

SUPPORT THE NEXT GENERATION LEARNING STANDARDS WITH

Ready[®] Classroom Mathematics

 Grades **K-8**



New Name in 2021

 i-Ready[®] Classroom Mathematics

Making Classrooms Better Places for New York Teachers and Students



Our mission is to help New York students become strong, independent mathematical thinkers. *Ready Classroom Mathematics* takes a unique approach, building upon research-based practices that are proven to work. Through a blend of purposeful print and digital components, the instructional design makes mathematics accessible, increases student engagement, and builds confidence. Everything works together to support teachers and help students connect to mathematics in new ways.

*Grades 6–8 to be reviewed.





Teachers Use Data to Differentiate Instruction and Address Unfinished Learning

Powerful assessments and in-depth reports give teachers insight into students' understanding and areas of instructional need before, during, and after each lesson. Comprehensive resources are provided to address the needs of all learners. Use the right tool at the right time to help all students access grade-level content.

Page 4



Instruction and Practice Support the Rigor of the Next Generation Learning Standards

Rich and varied practice opportunities deepen the conceptual and procedural connection for students, helping them develop greater number sense and fluency. Prepare students for New York State Assessments with quality practice that reflects the rigorous expectations of the standards.

Page 10



Students Take Ownership of Their Learning

Invite students to be active participants in math class. The effective lesson design and easy instructional routine provide the structure and support that enable students to persevere, develop deep conceptual understanding, and become independent learners.

Page 18

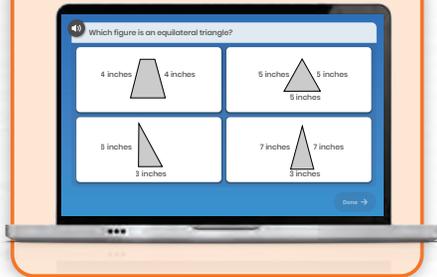
Intuitive Data at Your Fingertips

Students come with a wide range of backgrounds and experiences. *Ready Classroom Mathematics* provides teachers with deeper knowledge of students' needs. Make informed instructional decisions for every student based on valid, reliable data.

Use Data to Support All New York Students

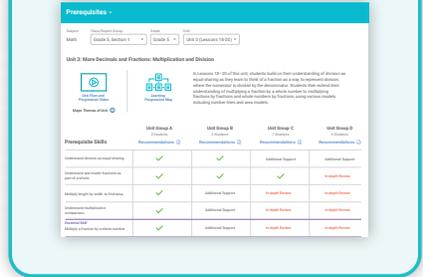
Diagnostic Assessment

Students complete the Diagnostic at the beginning, middle, and end of the year. Student results are used to generate the Prerequisites report.



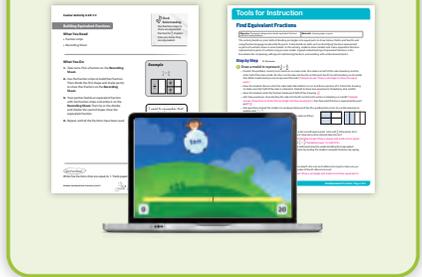
Prerequisites Report

This report identifies learning needs and suggests student groups that align with specific *Ready Classroom Mathematics* units to inform instructional planning.



Print and Digital Resources

Teachers have the flexibility to strategically pace instructional supports throughout the unit and choose the materials that best address students' learning needs.

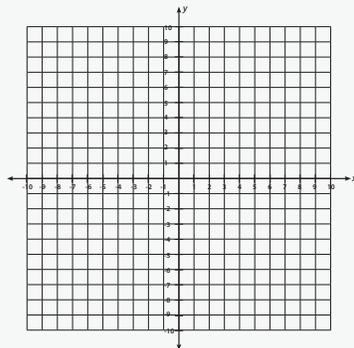


What is the solution to this system of equations?

$$y = 3x - 2$$

$$6x - 2y = 4$$

Click on the coordinate grid below to graph the lines. Then choose the answer that best describes the solution.



$(\frac{2}{3}, 0)$

$(0, -2)$

No solution

Infinitely many solutions

Done →

Diagnostic: The adaptive digital assessment provides comprehensive insight into student learning and growth across all K–12 skills to help teachers meet the needs of all students.



Prerequisites

Subject: Math | Class/Report Group: Grade 5, Section 1 | Grade: Grade 5 | Unit: Unit 3 (Lessons 18-20)

Unit 3: More Decimals and Fractions: Multiplication and Division

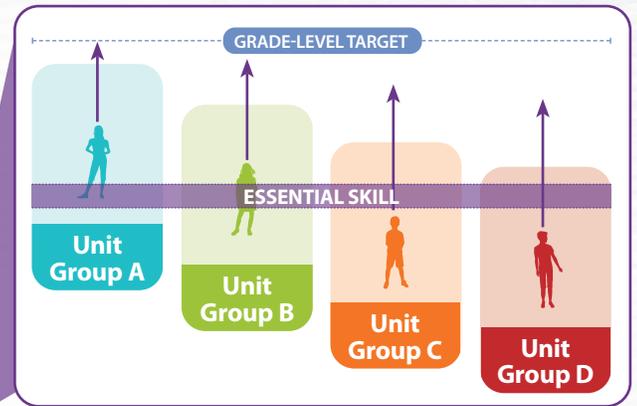
Unit Flow and Progression Video | Learning Progression Map

In Lessons 18–20 of this unit, students build on their understanding of division as equal sharing as they learn to think of a fraction as a way to represent division, where the numerator is divided by the denominator. Students then extend their understanding of multiplying a fraction by a whole number to multiplying fractions by fractions and whole numbers by fractions, using various models including number lines and area models.

Prerequisite Skills	Unit Group A 3 Students	Unit Group B 3 Students	Unit Group C 7 Students	Unit Group D 6 Students
Understand division as equal sharing.	✓	✓	Additional Support	Additional Support
Understand and model fractions as part of a whole.	✓	✓	✓	In-depth Review
Multiply length by width to find area.	✓	Additional Support	In-depth Review	In-depth Review
Essential Skill Multiply a fraction by a whole number.	✓	Additional Support	In-depth Review	In-depth Review
	Tan, Melanie Vo, Isaiah McDonald, Kal	Stanton, Geena Warren, Santino Patel, Mia	Baker, Danielle Bowers, Tara Hess, Michael Powell, Elijah Ramirez, Gabriella Ruiz, Justin Singh, Brian	Choi, Isabelle Cochran, Damon Lowe, Noah Malone, Carla Sanchez, Abby Simmons, Tristan

These unit groups are suggestions, based on students' most recent Diagnostic Results (to view the data, see the Diagnostic Results Report). Consider lessons recently taught and skills acquired since the last Diagnostic when selecting prerequisite work.

Help all students access grade-level content by targeting essential prerequisite skills.



Efficiently Meet Learners' Needs: The data and recommendations in the Prerequisites report focus teacher time and effort on the most critical Essential Skills, accelerating students at all levels toward grade-level success.

Recommended Resources: Teachers have the flexibility to strategically pace instructional supports throughout the unit and choose the materials that best address students' learning needs.

Built to Measure the Next Generation Learning Standards: Flexible assessments provide targeted insight into a student's mastery of individual Next Generation Learning Standards by grade level.

i-Ready | Rosters | Assess & Teach | Reports | Help | Gabriella M

NY NGLS Performance

Subject: Math | Class/Report Group: N. Flores - Grade 3, Section... | Grade: 3 | Diagnostic: Most Recent

Students Assessed/Total: 19/19

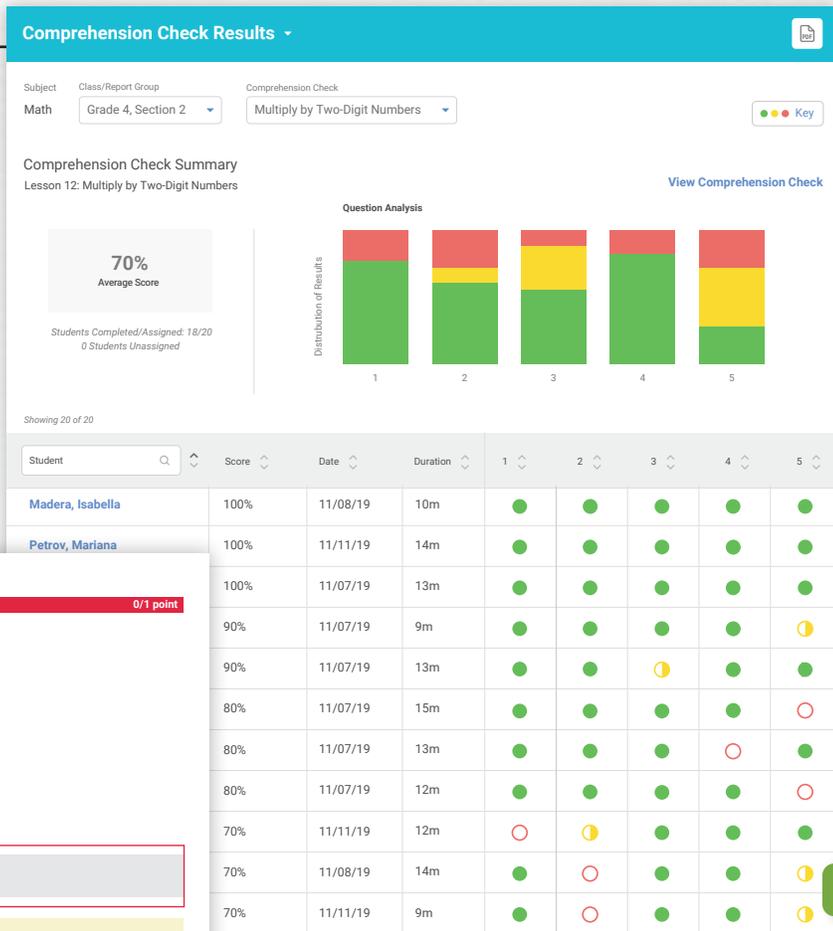
Grade(s) of Standards: Grade 2 | Skill Summary

Standard Code	Standard Description	0	15	4
2.OA.1	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	0	19	0
2.OA.1	Use... subtraction within 100 to solve one-... step word problems involving situations of... comparing...	15	0	4
2.OA.1	Use addition and subtraction within 100 to solve... word problems... with unknowns in all positions, e.g., by using... equations with a symbol for the unknown number to represent the problem.	15	0	4
2.OA.2	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	0	15	4
2.OA.2	Fluently... subtract within 20 using mental strategies...	19	0	0



Comprehension Check Reports:

- Provide insight into student understanding of concepts and skills at the lesson and unit level with auto-scored assessments
- Support teachers in identifying common misconceptions and errors, as well as common strengths across students' understanding



Item 1 0/1 point

The picture shows a rectangular prism that Katie built.

Complete the statement to determine how many unit cubes Katie used to build the prism.

Enter your answer in the boxes.

This prism has 2 layers and 8 × unit cubes in each layer, so the prism has 16 × unit cubes.

Correct answers: 16 32

Students may have an incorrect response because they do not understand how to find the number of cubes in a layer, or the total number of cubes in a rectangular prism made of unit cubes.

Students who answered 8 unit cubes in each layer and 16 cubes in the prism may have counted the number of horizontal layers correctly but then used the number of cubes on the front instead of the top surface of the prism to find the number of cubes per layer.

Students who answered 4 unit cubes in each layer and 8 cubes in the prism may have counted the cubes from left to right to find the number of cubes per layer.

Student who answered 16 unit cubes in each layer and 16 cubes in the prism likely did not take into account that there are two layers.

Item 2 0.50/1 point

The number 402.301 can be written in different ways.

- **Response Analysis:** Get insight into common student errors and misconceptions, making it easier to address incorrect answers.



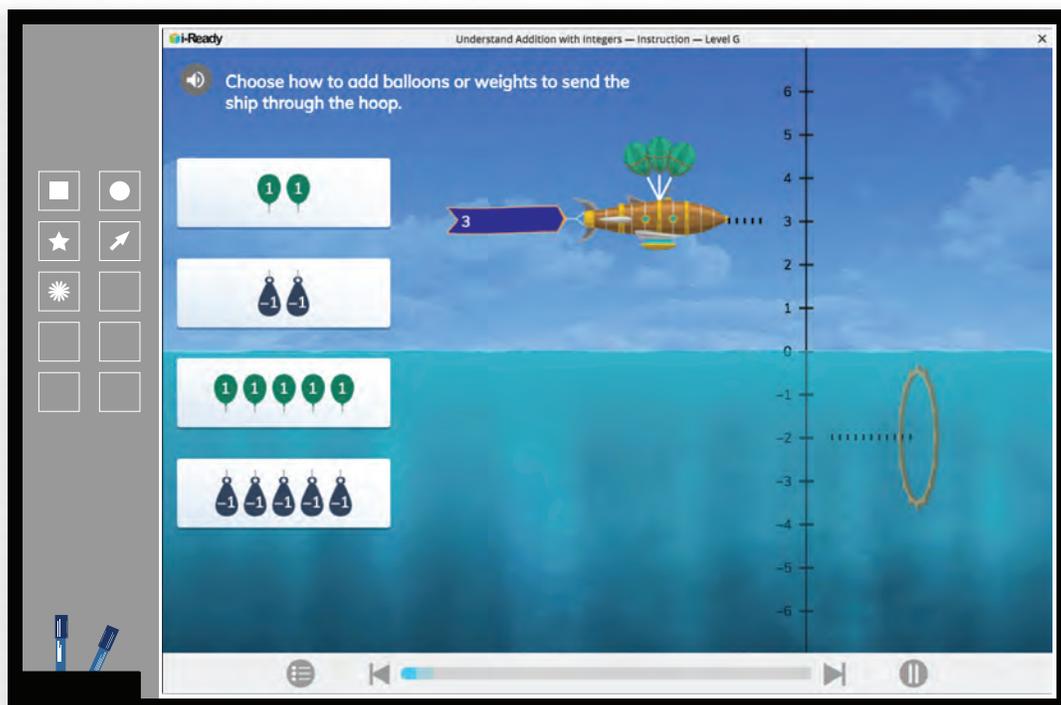
Differentiation Made Easy

Effective differentiation requires a thoughtful approach. *Ready Classroom Mathematics* embeds best practices for supporting all learners throughout the instructional design with a focus on prevention. With insightful data and purposeful resources, teachers have what they need, when they need it.

Before the Lesson

Using the data from the Prerequisites report, teachers can provide review of and intervention for critical topics and connect to specific differentiation resources, including:

- **Prerequisite Lessons** and **Interactive Tutorials** that help address learning needs for struggling students
- **Teacher Toolbox** that provides access to all K–8 resources to support whole class instruction and small group differentiation



Example of Prerequisite Interactive Tutorial



Meet students where they are
with differentiation materials aligned
to the Next Generation Learning Standards!

During the Lesson

- **Common Misconceptions** and **Error Alerts** are highlighted in red with suggestions on how to address them.
- **Hands-On Activities** and **Visual Models** provide an opportunity for students to work with manipulatives or visualize a concept in a different way.
- **Deepen Understanding** provides an in-depth exploration of a targeted mathematical practice related directly to the concepts of the lesson.
- **Refine sessions** provide dedicated instructional time and activities for differentiated instruction.

After the Lesson

- **Differentiation** options for each lesson let teachers reteach, reinforce, and extend learning to meet the needs of all students.
- **Tools for Instruction** are mini-lessons for reteaching lesson concepts.
- **Math Center Activities** are purposefully designed for on-, below-, and above-level students.
- **Enrichment Activities** challenge students with higher-order thinking tasks and technology-focused activities.
-  **New York State Assessment Practice** enables students to experience items similar to those found on the New York State Assessment.

DIFFERENTIATION | RETEACH or REINFORCE



Hands-On Activity

Use fraction tiles to model a fraction divided by a whole number.

If students are unsure about dividing a fraction by a whole number, then use this activity to help them model division of a fraction by a whole number.

Materials For each pair: fraction tiles (1 set)

- Explain to students that they will be modeling $\frac{2}{3} \div 4$. Have students start with 2 one-third tiles.
Ask: *How does this model represent $\frac{2}{3}$?* [The total length of 2 one-third tiles is $\frac{2}{3}$.]
- Ask: *In terms of fraction tiles, what does it mean to divide $\frac{2}{3}$ by 4?* [It means you have to find 4 equal-size tiles that have the same total length as the 2 one-third tiles set end-to-end.]
- Allow time for students to determine which size fraction tile they can use 4 of to have the same length as the 2 one-third tiles.
- Ask: *Which fraction tile can you use 4 of to equal the length of the 2 one-third tiles?* [$\frac{1}{6}$]
- Ask: *What is the quotient $\frac{2}{3} \div 4$?* [$\frac{1}{6}$]
- Have students repeat the activity for other quotients of fractions and whole numbers, such as $\frac{2}{5} \div 4$ and $\frac{1}{2} \div 6$. [$\frac{1}{10}$; $\frac{1}{12}$]

Example of Hands-On Activity

ENRICHMENT ACTIVITY | Name: _____
LESSON 9

Line Slide

Your Challenge
When a linear equation has the form $y = mx + b$, how does changing m or b affect its graph?

► Use graphing technology to explore the effect of changing the values of m and b on the graph of a line.*

- Open the graphing technology program.
- Type $y = mx + b$ in the field where equations are entered. Then create sliders for m and b .
- Move each slider bar to see how changing the values for m and b affects the graph of the equation.
- Investigate how changing m in the equation $y = mx + b$ changes the graph of the equation.

- What is the overall effect on the graph when the value of m changes?
- How does the graph change when the value of m changes from positive to negative?
- How does the graph of the line change as positive m increases? How does it change as negative m decreases?

* You may need to adjust the steps depending on which calculator or graphing program you use. If needed, use Help or Support menus or online tutorials.

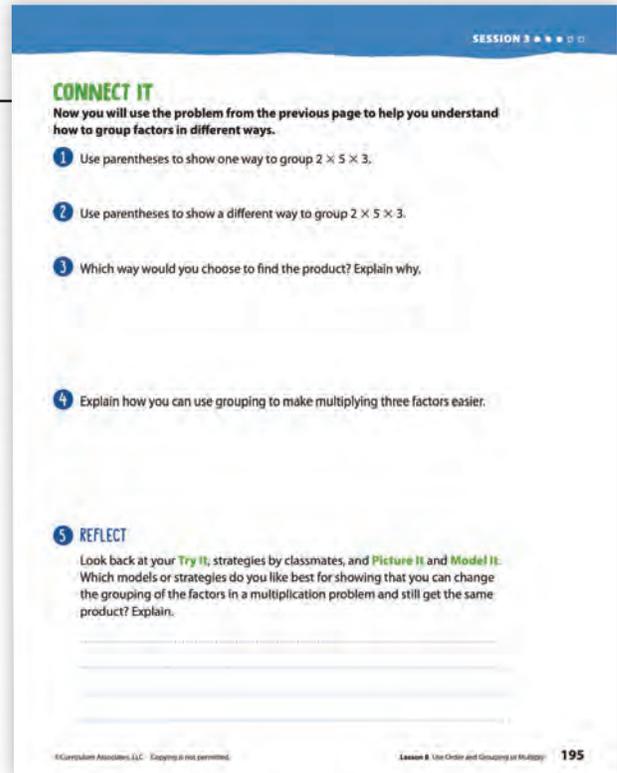
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Example of Enrichment Activity

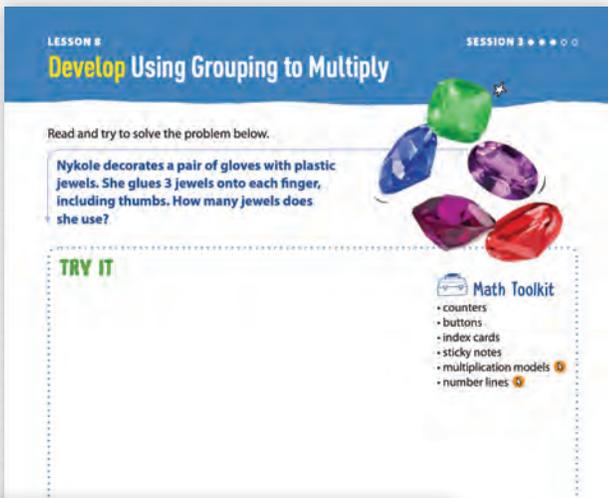
Designed to Deliver Powerful Results

Teachers have a lot to do when it comes to addressing the Next Generation Learning Standards. Everything in *Ready Classroom Mathematics* optimizes instructional time while deepening student understanding.

Questions for Deeper Understanding: Students answer critical-thinking questions that help them make explicit connections between multiple strategies.



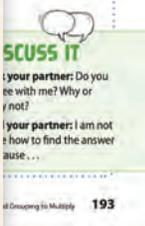
High-Ceiling/Low-Threshold Tasks: These tasks allow students to naturally engage in the mathematical practices in a meaningful way.



Support Whole Class Discussion
Compare and connect the different representations and have students identify how they are related.

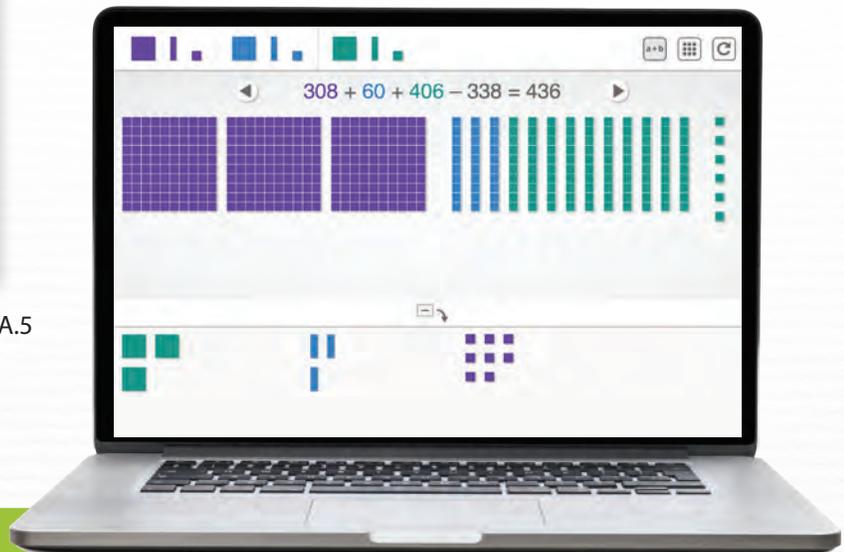
Ask How is the number of fingers represented in each model? How is the number of jewels on each finger represented? How is the number of gloves represented?

Listen for There are 5 fingers on each glove; each finger has 3 jewels; there are 2 gloves. Models show 5 groups of 3 twice.



NY Specific NY-3.OA.5

Embedded Teacher Support: Integrate the National Council of Teachers of Mathematics Effective Teaching Practices with the best ways to promote and facilitate mathematical discourse.



Bring Mathematics to Life: Digital Math Tools help students deepen their understanding of concepts with easy-to-use visual representations.

Different lesson types address all aspects of rigor required by the Next Generation Learning Standards.

Understand Lessons: These lessons focus primarily on conceptual understanding and occur at key points in the instructional sequence.

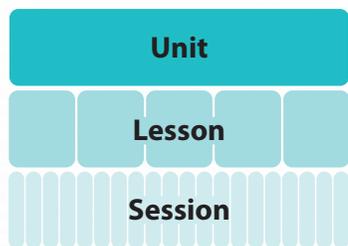
Strategy Lessons: These lessons let students develop and discuss a variety of solution strategies, helping them make richer connections and deepen their understanding.

Math in Action Lessons (Grades 2–8): These lessons review unit content and teach students how to construct short and extended responses.

UNIT 5		Algebraic Thinking	
		Equivalent Expressions and Equations with Variables	
Unit Opener		433	434
Prepare for Equivalent Expressions and Equations with Variables		434	435
LESSON 19	Write and Identify Equivalent Expressions	435	463
LESSON 20	Understand Solutions of Equations	463	475
LESSON 21	Write and Solve One-Variable Equations	475	503
LESSON 22	Analyze Two-Variable Relationships	503	525
MATH IN ACTION	Equivalent Expressions and Equations with Variables	525	534
Self Reflection		534	535
Vocabulary Review		535	536
Unit Review		536	



NY-7-EE.1



Multiple-day lessons provide more time for deeper understanding.

Deep conceptual understanding of the standards doesn't happen in a day. *Ready Classroom Mathematics* lessons span across multiple days to give students time to dig deeper into the concepts. Lessons are divided into Explore, Develop, and Refine sessions.

Day 1	Day 2	Day 3	Day 4	Day 5
Explore Session	Develop Session	Develop Session	Develop Session	Refine Session*
Make connections to prior knowledge and explore new concepts.	Develop strategies and understanding through discourse and problem solving.	Develop strategies and understanding through discourse and problem solving.	Develop strategies and understanding through discourse and problem solving.	Practice, deepen understanding, and differentiate.

Example of Grade 6: Lesson 10. See the following pages for more about each type of session.

*K–2 lessons include two Refine sessions.

Multiple-Day Lesson Structure

Explore Session

The Explore session is an instructional day that connects previously learned concepts to the new ideas of the lesson. Each session focuses on a high-level task to ensure deep understanding of the mathematical goals of the lesson.

Start

Same and Different

$4a = 24$	$0.5b = 3$
$c - 1.2 = 4.8$	$d + 5.5 = 11.5$

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Connect to Prior Knowledge:

The Start activity follows an asset-based approach, using students' prior knowledge as a springboard for learning new concepts.

LESSON 18 | SESSION 1

Explore Solving Multi-Step Equations

Previously, you learned how to reason about equations to find unknown values. In this lesson, you will learn about solving equations algebraically.

► Use what you know to try to solve the problem below.

Adela, Rachel, and Santo take pictures at a Purim celebration.

- Adela takes 7 more pictures than Rachel.
- Santo takes 4 times as many pictures as Adela.
- Santo takes 48 pictures.

How many pictures does Rachel take?

TRY IT Math Toolkit algebra tiles, grid paper, number lines, sticky notes

DISCUSS IT

Ask: What did you do first to find the number of pictures Rachel takes? Why?

Share: I started by ... because ...

Learning Targets SMP 1, SMP 2, SMP 3, SMP 4, SMP 5, SMP 6, SMP 7

Use variables to represent quantities and construct simple equations to solve problems.

Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.

©Curriculum Associates, LLC. Copying is not permitted. LESSON 18 Write and Solve Multi-Step Equations 355

Access for All: Rich tasks provide multiple entry points that allow all students to access challenging tasks in a way that makes sense to them.

Problem Solving with Equations - Tutorial - Level 6

How can we isolate the variable, p ?

$6,000 + (-25p) = 4,000$

Step #1

$6,000 - 25p - 6,000 = 4,000 - 6,000$

$-25p = -2,000$

Divide both sides of the equation by -25 .

Multiply both sides of the equation by 25.

Multiply both sides of the equation by -25 .

Divide both sides of the equation by 25.

Engage with Technology: Interactive Tutorials allow students to explore concepts deeply.



Example of Grade 7 Explore Session

Develop Session

Develop sessions engage students in creating, discussing, and comparing different strategies to solve a problem. Students use the same problem throughout instruction, allowing time for them to think critically about new mathematical ideas.

Hugo is traveling in Toronto, Canada. His weather app shows the temperature is 25°C . Hugo writes the equation $25 = \frac{5}{9}(F - 32)$ to find the temperature in degrees Fahrenheit, F . What is the temperature in degrees Fahrenheit?

TRY IT



Math Toolkit grid paper, number lines, sticky notes

• **Discuss Strategies:** Students solve problems using the strategies and tools of their choice and then discuss their ideas in pairs and with the class.

• **Make Connections:** Students make connections between the strategies discussed and those in the book to reinforce and extend their understanding.

DISCUSS IT

Ask: Why did you choose that strategy to find the temperature in degrees Fahrenheit?

Share: I knew ... so I ...

CONNECT IT

► Use the problem from the previous page to help you understand how to solve an equation with grouping symbols.

- 1 What is 25°C in degrees Fahrenheit?
- 2 Look at the first **Model It**. Describe the steps shown for solving the equation. What do you still need to do to find the value of F ?
- 3 Look at the second **Model It**. Describe the steps shown for solving the equation. What do you still need to do to find the value of F ?



Refine Session

The Refine session provides dedicated class time for students to strengthen their skills through practice and applications. Students spend time building fluency and checking understanding.

Assess and Differentiate: At the beginning of the Refine session, teachers evaluate student work and may group students for differentiation.

Refine Session Differentiated Instruction

Reteach	Reinforce	Extend	Personalize
Teacher-led Hands-On Activities help students who still struggle with lesson concepts.	Additional on-level work helps all students strengthen their understanding.	Challenge Activities ask students to go deeper into the lesson concept.	With the addition of <i>i-Ready® Personalized Instruction</i> , a customized path helps students fill prerequisite gaps and build up grade-level skills.

Teacher Support That Empowers

Enhance teacher knowledge, skill, and effectiveness with embedded strategies and support. *Ready Classroom Mathematics* includes professional learning designed to help teachers bring mathematical concepts to life.

UNIT 3 Math Background

Models, Progressions, and Teaching Tips
As you plan lessons, use this information to unpack the learning progressions and make connections between key concepts.

Unit Themes
The major themes of this unit are:
 • You can use what you know about place value to multiply multi-digit numbers.
 • You can use what you know about place value to help you divide.
 • Units of measurement can be divided into smaller units. Knowing how these units relate to one another will help you convert measurements from the larger unit to the smaller unit.
 • You can use formulas to find the area and perimeter of rectangles.

Prior Knowledge
Students will build on their preliminary understandings of multiplication and division. They should:
 • be familiar with rectangular arrays and area models to represent multiplication.
 • be familiar with the properties of operations.
 • use their understanding of place value and basic facts to multiply one-digit numbers by multiples of 10.
 • understand division as a number of equal groups or the number of items in each group.

Multiplying Whole Numbers
Insights on: Modeling Multiplication with Base-Ten Blocks
 ✓ Students begin to explore ways to use place value and partial products to multiply by one- and two-digit numbers.
 ✓ When working with partial products, avoid jumping straight to the area model. Allow students to make sense of multiplication using place-value strategies as well as base-ten blocks.
 ✓ Use different colors for the base-ten 100s, 10s, and 1s. This will allow students to naturally use the area model and then begin drawing the model.

UNIT FLOW AND PROGRESSION

Math Background: At the beginning of each unit, the Math Background helps teachers deepen their understanding of mathematical models and strategies, better understand how the models fit into the learning progression, and learn valuable teaching tips.

Unit 4 - Fractions and Decimals Addition, Subtraction, Multiplication, and Time, Money, and Length

Understanding Equivalent Fractions

Comparing Fractions

Number Line

Length Models

Area Models

Fraction Tiles

3rd Grade $\frac{3}{8} > \frac{3}{10}$

4th Grade

numerator

denominator

Unit Flow & Progression Videos: These videos show the progression of concepts in each unit and include ideas for using the models and making connections. Videos are closed-captioned in English and Spanish.

Available for parents, too!



Onsite Professional Development (PD): Ongoing, classroom-focused PD supports teachers in using student thinking and the mathematical practices to transform mathematics classrooms.



Additional teacher notes and activities to fully address the Next Generation Learning Standards

Ready Classroom Central: From how-to tips to planning tools, get on-demand access to everything needed for a successful implementation.



High-Quality Independent Practice

Practice needs to build conceptual understanding and match the rigorous expectations of the standards. *Ready Classroom Mathematics* provides questions and practice problems that solidify students' conceptual understanding before providing computational practice used to develop fluency.

Additional Practice in Student Worktext:

In every session, students build proficiency with the strategies learned in class and apply those ideas to answer critical-thinking questions and new problems.

Name: _____

LESSON 33 SESSION 2

Practice Partitioning Shapes into Equal Parts

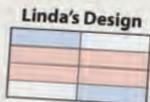
Study the Example showing how to divide rectangles into equal parts. Then solve problems 1–10.

EXAMPLE

Brad and Linda each cover a same-sized board with mosaic tiles. Here are the designs they made. What part of Brad's design is red tiles? What part of Linda's design is red tiles?

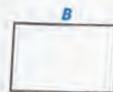


2 rows of 4 tiles = 8 tiles
 $\frac{4}{8}$ or $\frac{1}{2}$ of the tiles are red.



4 rows of 2 tiles = 8 tiles
 $\frac{4}{8}$ or $\frac{1}{2}$ of the tiles are red.

- How many equal parts are in rectangle A? _____
- How many rows are in rectangle A? _____
- What fraction of the total area of rectangle A is shaded? _____
- Use rectangle B to show another way to divide a rectangle into 6 equal parts. What unit fraction is each part? _____
- What fraction of the total area of rectangle C is shaded? Tell how you know.



LESSON 33 SESSION 2

- The octagon is divided into equal parts. What fraction of the total area of the octagon is each part? _____

- Compare squares X and Y. Tell whether each statement is True or False.

	True	False
$\frac{1}{2}$ of shape X is shaded.	(A)	(B)
$\frac{1}{2}$ of shape Y is shaded.	(C)	(D)
Each row of shape X is $\frac{1}{4}$ of the whole square.	(E)	(F)
Each row of shape Y is $\frac{1}{4}$ the whole square.	(G)	(H)

- Divide rectangle S into 4 equal parts and divide rectangle T into 8 equal parts.



- Shade $\frac{1}{4}$ of the area of each rectangle in problem 8.
- Use $<$, $>$, or $=$ to compare the shaded parts of the rectangles in problem 8.
 $\frac{1}{4}$ _____
- Divide the hexagon into 6 equal triangles. Then shade $\frac{1}{2}$ or $\frac{1}{3}$ of the area of the hexagon. Tell how you know $\frac{1}{2}$ or $\frac{1}{3}$ of the area is shaded.



Multiple Practice Opportunities Build Students' Confidence

Effective mathematics practice needs to be more than asking students to memorize math facts and recall answers to questions. *Ready Classroom Mathematics* provides a variety of practice opportunities to help students build conceptual understanding and demonstrate procedural fluency by experiencing mathematics in multiple ways.

Refine Sessions:

To help students solidify their understanding, each lesson provides one to two days of in-class practice time with the support of other students and the teacher.



NY-2.MD.1

LESSON 20 **Refine** Adding and Subtracting Fractions SESSION 5

Complete the Example below. Then solve problems 1–9.

EXAMPLE
Jessica hikes $\frac{2}{5}$ of a mile on a trail before she stops to get a drink of water. After her drink, Jessica hikes another $\frac{2}{5}$ of a mile. How far does Jessica hike in all?

Look at how you could show your work using a number line.

Solution

PAIR/SHARE
How else could this problem?

APPLY IT
1 Ruth makes 1 fruit smoothie. She drinks $\frac{1}{3}$ of it. What fraction of the fruit smoothie is left? Show your work.

PAIR/SHARE
How did you and your partner decide a fraction to start with?

Solution

Example of Grade 2 Refine Session

Fluency and Skills Practice:

Optional targeted practice uses patterns and repeated reasoning to build mathematics skills. Available for download on the Teacher Toolbox.

Fluency and Skills Practice

Rounding Whole Numbers

Round each number to the nearest ten.

1 72 2 172 3 2,572 4 101,372

Round each number to the nearest hundred.

5 180 6 1,180 7 56,180

8 980 9 1,980 10 56,980

Round each number to the nearest thousand.

11 7,750 12 17,750 13 25,750 14 70,750

Round each number to the nearest ten thousand.

15 65,321 16 165,321 17 185,321 18 205,321

19 Round 307,451 to each place:
to the nearest thousand:
to the nearest hundred:
to the nearest ten:

Cumulative Practice:

Students revisit previously learned content to deepen their understanding and retention.

UNIT 2 **Cumulative Practice** Name: _____

Set 1: Place Value
Fill in the blanks to make each statement true.

1 The value of the 4 in 54,298 is

2 The value of the 2 in 490,200 is times the value of the 2 in 649,120.

3 In the number 88,845, the value of the 8 in the thousands place is 10 times the value of the 8 in the place.

Set 2: Read and Write Whole Numbers
Write each number in standard form in problems 1–4.

1 Eight hundred thousand, eight 2 Forty-five thousand, twelve

3 2,000 + 200 + 2 4 10,000 + 800

Write the numbers in word form in problems 5 and 6.

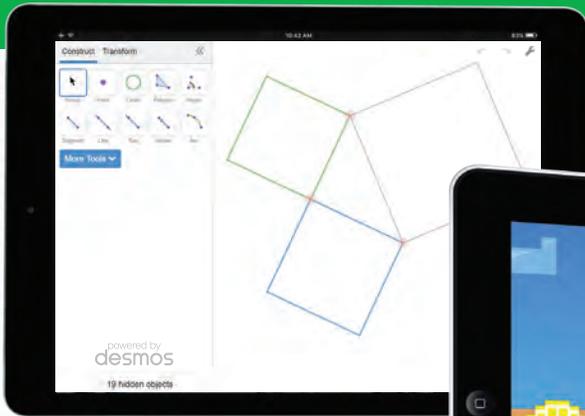
5 20,490 =
6 48,016 =

Set 3: Compare Whole Numbers
Write $<$, $>$, or $=$ in each circle to compare the numbers.

1 15,076 9,628 2 7,648 7,648 3 66,666 666,666

4 11,154 101,114 5 520,605 520,650 6 22,004 21,998



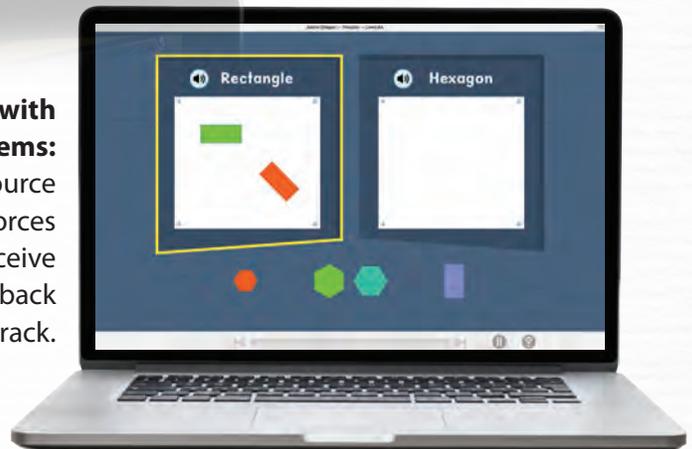


Bring Mathematics to Life: Digital Math Tools help students make graphical, numerical, algebraic, and geometric connections.



Learning Games: Playful fluency practice allows students to explore essential skills in a low-stakes environment. In-depth reports offer real-time snapshots of skills progress and growth mindset. Students can toggle to play games in Spanish.

Interactive Practice with Technology-Enhanced Items: This assignable digital resource provides practice that reinforces understanding. Students receive immediate, meaningful feedback to keep them on track.



Fluency Practice

Practice using a number path to count on.

Materials For each child: Activity Sheet *Number Paths*

- Distribute Activity Sheet *Number Paths*. Tell children they are going to use the number paths to model counting on to solve problems.
- Write $5 + 2 =$ on the board.
- Have children shade the squares 1–5 on the number path. Then have them circle the 5 and draw a curved arrow from 5 to 6 and from 6 to 7. Make sure children notice that the two jumps represent counting on two.
- Write 4 more equations on the board with a blank for the sum. Ask children to model the addition on the number paths in a similar manner and tell the sum.



Fluency Practice: Build the foundations for counting and cardinality with fun fluency activities in the Teacher's Guide: Fluency Practice (Grades K–1) and Building Fluency (Grade K).

Grade Level Games: Fun mathematics games for Grades K–2 students that help build fluency and understanding of critical concepts.

Math Shouldn't Be Quiet

When students do the thinking and talking, they are able to better process, synthesize, and retain ideas leading to greater understanding. The manageable routines in *Ready Classroom Mathematics* get students doing what they already love—talking. But this time, they're talking about mathematics.

The Try–Discuss–Connect routine sparks meaningful partner and whole class discussions. This strengthens students' understanding and helps them become independent learners.

LESSON 12
Develop Multiplying by Two-Digit Numbers

SESSION 2 ● ● ●

Read and try to solve the problem below.

Folding chairs are set up in a school auditorium for a play. There are 16 rows of chairs. Each row has 28 chairs. How many folding chairs are set up for the play?

TRY IT

Math Toolkit

- base-ten blocks
- grid paper
- multiplication models

DISCUSS IT

Ask your partner: Why did you choose that strategy?

Tell your partner: A model I used was ... It helped me ...

Lesson 12 Multiply by Two-Digit Numbers 257

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Example of Grade 4 Try It and Discuss It

 NY-4.NBT.5

Try It

The teacher introduces a rich problem-solving task and helps students reason through the language, see mathematical relationships, and make sense of the problem before students undertake the mathematics.

Students are given individual think time to formulate their approach. Then they try to solve the problem on their own, using the tools and strategies that make sense to them.

Discuss It

Students turn and talk to a partner, asking about and sharing their strategies. This provides a safe space for students to talk through their ideas, questions, and language. The teacher monitors the discussions and asks questions to help make students' thinking clear and visible.

Student work is strategically shared with the class to progressively build conceptual understanding and precise academic vocabulary during class discussion.



Connect It

After the class fully explores a variety of solution methods, a model or example is presented to enhance students' understanding.

Students discuss and complete questions that promote deeper connections between their solutions, other students' solutions, and the mathematical ideas of the lesson, helping to solidify their conceptual understanding.

LESSON 12 DEVELOP

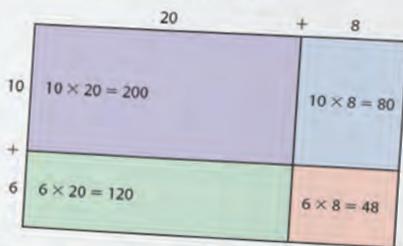
Explore different ways to understand multiplying a two-digit number by a two-digit number.

Folding chairs are set up in a school auditorium for a play. There are 16 rows of chairs. Each row has 28 chairs. How many folding chairs are set up for the play?

PICTURE IT

You can use an area model to multiply two-digit numbers.

To solve this problem, multiply 28 by 16.



$$200 + 80 + 120 + 48 = ?$$



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MODEL IT

You can also multiply two-digit numbers using partial products.

$$\begin{array}{r} 28 \\ \times 16 \\ \hline 48 \rightarrow 6 \text{ ones} \times 8 \text{ ones} \\ 120 \rightarrow 6 \text{ ones} \times 2 \text{ tens} \\ 80 \rightarrow 1 \text{ ten} \times 8 \text{ ones} \\ + 200 \rightarrow 1 \text{ ten} \times 2 \text{ tens} \\ \hline ? \end{array}$$

CONNECT IT

Now you will use the problem from the previous page to help you understand how to multiply a two-digit number by a two-digit number.

- 1 Why is the area model divided into four sections?
- 2 How do the four steps in the multiplication using partial products in **Model It** relate to the four sections in the area model in **Picture It**?
- 3 What is the sum of the partial products and also the product of 28 and 16?
.....
- 4 Would the product change if 20 + 8 on the top of the area model were changed to 10 + 10 + 8? Explain.
- 5 How could you estimate to check the reasonableness of your answer to 28×16 by multiplying with easier numbers?

6 REFLECT

Look back at your **Try It**, strategies by classmates, and **Picture It** and **Model It**. Which models or strategies do you like best for multiplying a two-digit number by a two-digit number? Explain.

Example of Grade 4 Connect It

What Does This Look Like in the Classroom?

Visit CurriculumAssociates.com/TDC to see the Try-Discuss-Connect routine in a real classroom!

Integrate Language and Mathematics

Build academic language and content knowledge at the same time. The Try–Discuss–Connect routine helps students interpret word problems and engage in academic discourse. *Ready Classroom Mathematics* also includes targeted support to help build academic English for all.

1 Think about what you know about linear equations. Fill in each box. Use words, numbers, and pictures. Show as many ideas as you can.

Possible answers:

What is It?

A linear equation is an equation whose graph is a line.

What I Know About It

The linear equation of a nonvertical line can be written in the form $y = mx + b$, where m is the slope, or rate of change, for the line, and b is the y -intercept.

A vertical line has an equation of the form $x = c$. Its slope is undefined.

linear equation

Examples

$y = 7x - 16$
 $2x - 3y = 12$
 $y = 4x$
 $y = 5$
 $x = -9$

Examples

The graph of $y = 2x + 1$:



Vocabulary Development: Every lesson includes a vocabulary graphic organizer and teacher support to help students review previously learned mathematics concepts and vocabulary they will build on during the lesson.

DEVELOP ACADEMIC LANGUAGE

WHY? Develop understanding of the phrase *isolate the variable*.

HOW? In the second Model It, students explore solving an equation by isolating the x -term. Ask students to use prior knowledge to give a rough definition for *isolate*. Provide the synonym *separate*. Read the second Model It and have students turn and talk with a partner about the steps used to isolate the x -term.



NY-8.EE.8

Suggest students ask themselves one of the following questions after each read:

- What is this problem about?
- What am I trying to find out?
- What are the important quantities and relationships in the problem?

Show your work.

Possible work:

The point of intersection seems to be (3.3, 2.6).

Cost: \$2.50

$$4(2.50) + 4(2.50) = 17.50$$

$$7.80 + 10.00 = 17.80 \quad \text{wrong!}$$

SOLUTION Each pretzel is \$1.50 and each drink is \$2.00.

b. Check your answer to problem 3a. Show your work.

Possible work:

All 7 items have the same price, so I can divide \$7.50 by 7 to find the price for 1 item.

$$17.50 \div 7 = 2.50$$

The price of each item is \$2.50.



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DIFFERENTIATION | ENGLISH LANGUAGE LEARNERS

Use with Session 2 Apply It

Levels 1–3: Reading/Listening

Help students interpret Apply It problem 7. Use **Three Reads**. Focus on the first two sentences in the first read. Explain the difference between *scores* and *earnings*. Have students state the number of points earned for a touchdown and a field goal. Then have volunteers use **Act It Out**—one person tossing a coin 7 times—heads = touchdown, tails = field goal, while other students record points and the final score. Reread sentences 3–5 and have them relate their coin toss game to the equations in the problem. Then read the problem. Ask, *What is the system of equations? What do the variables represent?* Have students solve the problem.

Levels 2–4: Reading/Listening

Use **Three Reads** to help students interpret Apply It problem 7. After the first read, have partners turn and talk about the difference between scoring multiple times and earning points. Point to the score board and ask: *What number is this?* Have students share what they know about earning points in sports. Have students use a coin toss (7 tosses, heads = touchdown; tails = field goal) to **Act It Out** to show the way teams earn points in a football game. After the last read, display these questions:

- What do the variables represent?
- What information is in each equation?

Levels 3–5: Reading/Listening

Use **Three Reads** to help students interpret Apply It problem 7. After the first read, have partners discuss the meanings of *scores* and *earnings*. Have them talk about different ways to score and earn points in sports. After the next read, have partners discuss the quantities and relationships in the problem. Display these questions to support discussions:

- What do the variables represent?
- What information is in each equation?

Reinforce with students that clear explanations use complete sentences and precise vocabulary.

• **Differentiation for English Learners:** These scaffolds are provided every day to support the different proficiency levels in the classroom for both receptive and productive language.

Help Students See Themselves in the Mathematics

Affirm and validate students' identities using the embedded teacher support in *Ready Classroom Mathematics*. Contexts and ideas that a variety of students can relate to help them make better connections to the content.

LESSON 18 | SESSION 3 ■■■□

Develop Finding the Whole

Read and try to solve the problem below.

Akira is checking his progress in a bike race. How many miles is the race?



TRY IT



Math Toolkit base-ten grid paper, double number lines, fraction bars, hundredths grids

Motivate and Engage: Relevant, high-interest scenarios engage students in meaningful mathematics.

REAL-WORLD CONNECTION

Engineers measure a machine's efficiency by calculating its mechanical advantage (MA), or the amount of help you get from the machine when completing a task. Even a simple mechanical device—such as a ramp—provides measurable MA. To find the MA of a ramp, divide its length by its height. For example, a 6-foot ramp that is $\frac{1}{2}$ foot high provides an MA of $6 \div \frac{1}{2}$, or 12. A 6-foot ramp that is $\frac{3}{4}$ foot high provides an MA of $6 \div \frac{3}{4}$, or 8. The $\frac{1}{2}$ -foot ramp has the greater MA, meaning that a mechanized wheelchair will not have to work as hard to travel up it. Ask students to think of other real-world examples when knowing how to divide by fractions would be useful.



DISCUSS IT

Ask: How is your strategy similar to mine? How is it different?

Share: My model shows...

Real-World Connection: STEAM-focused connections show how mathematics is used in everyday life.

CULTURAL CONNECTION

Alternate Notation In many parts of the world, including Latin America, the colon (:) is used as a division symbol. In the United States, the colon (:) is used as a ratio symbol and the obelus (\div), which has a horizontal line and two dots similar to a colon, is used as a division symbol. The solidus (/) can also be used as a division symbol throughout the world. Encourage students who have experience with using a colon as a division symbol to share what they know with the class.

$$12 : 4$$

$$12 \div 4$$

$$12/4$$

$$\frac{12}{4}$$

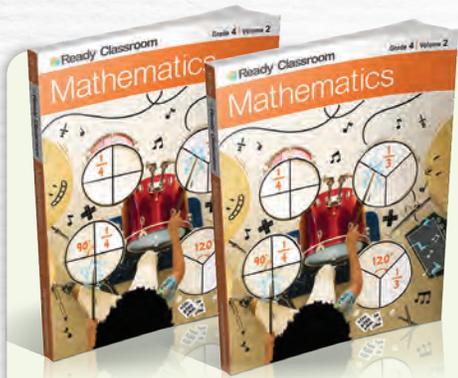
$$4 \overline{)12}$$

Additional information about this notation is available on **Teacher Toolbox**.

Cultural Connection: Alternative notations and algorithms used in various cultures are identified to help raise awareness and make connections.

Program Components

Student Materials



Student Worktext E/S

Students take ownership of their learning as they work through the rich tasks and practice new skills in each lesson.



New York Assessments Practice Book E/S

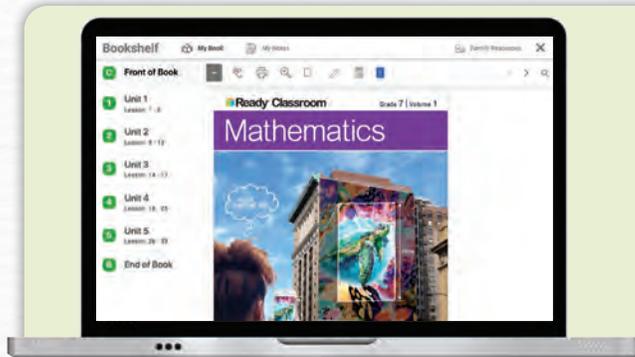
CCLS Currently Available
NGLS Available 2021



Hands-On Materials

Engage students in hands-on learning.

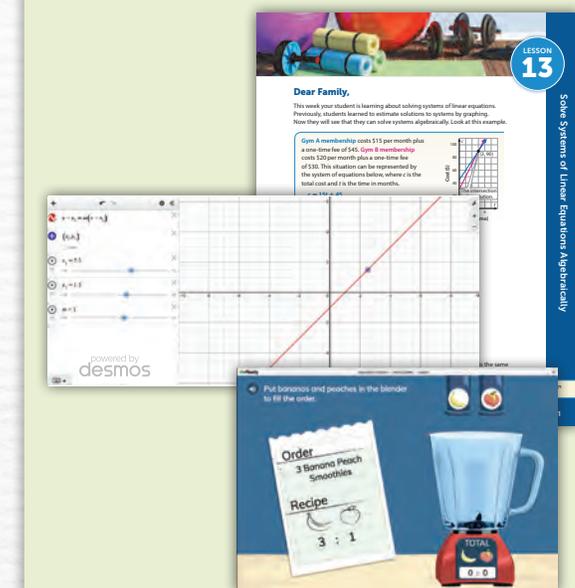
Available at
Hand2Mind.com/Curriculum-Associates



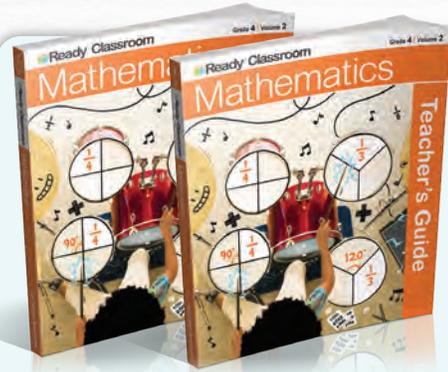
Student Digital Experience

Accessible through i-Ready.com and provides access to all student components of *Ready Classroom Mathematics*

- Student Bookshelf provides online access to student resources, including:
 - E/S Digital Student Worktext with tools, such as note-taking, text-to-speech, highlighting, and a calculator
 - E/S Family Resources, such as a Family Letter for every lesson and the Unit Flow & Progression Videos
 - E/S Multilingual Glossary available in nine languages
 - E/S Student Handbook with a guide to the Standards for Mathematical Practice, a mathematical language reference tool, and 100 Questions That Promote Mathematical Discourse
 - E/S Interactive Learning Games that develop conceptual understanding, improve fluency, and develop a positive relationship to challenge
 - E/S Interactive Practice that helps students build procedural fluency and skill by providing immediate, conditional feedback (Grades 6–8 available 2021)
- Digital Math Tools allow students to explore concepts and deepen understanding.



Teacher Materials



Teacher's Guide E/S

Two volumes include discourse-based instructional support, math background, and embedded professional learning.

Available in print and online



Discourse Cards and Cube E/S

These resources provide a question or a sentence starter to get students talking about mathematics.

Available in print and online



Ready Classroom Central

This teacher portal provides on-demand access to tips and resources for a successful implementation.



Teacher Digital Experience

Accessible through [i-Ready.com](https://www.READY.com) and provides access to all teacher components of *Ready Classroom Mathematics*

Teacher Toolbox provides access to all K–8 resources in one convenient location. A few highlights include:

- Interactive Tutorials
- Digital Math Tools
- Unit Flow & Progression Videos*

Assignable Practice Resources:

- E/S Learning Games
- Interactive Practice

Digital Assessments:

- E/S Diagnostic
- Comprehension Checks

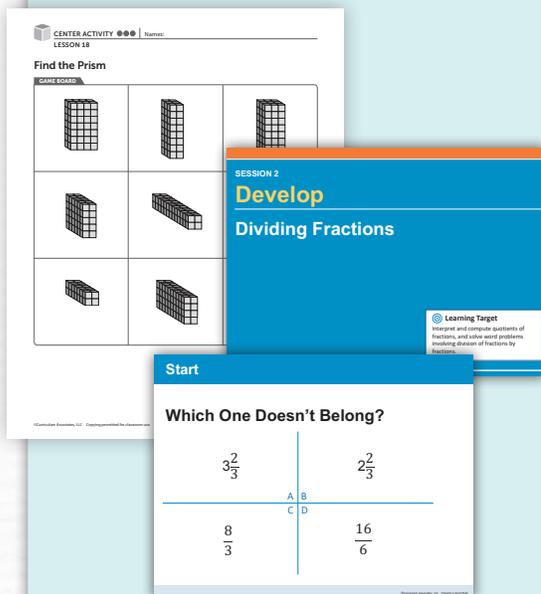
Reports:

- Diagnostic Results
- Prerequisites
- Comprehension Check Results
- Learning Games
- Interactive Practice

Optional Add-On:

- E/S *i-Ready Personalized Instruction*

- E/S Lesson PowerPoint® Slides
- E/S Fluency and Skills Practice
- E/S Center Activities
- E/S Enrichment Activities
- E/S Assessment Resources
- E/S Literacy Connections
- E/S Unit Games
- E/S Next Gen Enhancement Lessons and Activities
- E/S NY Assessment Practice



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