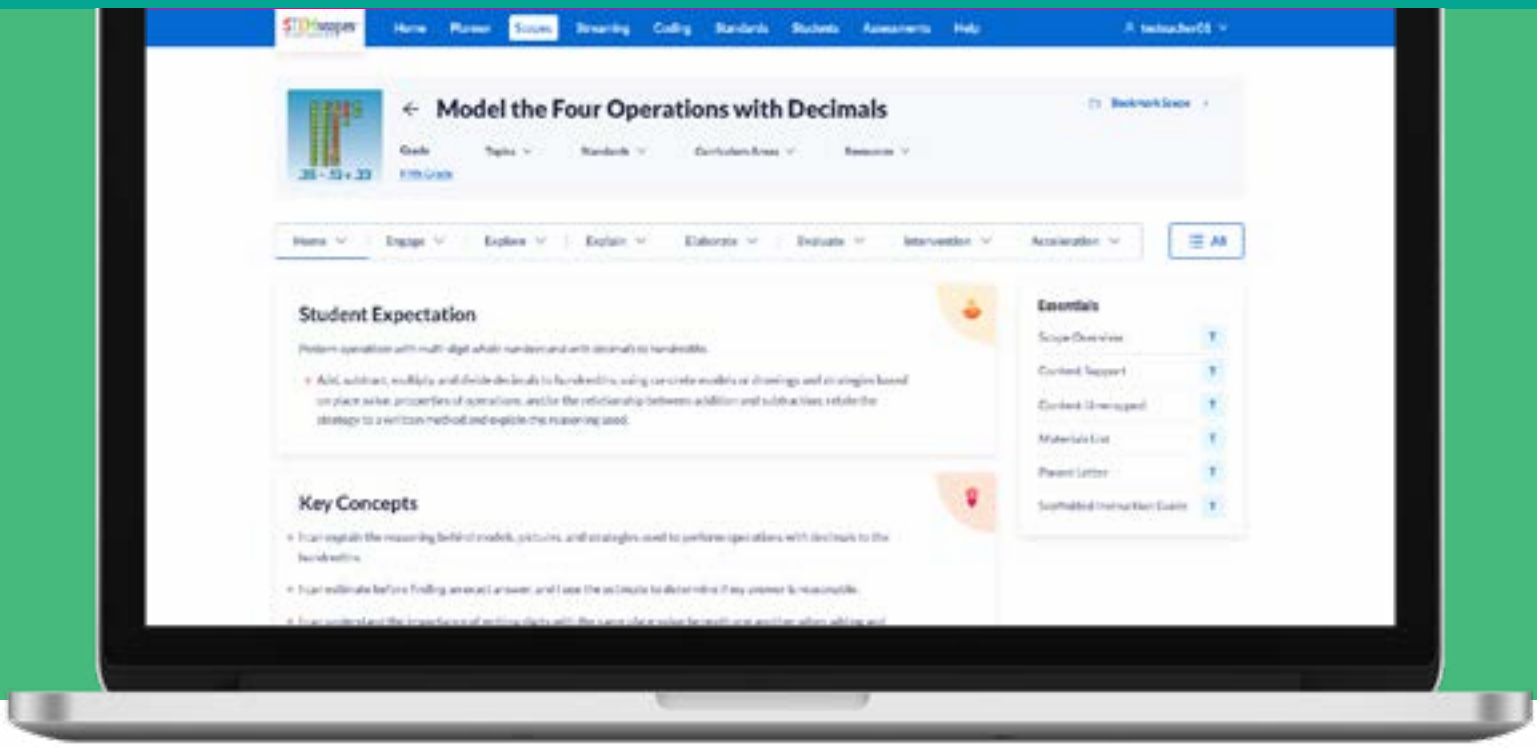
FACT FLUENCY

- "Nines" Mini-Lesson*

**These activities are samples and do not represent all the activities and resources within our digital and print curriculum.*

Fifth Grade SAMPLE LESSON

SCOPE (UNIT) **Model the Four Operations with Decimals**



STUDENT EXPECTATIONS

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

- Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

KEY CONCEPTS

- I can explain the reasoning behind models, pictures, and strategies used to perform operations with decimals to the hundredths.
- I can estimate before finding an exact answer, and I use the estimate to determine if my answer is reasonable.
- I can understand the importance of writing digits with the same place value beneath one another when adding and subtracting.
- I can make a connection between the processes of adding and subtracting decimals, and adding and subtracting fractions.
- I can use and describe the partial products displayed in an area model.
- I can use and describe models that separate decimal values into equal parts in determining the number of equal parts and the number of groups.

Scope Overview: Model the Four Operations with Decimals

Standards

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

- Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Engage

- Accessing Prior Knowledge: Four Operations with Whole Numbers
- Foundation Builder: Four Operations with Whole Numbers
- Hook: Slumber Party Shopping

If the APK reveals that students are not ready, move to the Foundation Builder!

Explore

- Explore 1: Adding Decimals
  - Exit Ticket
  - Show What You Know: Part I
- Explore 2: Subtracting Decimals
  - Exit Ticket
  - Show What You Know: Part II
- Explore 3: Multiply Decimals – Place Value
  - Exit Ticket
  - Show What You Know: Part III
- Explore 4: Multiply Decimals – Arrays and Area Models
  - Exit Ticket
  - Show What You Know: Part IV
- Explore 5: Divide Decimals – Place Value
  - Exit Ticket
  - Show What You Know: Part V
- Explore 6: Divide Decimals – Arrays and Area Models
  - Exit Ticket
  - Show What You Know: Part VI

Home

- Scope Overview
- Content Support
- Standards Unwrapped

Elaborate

- Fluency Builder
  - Baseball
  - Jeopardy
  - Mark the Spot
- Spiraled Review
  - Yard Sale Treasurer
- Math Story: A Tale of Two Beverages
- Problem-Based Task: The Big Send-Off
- Interactive Practice: Dungeon Maze
- Career Connections: Werner Stengel

Explain

- Picture Vocabulary
- Show What You Know
- My Math Thoughts
- Anchor Chart
- Interactive Notebook

Once all of the Explores have been taught, go back to the Hook for students to apply knowledge learned.

Evaluate

- Decide and Defend: A Night at the Movies
- Multiple Choice Assessment
- Skills Quiz

Intervention

- Small-Group Intervention
- Checkup

Acceleration

- Math Today: New Horizons Mission
- Create Your Own: Computer Software Program

Instructional elements in STEMscopes Mathematics are intended to work together. The elements in the Explain and Elaborate sections can be used to support student learning and provide opportunities to practice while the students are exploring the concept.

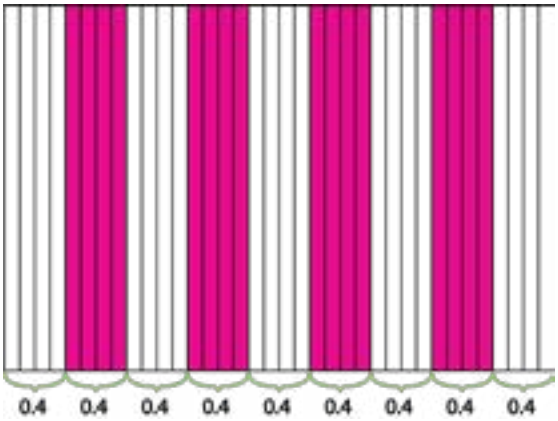
Fifth Grade – Model the Four Operations with Decimals

Dear Parents,

Your child is about to explore modeling the four operations with decimals. To master this skill, your child will build on his or her knowledge of decimals from fourth grade. In fourth grade, your child learned all four operations with decimals to the hundredths and compared decimals using visual models. As your child extends his or her knowledge of this concept throughout fifth grade, he or she will learn the following concepts:

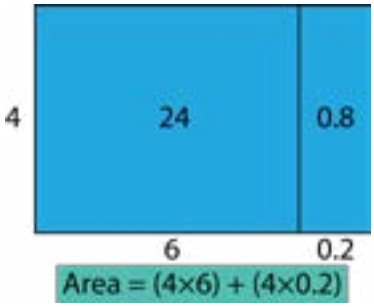
- Apply knowledge of decimals to the hundredths to add, subtract, multiply, or divide using concrete models, strategies based on place value, and properties of operations.

  Example: Isabella has 3.6 meters of ribbon. She wants to equally share her ribbon with four friends. How much ribbon will each friend receive?



Three wholes and six tenths are represented in an area model. The three wholes are decomposed into tenths so equal groups of tenths can be shared. When the 36 tenths are divided into groups of four, there are 0.9 equal groups. Each friend will receive 0.9 meters of ribbon.

Example: What number completes the equation 4 × 6.2 = ?



	2	4	.	0
+		0	.	8
	2	4	.	8

The partial-product strategy applies the associative property of multiplication to an area model. 6.02 is decomposed into two factors: six and 0.2. Then, four times six is 24, and four times 0.2 is 0.8. The partial products are added together, arriving at a final product of 24.8.

While working with your child at home, the following vocabulary terms might be helpful in your communication about modeling all four operations with decimals. These are terms your child will be encouraged to use throughout our explorations and during our math chats, which are short, whole-group discussions at the conclusion of each activity.

- **Terms to Know**
  - **addends:** the numbers added together to form a sum
  - **addition:** two or more numbers (or things) joined together to make a new total
  - **algorithm:** a procedural set of steps used to efficiently compute an answer
  - **area model:** a model where the length and width represent the factors and are configured through the operation of multiplication
  - **associative property of multiplication:** when multiplying three numbers, the placement of the grouping symbols does not affect the product, $(a \times b) \times c = a \times (b \times c)$
  - **decimal:** a number that uses a decimal point followed by digits that show a value smaller than one, in powers of ten that decrease
  - **decimal form**: a number that uses a decimal point followed by digits showing values less than one
  - **difference:** a number that is the result of subtraction
  - **digit:** a single symbol used to create a numeral, such as 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9
  - **divide:** to separate or group a number into equal parts or fair shares
  - **dividend:** the number you divide into; the number that is partitioned into equal parts
  - **divisor:** the number you divide by; the amount of equal groups that the dividend is partitioned into
  - **estimation:** an approximate value used to determine a reasonable calculation to solve a problem about the cost, size, or value of something
  - **equation:** a mathematical sentence that uses numbers, one or more operation symbols, and an equal sign
  - **factor:** a number multiplied by another number to get a product; goes evenly into another number
  - **hundredths place:** the second digit to the right of the decimal point; represents the part of the whole that is out of 100
  - **minuend:** a number or quantity from which another number is to be subtracted (Example: 7 – 4 = 3. The number seven is the minuend.)
  - **multiplicand:** the number that is multiplied by another number
  - **multiplication:** a mathematical operation consisting of repeated addition (through various strategies) to obtain the product (answer)
  - **multiplier:** the quantity that the multiplicand is multiplied by
  - **partial product:** the product of the multiplicand and one digit of the multiplier
  - **partitive division**: solving to determine the number in each group in a problem when the number of groups is known
  - **product:** the answer to a multiplication problem
  - **properties of operations:** attributes or characteristics of mathematical processes
  - **quotative division:** solving to determine the number of groups (unknown) in a problem when the number in each group is known
  - **quotient:** the answer to a division problem
  - **rounding:** the process of raising or lowering a number to a specific place value position; represents an approximate worth

- **subtract**: to take one number away from another number
- **subtrahend:** a quantity or number to be subtracted from another
- **sum:** the answer to an addition problem
- **tenths place:** the first digit to the right of the decimal point; represents the part of the whole that is out of 10

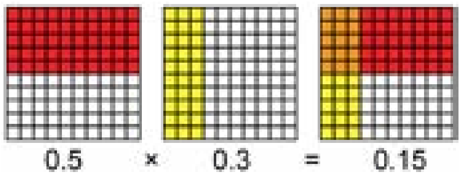
We will do many explorations in class to help your child learn these concepts from firsthand experiences. Encourage your child to share these experiences with you and to teach you what he or she has learned. Ask your child to identify examples of what he or she is learning in everyday life, such as finding the total amount spent when shopping.

Thank you for your support as your child begins this new learning adventure.

Sincerely,

Tic-Tac-Toe: Try This at Home

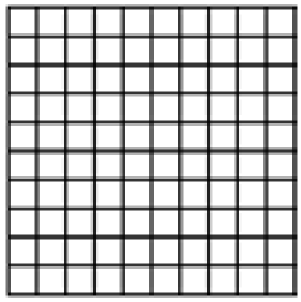
Hundredths Models



To multiply 0.5 × 0.3, color 5-tenths or 5 rows. Then color 3-tenths or 3 columns. Where they cross is the answer (0.15 or 15 hundredths).

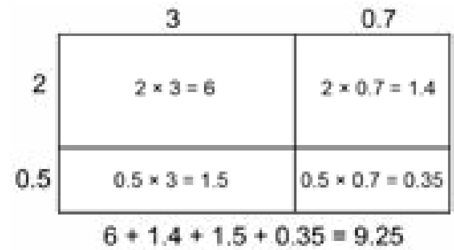
Your Turn Using Hundredths

Multiply 0.6 × 0.4 using the hundredths model.



Answer:

Partial Products Area Model



To multiply 2.5 × 3.7, use the area model. Decompose each place value and multiply. Add partial products. **Answer = 9.25**

Add with Regrouping

Add the ones place value (5 + 8 = 13). Split the 13. The 3 stays, and the 1 gets regrouped and added to the top of the next place value column. Add the tens column (1 + 8 + 3 = 12). Split the 12. Continue.

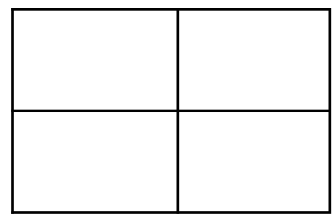
1	***1 1***	
5. 8 **5**	5 .8 5	4 .7 2
+ 3. 3 **8**	**+** 3 . 3 8	+ 5 .8 9
3	**9 .2 3**	

Solve 4.72 + 5.89 in the space above.

Free Space

Your Turn Using Partial Products

Multiply 4.3 × 5.2 using the partial products model.



Add partial products:

Answer:

Subtract to Find the Difference

When a problem is written horizontally, rewrite the problem vertically. The first number goes on top. The second number goes on the bottom. Line up the decimal points. Regroup if needed.

Example: 3.89 – 1.43 = ?

You Try: 889.34 – 786.55

 3.89
–1.43
 2.46

Area Model Division Step 1

11.7 ÷ 3 = ?

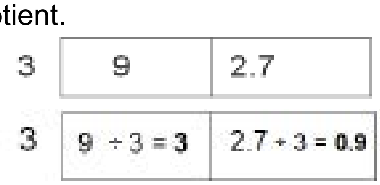
Step 1: Decompose the decimal dividend (11.7) into multiples of the divisor (3), and write those place values inside the two boxes. Think, "The closest multiple of 3 before 11.7 is 9 with 2.7 left over."

So decomposing 11.7 is 9 + 2.7.

Continue →

Area Model Division Steps 2 and 3

Step 2: After writing both decomposed numbers in the two boxes, divide by 3 to get a partial quotient.



Step 3: Add the partial quotients for your final quotient:

3 + 0.9 = 3.9

Final answer: **11.7 ÷ 3 = 3.9**

Fifth Grade Scope List

Scope Name	Explores	Suggested Pacing
Place Value Relationships	3 Explores	1-2 Weeks
Read and Write Decimals	2 Explores	1 Week
Round Decimals	1 Explores	1 Week
Compare Decimals	2 Explores	1 Week
Model the Four Operations with Decimals	6 Explores	2 Weeks
Multiply Multi-Digit Whole Numbers	1 Explore	1 Week
Divide Multi-Digit Whole Numbers	3 Explores	1-2 Weeks
Add and Subtract Fractions	4 Explores	1-2 Weeks
Model Fraction Multiplication	3 Explores	1-2 Weeks
Multiplication Problem Solving Using Fractions	3 Explores	1 Week
Fractions as Division	3 Explores	1 Week
Divide Unit Fractions	5 Explores	1-2 Weeks
Numerical Expressions	3 Explores	1 Week
Classify Two-Dimensional Figures	3 Explores	1-2 Weeks
Unit Conversions	4 Explores	1 Week
Represent Measurement with Line Plots	1 Explore	1 Week
Volume in Cubic Units	1 Explore	1 Week
Apply Volume Formulas	3 Explores	1-2 Weeks
Graph on a Coordinate Plane	3 Explores	1-2 Weeks
Generate and Graph Numerical Patterns	2 Explores	1-2 Weeks

STEMscopes Math Suggested Scope and Sequence

The STEMscopes Math program is flexible, and there are variations in implementation within the guidelines provided here. This Scope and Sequence is meant to serve as a tool for you to lean on as you find how STEMscopes Math best meets the needs of the students in your classroom.

FIFTH GRADE

Week	Scope	Clusters
1	• Establish classroom procedures • **Pre-Assessment Benchmark**	Major
2	• Place Value Relationships	Major
3	• Place Value Relationships	Major
4	• Read and Write Decimals	Major
5	• Round Decimals	Major
6	• Compare Decimals	Major
7	• Model the Four Operations with Decimals (addition)	Major
8	• Model the Four Operations with Decimals (subtraction)	Major
9	• Model the Four Operations with Decimals (multiplication)	Major
10	• Model the Four Operations with Decimals (division)	Major
11	• Multiply Multi-Digit Whole Numbers	Major
12	• Divide Multi-Digit Whole Numbers	Major
13	• Divide Multi-Digit Whole Numbers	Major
14	• Add and Subtract Fractions	Major
15	• Add and Subtract Fractions	Major
16	• Model Fraction Multiplication	Major
17	• Multiplication Problem Solving Using Fractions	Major
18	• Fractions as Division	Major
19	• Divide Unit Fractions	Major
20	• Numerical Expressions • **Mid-Assessment Benchmark**	Major/Additional
21	• Classify Two-Dimensional Figures	Additional
22	• Unit Conversions	Supporting
23	• Represent Measurement with Line Plots	Supporting

Week	Scope	Clusters
24	• Volume in Cubic Units	Major
25	• Apply Volume Formulas	Major
26	• Apply Volume Formulas	Major
27	• Graph on a Coordinate Plane	Additional
28	• Graph on a Coordinate Plane	Additional
29	• Generate and Graph Numerical Patterns	Additional
30	• **Review Week**	Major
31	• **STANDARDIZED TEST (Approximate)**	Major
32	Review: • Place Value Relationships • Read and Write Decimals • Compare Decimals	Major
33	Review: • Model the Four Operations with Decimals • Multiply Multi-Digit Whole Numbers • Divide Multi-Digit Whole Numbers	Major
34	Review: • Add and Subtract Fractions • Model Fraction Multiplication • Multiplication Problem Solving Using Fractions • Fractions as Division	Major
35	Review: • Divide Unit Fractions • Numerical Expressions • Classify Two-Dimensional Figures • Unit Conversions	Major/Supporting/Additional
36	Review: • Represent Measurement with Line Plots • Apply Volume Formulas • Graph on a Coordinate Plane • Generate and Graph Numerical Patterns	Supporting/ Additional

Week	Daily Numeracy
All	Additional or repeated standards are addressed in Daily Numeracy. These activities should be rotated through daily. To see the full list of what standards are addressed in these activities, please see the Daily Numeracy: Standards by Activity section in the Daily Numeracy Teacher Toolbox.

Whole Group Plan

1–3 Explores

*Based on 90-minute class period	Day 1	Day 2	Day 3	Day 4	Day 5
Whole Group	Fact Fluency/Daily Numeracy Accessing Prior Knowledge Foundation Builder[1] Hook Begin Explores if time allows. Anchor Chart	Fact Fluency/Daily Numeracy Explores[2] Anchor Chart Exit Tickets Show What You Know (Assist and reteach as needed.)	Fact Fluency/Daily Numeracy Explores (continued) Anchor Chart Exit Tickets Show What You Know (Assist and reteach as needed.)	Fact Fluency/Daily Numeracy Hook (Post-Explore) Teacher Choice[3] All students: • Picture Vocabulary • My Math Thoughts • Career Connection Mastery Level: • Decide and Defend • Math Today • Create Your Own Meets Level: • Math Story • Problem-Based Task Approaching Level: • Interactive Practice • Skills Quiz	Fact Fluency/Daily Numeracy Small-Group Intervention (for students who need it) Fluency Builder (choose one) (for students who don't need intervention)
Assessment and Closure	Accessing prior knowledge to determine readiness Formative assessment based on APK and student performance on Explore Allow students to share what they felt successful with and what they struggled with today.	Administer the exit ticket to assess student learning after the Explore. Allow students to work on Show What You Know – Part I as independent practice after first Explores.	Administer the exit ticket to assess student learning after the final Explores. Allow students to work on Show What You Know – Part 2 as independent practice after Explore 2.	Assess how students perform based on individual assignments chosen.	Standards-Based Assessment

[1]Use as intervention if APK shows foundational gaps.
[2]Set your pace according to the number of Explores included in this scope. Use Exit Tickets as well as Show What You Knows for each Explore completed.
[3]Teachers can choose from the following elements. We have suggested activities for students, including recommended tasks for students at each skill level.

Small Group Plan

1–3 Explores

*Based on 90-minute class period	Day1	Day 2	Day 3	Day 4	Day 5
Whole Group ***20 Minutes**	Daily Numeracy Accessing Prior Knowledge[1] Hook Introduce stations.	Daily Numeracy Allow students to share what they learned yesterday, and discuss what students worked on. Anchor Chart	Daily Numeracy Allow students to share what they learned yesterday, and discuss what students worked on. Anchor Chart Add Picture Vocabulary words to word wall based on terms introduced in the lessons.	Daily Numeracy Hook (Post-Explore) Review any Explore or Show What You Know problems that gave students trouble. Anchor Chart	Daily Numeracy Spiraled Review Standards-Based Assessment
Small Group Instruction *Small Group/ Stations 70 Minutes	Pull small groups of students to do: 1. The Foundation Builder (if they need previous grade level content) 2. Explores 1[2]–2	Pull students to work with you to finish Explores 1–2.	Pull students to work with you on Explores 2–3.	Pull students to do the small group intervention based on needs.	None
Stations ***Options are flexible.**	1. Fact Fluency 2. Interactive Practice 3. Fluency Builder 4. Career Connection 5. Spiraled Review 6. Show What You Know	1. Fact Fluency 2. Interactive Practice 3. Fluency Builder 4. My Math Thoughts 5. Spiraled Review 6. Show What You Know	1. Fact Fluency 2. Interactive Practice 3. Fluency Builder 4. Math Story 5. Spiraled Review 6. Show What You Know	Have students work in groups on the Problem-Based Task.	Have the following materials available for students who finish early: 1. Fact Fluency 2. Decide and Defend 3. Skills Quiz 4. Create Your Own 5. Math Today 6. Spiraled Review
Assessment and Closure	Accessing prior knowledge to determine readiness Formative assessment based on APK and student performance to determine who needs to be pulled to small group Allow students to share what they felt successful with and what they struggled with today.	Administer the exit tickets to assess student learning after the Explores. Allow students to work on Show What You Knows as independent practice after Explores.	Administer the exit tickets to assess student learning.	Student success with intervention can be assessed by using the Checkup. Other students can be assessed by their performance on the Problem-Based Task.	Standards-Based Assessment

[1]Use as intervention if APK shows foundational gaps.
[2]Set your pace according to the number of Explores included in this scope. Use Exit Tickets as well as Show What You Knows for each Explore completed.

Whole Group Plan

3–5 Explores

Week 1 *Based on 90-minute class period	Day 1	Day 2	Day 3	Day 4	Day 5
Whole Group	Fact Fluency/Daily Numeracy Accessing Prior Knowledge Foundation Builder[1] Hook (Pre-Explore)	Fact Fluency/Daily Numeracy Explores[2] Anchor Chart Exit Tickets Show What You Know (Assist and reteach as needed.)	Fact Fluency/Daily Numeracy Explores (continued) Anchor Chart Exit Tickets Show What You Know (Assist and reteach as needed.)	Fact Fluency/Daily Numeracy Explores (continued) Anchor Chart Exit Tickets Show What You Know (Assist and reteach as needed.)	Fact Fluency/Daily Numeracy Explores (continued) Anchor Chart Exit Tickets Show What You Know (Assist and reteach as needed.)
Assessment and Closure	Accessing prior knowledge to determine readiness Formative assessment based on APK and student performance on Explore Allow students to share what they felt successful with and what they struggled with today.	Administer the Exit Ticket to assess student learning after the Explore. Allow students to work on Show What You Know as independent practice after Explores.	Administer the Exit Ticket to assess student learning after the Explores. Allow students to work on Show What You Know as independent practice after Explores.	Administer the Exit Ticket to assess student learning after the Explores. Allow students to work on Show What You Know as independent practice after Explores.	Administer the Exit Ticket to assess student learning after the Explores. Allow students to work on Show What You Know as independent practice after Explores.

[1]Use as intervention if APK shows foundational gaps.
[2]Set your pace according to the number of Explores included in this scope. Use Exit Tickets as well as Show What You Knows for each Explore completed.

Whole Group Plan

3–5 Explores

Week 2 *Based on 90-minute class period	Day 6	Day 7	Day 8	Day 9	Day 10
Whole Group	Fact Fluency/Daily Numeracy Explores (continued) Anchor Chart Exit Tickets Show What You Know (Assist and reteach as needed.)	Fact Fluency/Daily Numeracy Hook (Post-Explore) Picture Vocabulary My Math Thoughts Math Today Career Connection	Fact Fluency/Daily Numeracy Math Story Problem-Based Task	Fact Fluency/Daily Numeracy Teacher Choice[3] Meets Level: • Decide and Defend • Create Your Own Approaching Level: • Interactive Practice • Skills Quiz	Fact Fluency/Daily Numeracy Small-group Intervention (for students who need it) Fluency Builder (choose one.) (for students who do not need intervention)
Assessment and Closure	Accessing prior knowledge to determine readiness Formative assessment based on APK and student performance on Explore Allow students to share what they felt successful with and what they struggled with today.	Allow students to share what they felt successful with and what they struggled with today.	Assess how students perform on the Problem-Based Task.	Assess how students perform based on individual assessment chosen.	Standards-Based Assessment

[3]Choose from the following elements. We have suggested activities for students, including recommended tasks for students at each skill level.

Small Group Plan

3–5 Explores

Week 1 *Based on 90-minute class period	Day 1	Day 2	Day 3	Day 4	Day 5
Whole Group *20 Minutes	Daily Numeracy Accessing Prior Knowledge[1] Hook (Pre-Explore) Introduce stations.	Daily Numeracy Allow students to share what they learned yesterday, and discuss what students worked on.	Daily Numeracy Allow students to share what they learned yesterday, and discuss what students worked on. Anchor Chart Add Picture Vocabulary words to word wall based on terms introduced in the lessons.	Daily Numeracy Allow students to share what they learned yesterday, and discuss what students worked on. Anchor Chart Review any Explore or Show What You Know problems that gave students trouble.	Daily Numeracy Allow students to share what they learned yesterday, and discuss what students worked on. Anchor Chart Review any Explore or Show What You Know problems that gave students trouble.
Small Group Instruction *Small Group/ Stations 70 Minutes	Pull small groups of students to the Foundation Builder (if they need previous grade-level content). Begin Explores.[2]	Pull students to work with you on Explore 1.	Pull students to work with you on Explore 2.	Pull students to work with you on Explore 3.	None
Stations	1. Fact Fluency 2. Interactive Practice 3. Fluency Builder (from previous scope)	1. Fact Fluency 2. Interactive Practice 3. Fluency Builder (from previous scope)	1. Fact Fluency 2. Interactive Practice 3. Fluency Builder (from previous scope)	1. Fact Fluency 2. Interactive Practice 3. Fluency Builder (from previous scope)	1. Fact Fluency 2. Decide and Defend 3. Skills Quiz
Assessment and Closure	Accessing prior knowledge to determine readiness Formative assessment based on APK and student performance to determine who needs to be pulled to small group Allow students to share what they felt successful with and what they struggled with today.	Administer the Exit Ticket to assess student learning after the Explores. Allow students to work on Show What You Knows as independent practice after Explores.	Administer the Exit Ticket to assess student learning after the Explores. Allow students to work on Show What You Knows as independent practice after Explores.	Administer the Exit Ticket to assess student learning after the Explores. Allow students to work on Show What You Knows as independent practice after Explores.	Administer the Exit Ticket to assess student learning after the Explores. Allow students to work on Show What You Knows as independent practice after Explores. Decide and Defend Skills Quiz

[1]Use as intervention if APK shows foundational gaps.
[2]Set your pace according to the number of Explores included in this scope. Use Exit Tickets as well as Show What You Knows for each Explore completed.

Small Group Plan

3–5 Explores

Week 2 *Based on 90-minute class period	Day 6	Day 7	Day 8	Day 9	Day 10
Whole Group *20 Minutes	Daily Numeracy Allow students to share what they learned yesterday, and discuss what students worked on. Anchor Chart Review any Explore or Show What You Know problems that gave students trouble.	Daily Numeracy Allow students to share what they learned yesterday, and discuss what students worked on. Anchor Chart Review any Explore or Show What You Know problems that gave students trouble.	Daily Numeracy Allow students to share what they learned yesterday, and discuss what students worked on. Add Picture Vocabulary words to word wall based on terms introduced in the lessons.	Daily Numeracy Allow students to share what they learned yesterday, and discuss what students worked on. Review any Explore or Show What You Know problems that gave students trouble.	Daily Numeracy Spiraled Review Standards-Based Assessment
Small Group Instruction *Small Group/ Stations 70 Minutes	Pull students to work with you on Explore 4.	Pull students to work with you on Explore 5.	Hook (Post-Explore)	Small-Group Intervention	None
Stations	1. Career Connection 2. Spiraled Review 3. Show What You Know	1. My Math Thoughts 2. Spiraled Review 3. Show What You Know	1. Math Story 2. Spiraled Review 3. Show What You Know	Have students work in groups on the Problem-Based Task.	Have the following materials available for students who finish early: 1. Create Your Own 2. Math Today 3. Spiraled Review
Assessment and Closure	Accessing prior knowledge to determine readiness Allow students to share what they felt successful with and what they struggled with today.	Administer the Exit Tickets to assess student learning after the Explores. Allow students to work on Show What You Knows as independent practice after Explores.	Administer the Exit Tickets to assess student learning.	Student success with intervention can be assessed by using the Checkup. Other students can be assessed by their performance on the Problem-Based Task.	Standards-Based Assessment

[1]Use as intervention if APK shows foundational gaps.
[2]Set your pace according to the number of Explores included in this scope. Use Exit Tickets as well as Show What You Knows for each Explore completed.

Model the Four Operations with Decimals

SAMPLE

Explore 1 - Adding Decimals

Description

Students will focus on adding whole numbers and decimals to the hundredths place.

Standards for Mathematical Practice

- **MP.2 Reason abstractly and quantitatively:** Students will represent decimals, focused on their values, with any of the four operations using concrete models or strategies. They connect the models/strategies to a written method with the ability to explain their reasoning. Estimation is used before solving as students concentrate on the quantities and operation involved.
- **MP.3 Construct viable arguments and critique the reasoning of others:** Students will make conjectures and explore their solutions, looking for evidence of proof as they determine the concrete model or strategy needed to solve a decimal problem. Students listen to others asking clarifying questions and expecting feedback. They may provide counterexamples to justify conclusions.
- **MP.4 Model with mathematics:** Students are provided multiple opportunities to reason about the operations with decimals. Concrete models, drawings, and strategies are to be provided and explored. Using the models, students are able to analyze place value relationships within the decimal problem, determine a strategy, draw conclusions, and provide a written method with an explanation of their reasoning.
- **MP.5 Use appropriate tools strategically:** Students consider the tools and strategies available when solving a decimal problem. Decimal squares, number lines, estimation, strategies based on place value, properties of operations, and the relationship between addition and subtraction are all to be accessible for students to use. The tools used help develop the magnitude of a decimal and build students' decimal number sense. Proficient students make intentional decisions on the most efficient tool(s) needed for them to be able to represent and explain their thinking.

- **MP.7 Look for and make use of structure:** Students look closely to discern how to best represent a decimal problem. They note patterns in the structures of tenths and hundredths. The visual models chosen provide structure for students to use as they solve. Explanations must be precise and clearly communicated.

Materials

Printed

1 Student Journal (per student)
1 Set of Scenario Cards (per group)
2 Place Value Mats (per group)
1 Exit Ticket (per student)

Reusable

1 Clear sheet protector (per student)
1 Set of base ten blocks (per group)

Consumable

1 Dry-erase marker (per student)
1 Tissue or dry eraser (per student)

Preparation

- Place students in groups of three to four.
- Print the Student Journal and the Exit Ticket for each student.
- Print and cut out a set of Scenario Cards for each group.
- Print 2 Place Value Mats on card stock for each group. Note that the wholes and decimal parts are on two separate papers. Each complete mat will be used for one addend.
- For students who need more support in recalling information, please see our Open Number Line, Base Tens and Decimal Frame Supplemental Aids elements in the Intervention section.
- **Go Digital!** Have students explore or present their solutions using virtual manipulatives! The manipulatives used in this lesson can be found in the Explore drop-down menu and can be digitally assigned to students.

Procedure and Facilitation Points

1. Read the following scenario:
    a. *Mr. Huntley makes wooden signs for friends and family. He has decided that he wants to build other things too! Help Mr. Huntley figure out the total amount of wood needed for his different projects.*
2. Pass out a set of base ten blocks, Scenario Cards, and 2 complete Place Value Mats to each group. Distribute a Student Journal to each student.
3. Students should begin by reading the first Scenario Card and discussing with their group members what is happening in the problem.
4. Explain to students that we are going to change our whole. Instead of the unit cube as a value of 1, we are going to use the 100 flat as the value of 1.
5. Have the students work together to discuss and solve the following questions. Allow time for students to discuss and then share.
    a. **DOK-1** If the 100 flat has a value of 1, what is the value of the rod? 0.1 or $\frac{1}{10}$
    b. **DOK-1** If the rod has a value of 0.1 or $\frac{1}{10}$, what is the value of the unit? 0.01 or $\frac{1}{100}$
6. Next ask students to discuss and then share how they use place value when adding whole numbers. Listen and guide students as they talk within their groups before sharing. Students must have the following understanding:
    a. Digits 0–9 have a different value depending on the position in a number.
    b. Add whole numbers with like units, such as the digits in the ones place are added, the digits in the tens place are added, the digits in the hundreds place are added, etc.

   c. Regrouping or renaming numbers to add. 79 + 8—add 9 ones and 8 ones and regroup to have 1 ten and 7 tens to make 87. Students may rename 7 tens to make 79 ones to add 8 ones. Emphasize the same units that must be added.

7. Explain to students that adding decimals is the same as when they add with whole numbers.
   a. Digits have different values depending on the position in a number.
   b. Decimals use the base ten format the same as our whole numbers.
   c. Add the same units such as ones added with ones, tenths added with tenths, and hundredths added with hundredths.
   d. Flexible thinking by decomposing your digits and then composing your numbers to combine the values.
8. Students should use the base ten blocks to model the numbers being added on their Place Value Mats. Each number should be modeled on its own Place Value Mat before they are added together.
9. Ask students before they begin adding the decimals to refer back to the scenario.
   a. **DOK-2** About how many feet do you think Mr. Henley will need for his project? Students should estimate the sum for 2.8 and 1.48. Listen to students' understanding of place value and estimation. Answers may vary. I can see 8 tenths is close to a whole, so 2 and 1 more whole is 3. 48 hundredths is closer to 0 on the number line, so 1.48 is around 1 whole. Therefore, 3 + 1 is 4 wholes. I think 2.8 + 1.48 is about 4.
10. Students will then combine the amounts and record the totals. If needed, students should regroup 10 of a place value for one of the next-highest place value or rename to add the values.
11. As students are working, circulate around the room and discuss the following:
    a. **DOK-2** What did you have to do if there were 10 or more in one place value? We had to take 10 of them and regroup them for one of the next-highest place value. When we added that one on, we had to make sure we included that regrouped amount in the total.
    b. **DOK-2** Why do you think the Place Value Mat has the place values lined up? You need to find the total for each place value. You have to combine place values that are the same.
12. Ask students if their estimations were close to their solutions. Discuss why or why not.
13. Representing the number that was built with base ten blocks, students should shade in grids and record an equation on their Student Journals. Students should repeat this process for each Scenario Card.
14. After the Explore, invite the class to a Math Chat to share their observations and learning.

Math Chat	
Questions	**Sample Student Responses**
DOK-2 How did the scenario or context help you estimate your solution?	The scenario helps you understand approximately how many objects or wholes you should have and reasons on whether the answer makes sense to the scenario.
DOK-2 How did you use the grid models to add your whole numbers and decimals?	Answers may vary depending on the strategy students used. I shaded in all the whole numbers and then the hundredths. I noticed I was able to make another whole number, so I moved my shading around to represent the new number. I shaded in my hundredths first, then my tenths, and last my ones. I was able to make another whole number, so I shaded in another whole grid.
DOK-2 What strategies did you use to add the whole numbers and decimals?	Answers may vary. Listen for place value understanding and flexible thinking.
DOK-2 What connections can you make between adding whole numbers and adding whole numbers with decimals?	They are very similar. When adding whole numbers and adding with decimals, the placement of the digits is important. The value of each digit depends on its place in the number. When adding, the place values must be the same for both numbers—tenths with tenths, hundredths with hundredths, and so on.

15. When students are done, have them complete the Exit Ticket to formatively assess their understanding of the concept.

Instructional Supports

1. Students may struggle to determine which base ten blocks represent the numbers in the problem. If so, have them focus on one place value at a time. It might be helpful to have them lay out the blocks for the whole numbers first. If those are correct, have them attempt the tenths and hundredths places.

2. If students are struggling with adding each place value, remind them that they could draw number lines to help them represent each column in the problem.

3. It might be helpful to carry a zip-top bag filled with base ten blocks. If students are struggling with regrouping in the addition problems, they might benefit from physically trading in their base ten blocks. For example, when a group reaches 10 rods, they can ask you to trade them in for one flat. Doing this will ensure students are regrouping properly while they are working through the problem.

Language Acquisition Strategy

The following Language Acquisition Strategy is supported in this Explore activity. See below for ways to support a student's English language development.

Provide prereading skills and supports for students prior to the activity, including illustrations and pictorial vocabulary related to each word problem.

- Before beginning the lesson, preread the work mat and word problem with students and discuss what each is asking. Determine key information in each word problem.
- Students might benefit from the addition of pictures (such as that of a patio, treehouse, etc.) for each word problem.
- Furthermore, a pictorial list of vocabulary words related to lumber, such as wood, lumber, trim, and siding, could help students determine the meanings of the word problems.

Explore

Name: _____ Date: _____

Mr. Huntley's Woodshop

Estimate each scenario, and write in the estimation. Shade the grid models, and solve each scenario as you build with base ten blocks. Write your equation and solution sentence to represent each scenario.

Mr. Huntley's Patio

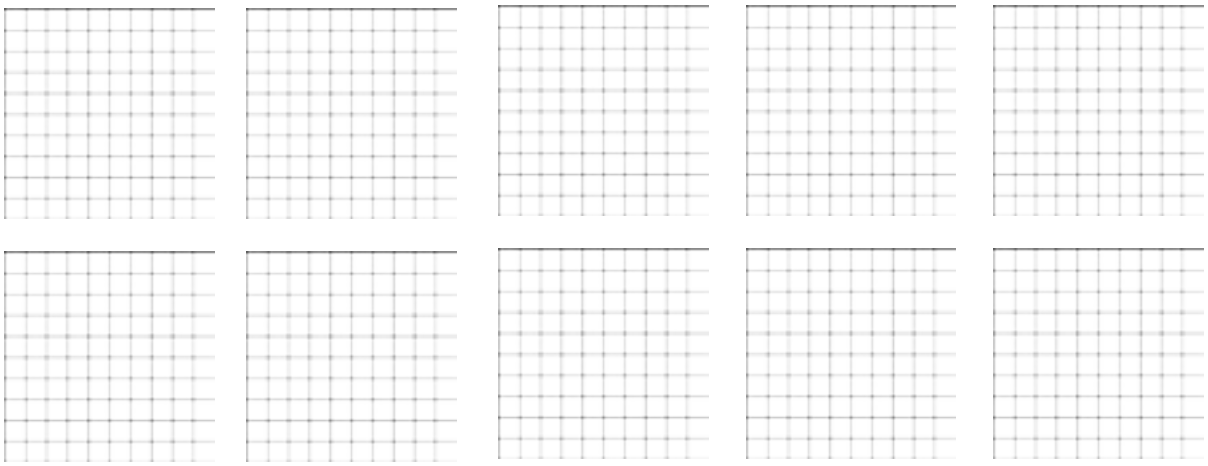
Model

Estimate: Equation:

Solution Sentence:

Neighbor's House Repairs

Model



Estimate:

Equation:

Solution Sentence:

Reflect

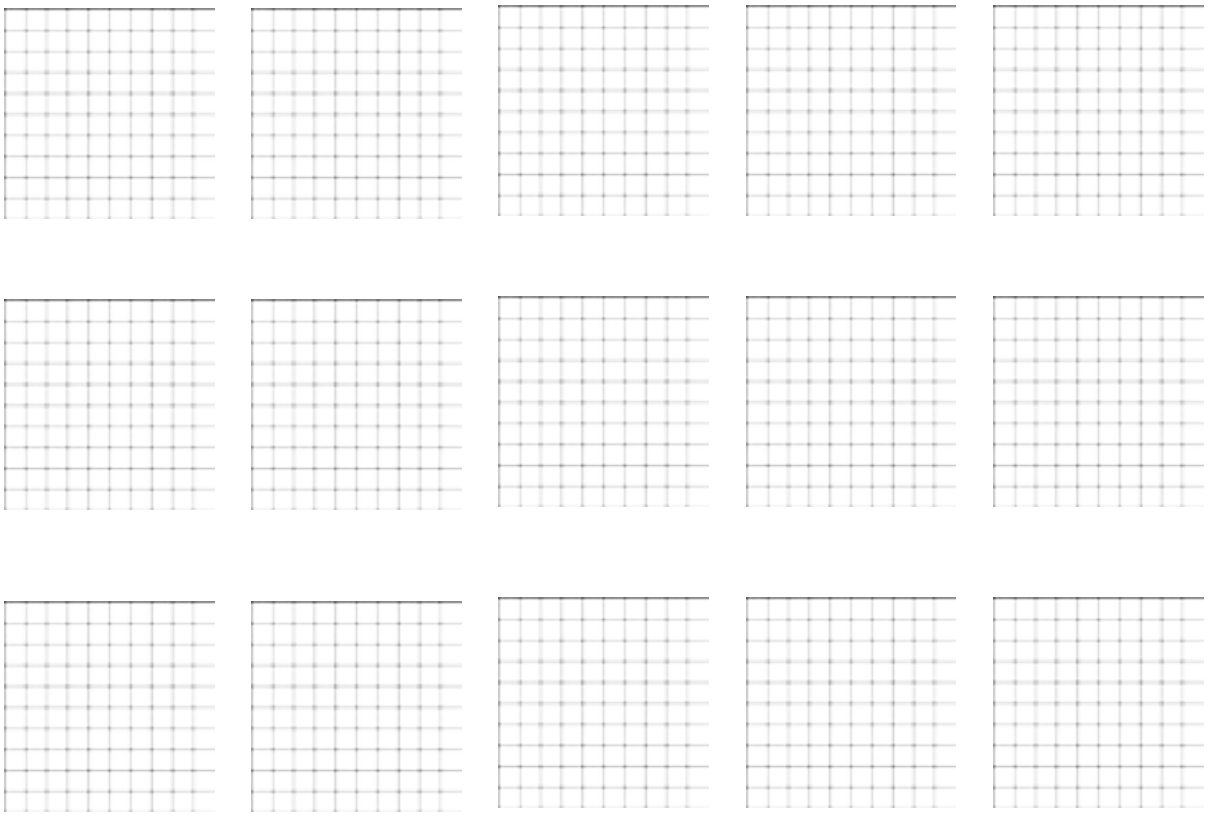
How does the scenario or context help you estimate your solution? Was your estimation correct?

How did you use the grid models to add your whole numbers and decimals?

Explore

Mr. Huntley's Tree House

Model



Estimate:

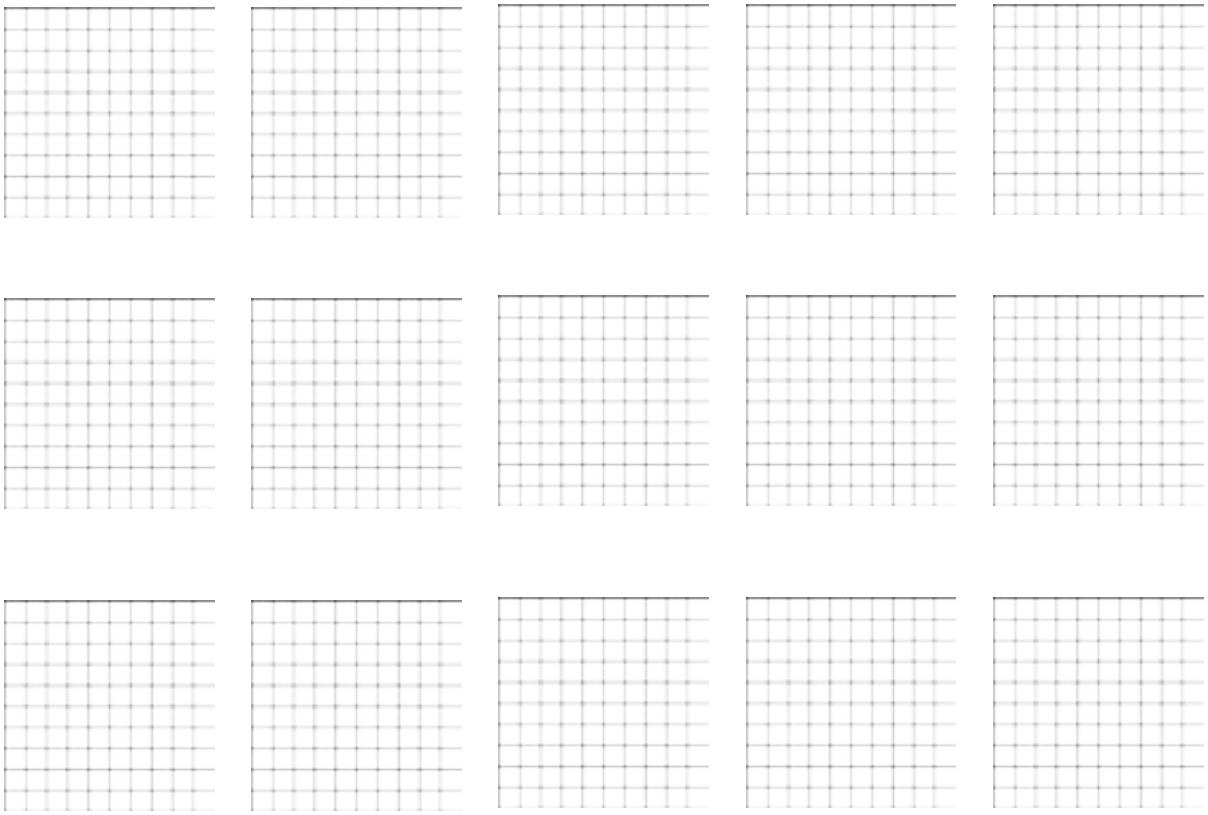
Equation:

Solution Sentence:

Explore

Mr. Huntley's Picnic Table

Model



Estimate:

Equation:

Solution Sentence:

Reflect

What strategies did you use to add the whole numbers and decimals?

_____

_____

_____

_____

What connections can you make between adding whole numbers and adding whole numbers with decimals?

_____

_____

_____

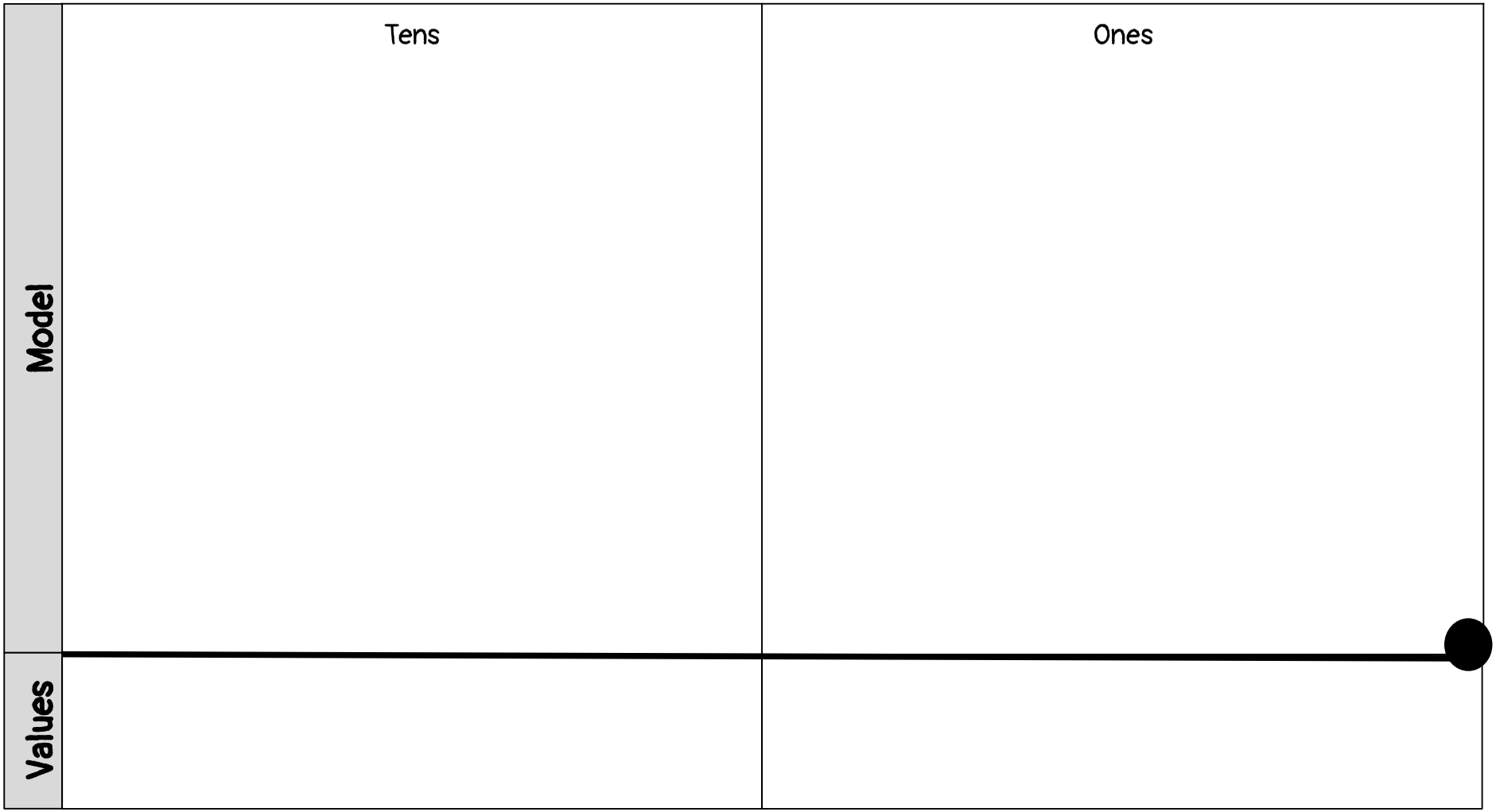
_____

Scenario Cards

Mr. Huntley's Patio Mr. Huntley wants to build a patio onto his house. He has some wood left over from another project, but not enough. He will need 2.8 feet of wood for the sides and 1.48 feet of wood for the top. How many feet of wood does Mr. Huntley need?	**Neighbor's House Repairs** Mr. Huntley's neighbor would like to replace some rotten wood on his house. He figured he needed 6.4 feet of lumber, plus an additional 2.75 feet for trim around a window. How much lumber will his neighbor need to buy?
Mr. Huntley's Treehouse Mr. Huntley's kids would like him to build them a treehouse. He has some wood, but not enough for the project. Mr. Huntley needs 9.29 feet of lumber for the frame and 3.8 feet of lumber for the siding. How much wood does Mr. Huntley need for the treehouse?	**Mr. Huntley's Picnic Table** Mr. Huntley decided to build a picnic table. He will need 8.6 feet of wood for the top and legs and 5.35 feet of wood for the seats. How many feet of wood does Mr. Huntley need?

Explore

Place Value Mat
Whole



Parts

Tape page one of Place Value Mat here	Tenths	Hundredths

Explore

Name: _____ Date: _____

Car Pool!
Exit Ticket

It's your family's turn to lead the car pool this week. From your house to Sasha's house, it is 4.12 miles, and from Sasha's house to the school, it is a total distance of 3.6 miles. How far do you travel every day to get to school during car pool week?

Grid Models

Equation	Solve

Solution Statement

Math Chat

Math Chat
How did the scenario or context help you estimate your solution?
How did you use the grid models to add your whole numbers and decimals?
What strategies did you use to add the whole numbers and decimals?
What connections can you make between adding whole numbers and adding whole numbers with decimals?

Math Chat

Model the Four Operations with Decimals
Explore 1

Question 1:

How did the scenario or context help you estimate your solution?

Math Chat

Question 2:

How did you use the grid models to add your whole numbers and decimals?

Math Chat

Model the Four Operations with Decimals
Explore 1

Question 3:

What strategies did you use to add the whole numbers and decimals?

Math Chat

Question 4:

What connections can you make between adding whole numbers and adding whole numbers with decimals?

Model the Four Operations with Decimals SAMPLE

Fluency Builder - Risky Wagers

Description

Students play this game in small groups. They solve problems within three categories at varying levels that apply multiplication of decimals.

Materials

Printed

1 Instruction Sheet (per group)
1 Set of Category Cards (per group)
1 Student Recording Sheet (per player)

Reusable

12 Envelopes (per group)

Consumable

Scratch paper (per student, as needed)

Preparation

- Copy and cut out a set of Category Cards for each group. Each category has a title card.
- For each title, set up four envelopes by gluing the Value Card on one side and the Question Card on the other side and then placing the Answer Card inside the envelope.
- Print one Student Recording Sheet for each student and one Instruction Sheet for each group.

Procedure and Facilitation Points

1. Once the card sets have been prepared, have student groups sit in a circle and determine player order. The player with the fewest letters in his or her first name goes first.
2. Students set up their game board by placing the category title cards in the top row and placing each value envelope in rows, from least to greatest and beneath their categories, with the value side faceup and the question side facedown.
3. At each turn, the player selects a category and a value envelope (the higher the value, the more challenging the question). The player reads aloud the question and works out the solution, using scratch paper as needed.
4. Once a solution has been determined, the player explains his or her work to the group (make sure students are effectively communicating their thinking and taking time to explain all steps of their work). Then, the player checks the answer key inside the envelope. If the answer is correct, the player copies the solution onto the recording sheet and earns the point value of the envelope. The Answer Card is returned to the envelope, and the envelope is placed beneath the category title card (it cannot be played again). If the answer is incorrect, the player loses the point value of the card and places the envelope in a side pile (which is revisited by the group at the end of the game). Students should use the recording sheet to keep track of scores.
5. When all envelopes have been removed, the player with the most points wins.
6. If any envelopes were placed in a side pile, the group must work together to find the correct answers; assist them as needed. Students should show their work for these problems on the recording sheet.
7. If time remains, have groups discuss which problems they worked on together at the end of the game. Have them explain why these problems were tricky and how they were able to work together to find the correct answers.

Fluency Builder

Risky Wagers

Play this game in a group of three to five.

You Will Need

- 1 Category Card Set (per group)
- 1 Student Recording Sheet (per player)
- Scratch paper (as needed)

How to Play

1. Sit in a circle, and determine player order. The player with the fewest letters in his or her first name goes first.
2. Set up the game board. Place the category title cards in the top row. Place each value envelope in rows, from least to greatest and beneath their categories, with the value side faceup and the question side facedown.
3. At each turn, the player selects a category and value envelope (the higher the value, the more challenging the question). The player reads the question aloud and works out the solution, using scratch paper as needed.
4. Once a solution has been determined, the player explains his or her work to the group and checks the answer card inside the envelope. If the answer is correct, the player copies the Answer Card onto the recording sheet and earns the point value of the envelope. The answer card is returned to the envelope, and the envelope is placed beneath the category title card (it cannot be played again). If the answer is incorrect, the player loses the point value of the card and places the envelope in a side pile (which will be revisited by the group at the end of the game). The player's turn is over. Use the recording sheet to keep track of scores.
5. When all envelopes have been removed, the player with the most points wins.
6. If any cards were placed in a side pile, the group must work together to find the correct answers. Show your work for these problems on the recording sheet.

Fluency Builder

Category Cards

(Place each along the top row.)

Construction 
Farm Stand 
Calculations 

Fluency Builder

Model the Four Operations with Decimals

Value Cards

(Glue each onto the front of an envelope.)

Construction  5 Points	Farm Stand  5 Points	Calculation  5 Points
Construction  10 Points	Farm Stand  10 Points	Calculation  10 Points
Construction  15 Points	Farm Stand  15 Points	Calculation  15 Points
Construction  20 Points	Farm Stand  20 Points	Calculation  20 Points

Fluency Builder

Construction Questions (Glue each onto the back of an envelope.)	**Construction Answers** (Place each answer inside the corresponding envelope.)
Construction 5 Points Baseboards cost $11.20 each. What is the cost of 4 baseboards?	Construction 5 Points $44.80
Construction 10 Points The family game room measures 9.2 meters by 4.5 meters. How many square meters cover the floor space?	Construction 10 Points 41.4 square meters
Construction 15 Points Crushed stone costs $40 per ton. What is the the cost of 3.25 tons of stone?	Construction 15 Points $130
Construction 20 Points A bathroom floor measures 12.5 feet by 9.2 feet. It costs $3.50 for a 1-square-foot tile. How much will it cost to tile the entire bathroom floor?	Construction 20 Points $402.50

Fluency Builder

Farm Stand Questions (Glue each onto the back of an envelope.)	**Farm Stand Answers** (Place each answer inside the corresponding envelope.)
Farm Stand 5 Points Corn costs $0.50 per cob. What is the cost of 9 cobs?	Farm Stand 5 Points $4.50
Farm Stand 10 Points Beans cost $1.42 per pound. How much will a bag of beans that weighs 0.5 pound cost?	Farm Stand 10 Points $0.71
Farm Stand 15 Points Apples cost $1.20 per pound, and blueberries cost $1.40 per pound. What is the total cost of 2 pounds of apples and 1.5 pounds of blueberries?	Farm Stand 15 Points $4.50
Farm Stand 20 Points Tomatoes cost $2.25 per pound. You are charged $6.75 for a bag of tomatoes. How much do the tomatoes weigh?	Farm Stand 20 Points 3 pounds

Fluency Builder

Calculation Questions (Glue each onto the back of an envelope.)	**Calculation Answers** (Place each answer inside the corresponding envelope.)
Calculation 5 Points What is the product of 3.2 and 4?	Calculation 5 Points 12.8
Calculation 10 Points The product of 2 numbers is 182. One of the numbers is 18.2. What is the other number?	Calculation 10 Points 10
Calculation 15 Points Calculate: 18.2 x 1.25 =	Calculation 15 Points 22.75
Calculation 20 Points Find the missing digits: 12.2 x 1. 3 6 +1 2 0 1 5. 6	Calculation 20 Points 12.2 x 1. 3 3 6 6 +1 2 2 0 1 5. 8 6

Model the Four Operations with Decimals

Fluency Builder

Name: _____ Date: _____

Risky Wagers

Student Recording Sheet

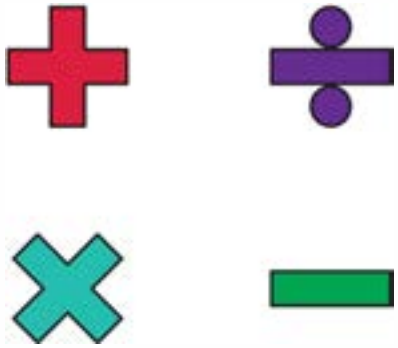
Category	Value (+ or –)	Solution

Total Score = ☐

Model the Four Operations with Decimals

Picture Vocabulary

Operations



Math processes such as addition, subtraction, multiplication, and division

Digit

0 1 2 3 4

5 6 7 8 9

Any of the numbers 0–9

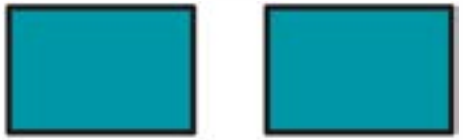
Multi-Digit

12 978

1,325

A number made up of more than one 0–9 digit

Whole Number



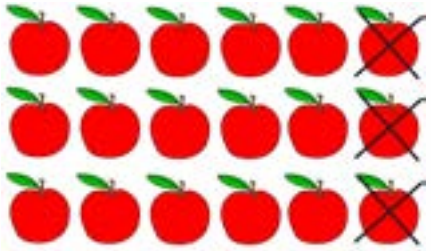
2

A numerical value with no decimal or fractional part

Addition

Combining two or more numbers to get a sum, or total

Subtraction



18 - 3 = 15

Taking away an amount from a larger amount; finding the difference between two numbers

Multiplication

3 + 3 + 3 + 3

= 4 x 3

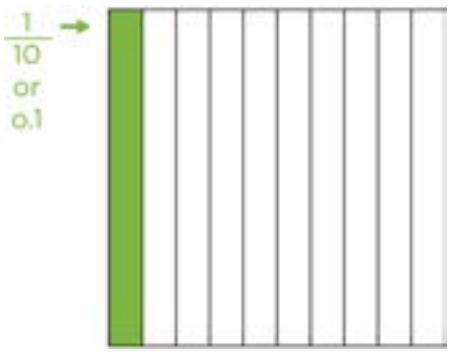
= 12

A way to create a product by making equal groups, repeating addition, or forming arrays

Division

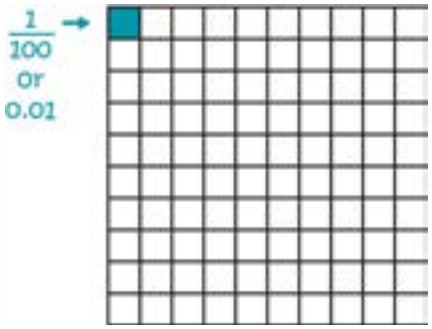
The process of sharing equally

Tenths



Parts of a whole divided into 10 equal pieces

Hundredths



Parts of a whole partitioned into 100 equal parts

Decimal

A fraction with a denominator that is a multiple of 10, written with a decimal point and digits to the right of it

WHAT IS DAILY NUMERACY?

The goal of Daily Numeracy is to empower students to reason with numbers in an accurate, efficient, and flexible way. We have included a carefully crafted, purposeful activity sample designed to help students build their thinking and reasoning around relationships and connections. Each grade level has numerous Daily Numeracy activities.

Not Like the Others Activity

DESCRIPTION

Students describe the characteristics of an object in a set of 4 and discuss how it is different from the others.

MATERIALS

PRINTED

- 1 Slideshow (per class)

REUSABLE

- 1 Projector or document camera (per class)

PREPARATION

- Prepare to project the Slideshow prompt of the day for the class.

PROCEDURE AND FACILITATION POINTS

1. Gather students together and project the Slideshow prompt of the day. Students should not have anything with them for this activity.
2. Give students a minute of silent think time as they look at the pictures on the prompt. Ask students relevant guiding questions:
   a. What do you notice?
   b. Which one is not like the others?
   c. What characteristic makes it different?
   d. How are these objects similar?
   e. Do you see another object that is not like the others?
3. Listen to multiple student responses. Accept any answer with accurate reasoning.
4. As students discuss which one is not like the others, ask the class if they agree or disagree. Provide the following sentence stems for their responses:
   a. I agree because …
   b. I disagree because …
   c. Can you explain why you …?

Daily Numeracy

$y = x + 4$	$y = 4x$
<table><tr><th>x</th><th>y</th></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>4</td></tr><tr><td>2</td><td>8</td></tr></table>	Zion walks 4 miles in an hour. How far does he walk in 5 hours?

WHAT IS FACT FLUENCY?

In order for students to be successful as they progress into upper grades, they need to have a solid understanding of the concepts of addition and subtraction, and they also need to be fluent in the thinking strategies necessary for solving such facts. As you use the STEMscopes Math program, you will come to see how your students are starting to rely on their thinking skills and strategies as opposed to their fingers or skip-counting methods. Each grade level has numerous Fact Fluency activities.

Nines Mini-Lesson

DESCRIPTION

Students will practice their understanding of the strategies for multiplying and dividing by nine.

MATERIALS

PRINTED

- 1 Set of game boards (per station)
- 1 Multiplication spinner (per station)
- 1 Division spinner (per station)

REUSABLE

- 30 Two-color counters (15 per player)
- 1 Paper clip (per station)
- 1 Pencil (per station)

PREPARATION

- Allow students to have access to a variety of mathematical tools and models in order to scaffold their thinking.
- Print on card stock paper and laminate, if desired, for continued use.
- Have game board, spinners, and counters at each station's center ready for student use.
- Students will use the paper clip and pencil for the spinner.

PROCEDURE AND FACILITATION POINTS

1. Each station group will get out a multiplication game board, multiplication spinner, and counters for the group to share.
2. Game instructions:
   a. Player 1 is the red side of the counters and Player 2 is the yellow side of the counters.
   b. Player 1 spins the multiplication spinner.
   c. Player 1 multiplies the number spun by nine.
   d. Player 1 verbalizes the strategy.
   e. Player 1 covers the product with a counter.
   f. Player 2 takes his or her turn, repeating the process.
   g. The game continues until one of the players has placed four adjacent counters of his or her own horizontally, diagonally, vertically, or in a square.
   h. If the product is already covered, the player loses a turn.
3. Each station group will get out a division game board, division spinner, and counters for the group to share.
4. Game instructions:
   a. Player 1 is the red side of the counters and Player 2 is the yellow side of the counters.
   b. Player 1 spins the division spinner.
   c. Player 1 divides the number spun by nine.
   d. Player 1 verbalizes the strategy.
   e. Player 1 covers the quotient with a counter.
   f. Player 2 takes his or her turn, repeating the process.
   g. The game continues until one of the players has placed four adjacent counters of his or her own horizontally, diagonally, vertically, or in a square.
   h. If the quotient is already covered, the player loses a turn.
5. Each station can continue to play for the allotted time by selecting a new game board once one of the players has four adjacent counters placed on the game board.

Fact Fluency

Nines Multiplication Round

Players: Two

Materials

- ★ Two-color counters (15 per player)
- ★ 1 Nines Multiplication Game Board
- ★ 1 Multiplication spinner

Directions

1. Player 1 spins the spinner and does the following tasks:
   a. Multiplies the number spun by nine
   b. Says the strategy
   c. Covers the product with a counter
2. Player 2 takes his or her turn, repeating the process.
3. The game continues until one of the players has placed four counters in a row horizontally, diagonally, vertically, or in a square.
4. If the product is already covered, the player loses a turn.

Fact Fluency

NINES MULTIPLICATION GAME BOARD A

36	54	72	45	63
18	81	9	90	36
27	45	18	36	54
63	72	9	18	27
90	36	27	45	81
81	72	54	63	9

Fact Fluency

Fact Fluency: Nines
Game 1

NINES MULTIPLICATION GAME BOARD B

36	18	45	63	81
81	72	27	54	18
18	9	63	36	90
27	54	9	72	18
45	36	72	90	81
9	63	54	27	45

Fact Fluency

NINES MULTIPLICATION GAME BOARD C

36	54	18	9	45
72	90	81	27	63
9	36	63	54	81
45	18	72	90	9
27	54	9	36	72
63	18	45	81	90

Fact Fluency

Nines Division Round

Players: Two

Materials

- ★ Two-color counters (15 per player)
- ★ 1 Nines Division Game Board
- ★ 1 Division spinner

Directions

1. Player 1 spins the division spinner and does the following tasks:
   a. Divides the number spun by nines
   b. Says the strategy
   c. Covers the quotient with a counter
2. Player 2 takes his or her turn, repeating the process.
3. The game continues until one of the players has placed four counters in a row horizontally, diagonally, vertically, or in a square.
4. If the quotient is already covered, the player loses a turn.

Fact Fluency

Nines Division Game Board A

2	5	9	4	7
10	3	8	3	1
8	4	5	9	6
1	7	1	5	2
7	6	3	2	5
6	5	4	8	10

Fact Fluency

Fact Fluency: Nines
Game 1

NINES DIVISION GAME BOARD B

7	2	3	9	5
8	5	4	5	1
5	6	10	1	7
1	7	8	6	10
2	10	3	5	4
3	6	4	8	9

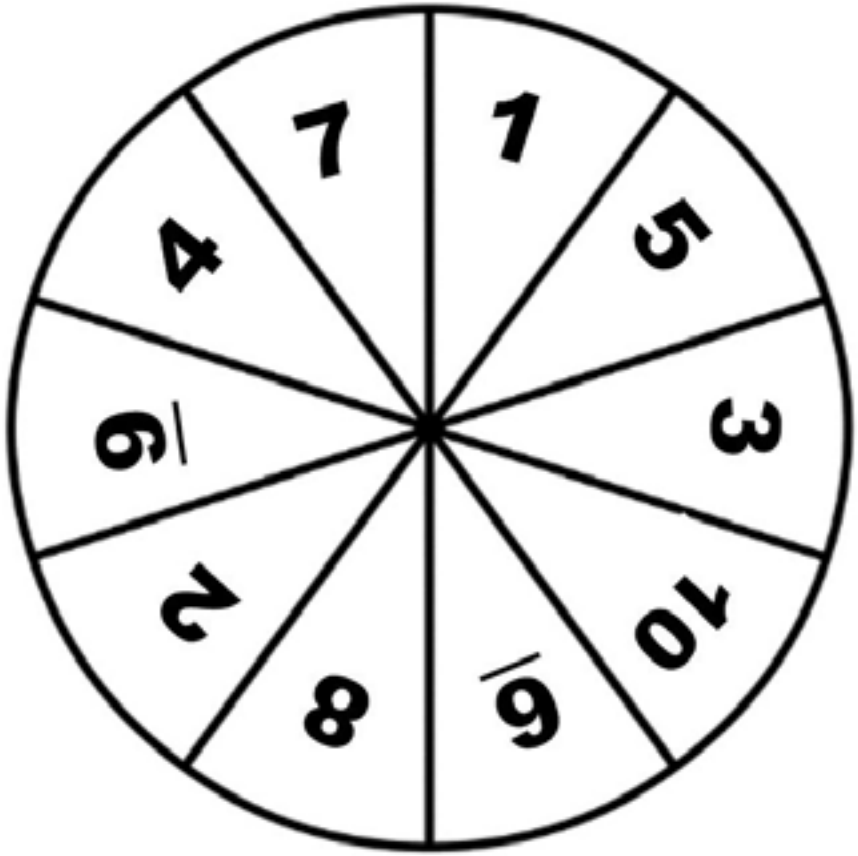
Fact Fluency

Nines Division Game Board C

5	2	3	1	6
1	10	3	7	4
8	4	10	9	3
7	6	5	1	8
4	1	9	6	3
3	8	2	5	9

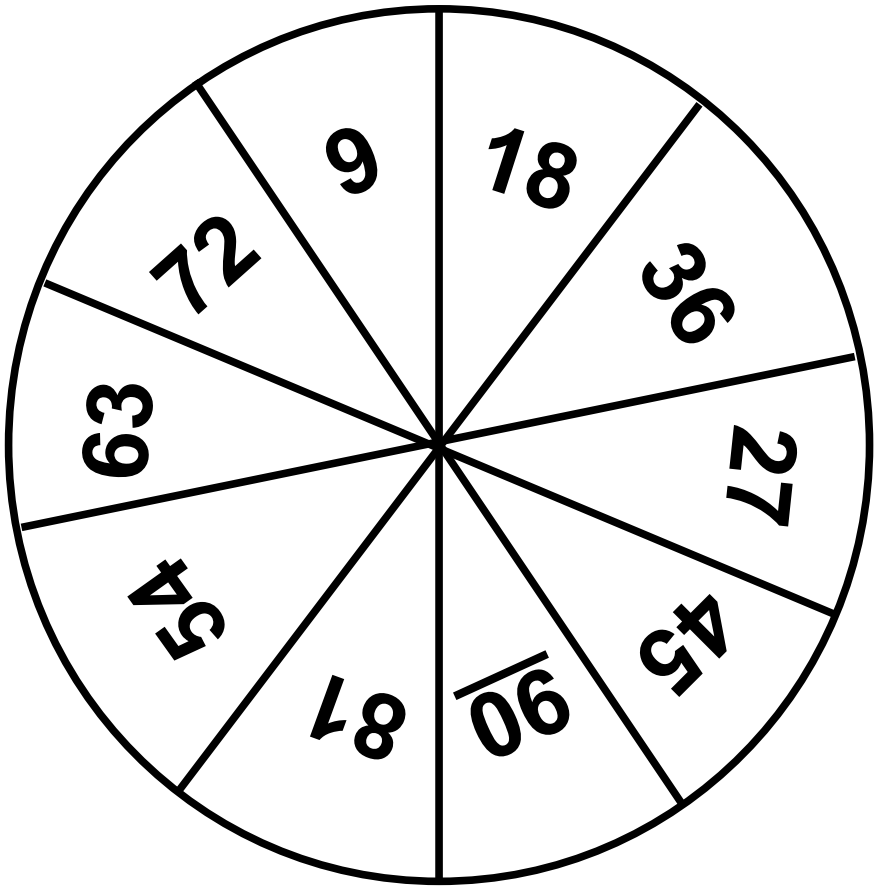
Fact Fluency: Nines
Game 1

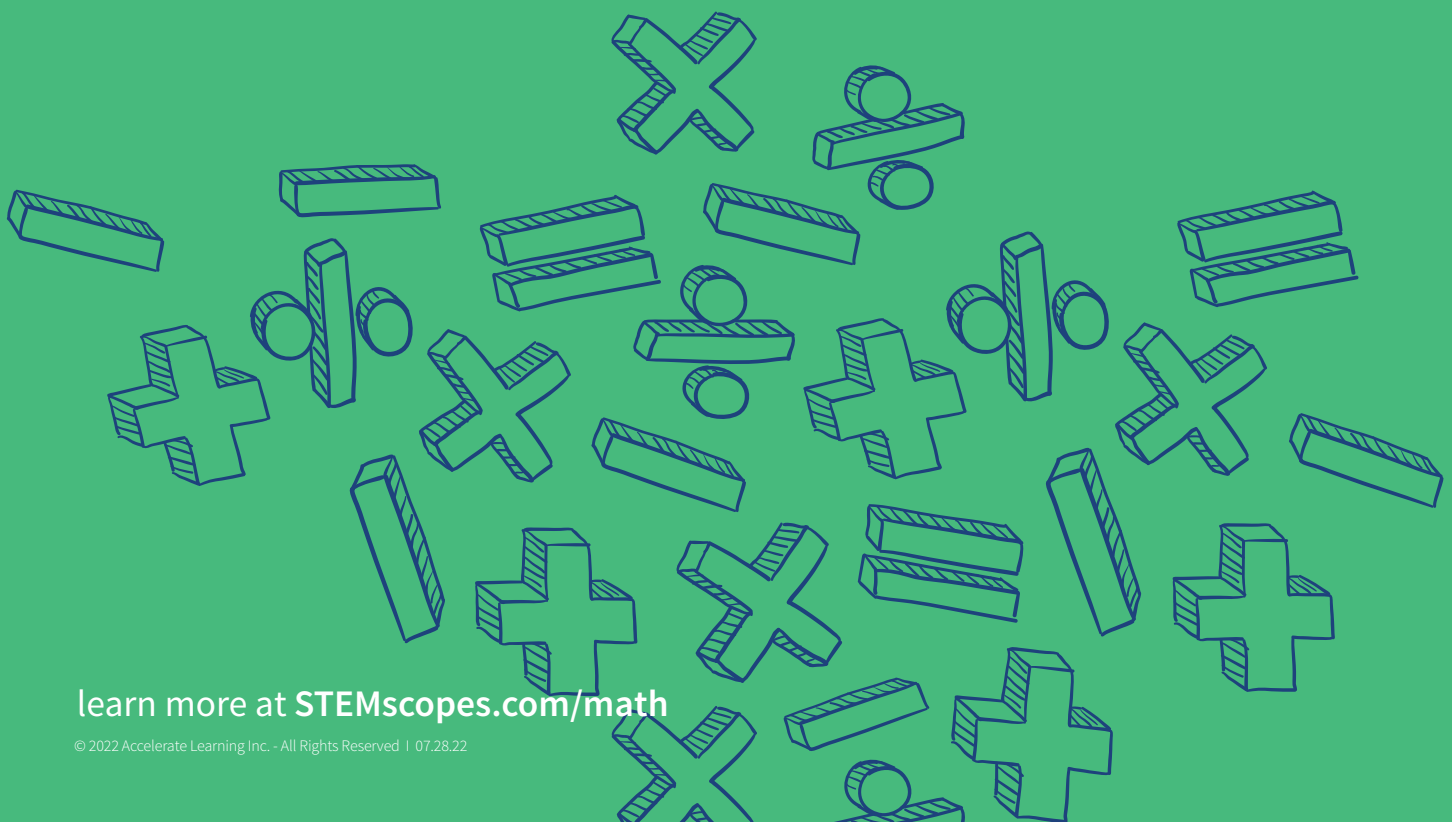
Fact Fluency



× 9

÷ 9





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