

Program Overview



Grades

2-5

It's why you became a teacher.

You can tell when the light bulb goes on for your students.

It could be in their eyes or a glowing smile, a subtle change in posture, or a shift in the tone of their voice.

When they know they've got it, they couldn't be prouder—and neither could you.

***These magical moments
stay with you forever.***



i-Ready Classroom Mathematics, Oregon Edition is a comprehensive math curriculum for Grades K–8 designed to help you create those “a-ha” moments every day for every student. Here’s how . . .



Focus on High-Impact Teaching Strategies 4

Use the most impactful, research-based teaching strategies to help students become independent, mathematical thinkers.



Turn Data into Action 14

Accelerate students’ learning by combining powerful insights from data with thoughtfully curated resources to scaffold instruction.



Put Students at the Heart of Learning 20

Foster the joy of learning with a classroom environment that’s focused on students’ creativity, critical thinking, communication, and collaboration.



Support Teachers Every Step of the Way 26

Thoughtful service, support, and resources are available to make your job a little easier, so you have time to focus on what matters most—your students.

For a full list of program components available in English and Spanish, see [pages 34–35](#).



Promote Meaningful Math Learning with a Purposeful Plan

Make the best use of instructional time. The lessons in *i-Ready Classroom Mathematics, Oregon Edition* span multiple days and integrate standards to help students make connections and develop a deep conceptual understanding of the mathematics.

Three Types of Lessons

Strategy Lessons

Majority of Lessons in the Program

Help students make important connections and deepen their understanding while they acquire and develop mathematical skills and strategies.

Understand Lessons

Lessons That Begin with "Understand"

Dedicate time to introduce students to new ideas conceptually before they use those ideas in problem situations.

Math in Action Lessons

Lesson at the End of Each Unit

Review and apply unit content and teach students how to develop complete responses to multistep performance tasks.

Structure of a Lesson

Within a lesson, each session (or "day") plays a different role in supporting students' understanding. This provides students with a variety of experiences and gives them the time they need to develop conceptual understanding, build procedural fluency, and apply the mathematics to novel situations.

Day 1	Day 2	Day 3	Day 4	Day 5
Explore Session	Develop Sessions			Refine Session
Review prerequisites to address unfinished learning and activate prior knowledge that relates to the lesson.	Build multidimensional understanding of grade-level content through problem solving, discourse, practice, and application of new learning.			Strengthen skills and understanding with in-class time for practice and differentiation.

Lessons in *i-Ready Classroom Mathematics, Oregon Edition* Help Teachers Do It All

- ✓ **Address the Oregon Mathematics Standards** with rigorous, student-centered discourse and practice.
- ✓ **Develop mathematical practices** authentically through problem solving and discussion.
- ✓ **Incorporate NCTM's Effective Mathematics Teaching Practices** naturally into instruction.
- ✓ **Engage *all* learners** by encouraging all students' voices, perspectives, and experiences.
- ✓ **Support English Learners** so all students can engage with the language of mathematics.
- ✓ **Integrate technology** to enhance students' understanding of the mathematics.
- ✓ **Assess understanding** formally, informally, and holistically.
- ✓ **Differentiate with ease** in real time with a wide range of resources.
- ✓ **Encourage positive learning habits** that promote and maintain healthy learning environments.
- ✓ **Implement the Universal Design for Learning (UDL)** to the benefit of all students.





Spark Curiosity: *Explore Session*

1 Day

Explore
Session

1–3 Days
Develop
Sessions

1 Day
Refine
Session

Engage students and help them build upon the schema they have already developed with problem-based lessons. Each lesson starts by activating students' prior knowledge to set a foundation upon which they can place the new facts, ideas, and concepts of the lesson.

Effective Math Teaching Practices

National Council of Teachers of Mathematics' (NCTM's) Effective Mathematics Teaching Practices are woven into each session.

NCTM EMTP Look for this text to see how these best practices are seamlessly incorporated into instruction.

NCTM EMTPs: Effective mathematics educators . . .

1. Establish mathematics goals that focus on learning.
 2. Implement tasks that promote reasoning and problem solving.
 3. Use and connect mathematical representations.
 4. Facilitate meaningful mathematical discourse.
 5. Pose purposeful questions.
 6. Build procedural fluency from conceptual understanding.
 7. Support productive struggle in learning mathematics.
 8. Elicit and use evidence of student thinking.
- (NCTM, 2014)

Activate and Assess Prior Knowledge

Students are introduced to lesson concepts with a problem they can solve using previously learned models and strategies that are relevant to the new content of the lesson.

NCTM EMTP 2

Build a Bridge to New Lesson Content

Look Back/Look Ahead prompts prepare students for the new content they will learn in the rest of the lesson.

NCTM EMTP 5

LESSON 6

Explore Adding Two-Digit Numbers

You know how to add one-digit numbers. Use what you know to try to solve the problem below.

Kelvin recycles 27 cans on Thursday. He recycles 15 cans on Friday. How many cans does Kelvin recycle in all?

TRY IT

Math Toolkit

- base-ten blocks
- open number lines
- tens place-value mats

DISCUSS IT

Ask your partner:
Why did you choose that strategy?

Tell your partner:
I started by...

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

- Add two-digit numbers by adding tens and adding ones.
- Add two-digit numbers by making a ten.
- Explain how to add two-digit numbers.


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LESSON 6 EXPLORE

CONNECT IT

1 LOOK BACK
How many cans does Kelvin find in all?

2 LOOK AHEAD
Here are some ways to find $27 + 15$.
Use base-ten blocks.

a. 

2 tens and 7 ones 1 ten and 5 ones tens and ones

Go to the next ten. **Add tens, then ones.**

b. $27 + 3 = \dots\dots\dots$ c. $\begin{array}{r} 20 & 7 \\ + 10 & + 5 \\ \hline \end{array} = 42$

$30 + 10 = \dots\dots\dots$ + = 42

$40 + 2 = \dots\dots\dots$

3 REFLECT
Why is adding 3, 10, and 2 the same as adding 15?

LESSON 6 SESSION

Prepare for Adding Two-Digit Numbers

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

What Is It?

What I Know About It

regroup

Examples

Examples

Examples

2 Why is adding 6, 10, and 5 to a number the same as adding 21 to that number?

Vocabulary Development

To build on their vocabulary, students use a graphic organizer to review a previously learned term that plays a key role in the upcoming lesson. This helps students reflect on concepts they know and will build upon throughout the lesson.



Build Understanding: *Develop Sessions*

1 Day
Explore
Session

1–3 Days

Develop
Sessions1 Day
Refine
Session

Help students make sense of math by making connections across multiple representations. Each lesson includes several sessions devoted to helping students integrate new concepts into their existing understanding of related mathematical ideas, patterns, and procedures.

A Powerful Framework for Instruction

The **Try–Discuss–Connect instructional framework** seamlessly incorporates multiple routines, math practices, and effective teaching practices into instruction.

LESSON 6

SESSION 2 ● ● ● ● ●

Develop Different Ways to Show Addition

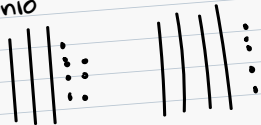
Read and try to solve the problem below.

Maria reads for 38 minutes. Then she reads for 45 minutes. How many total minutes does Maria read?



TRY IT

Antonio



$$\begin{aligned} 38 + 2 &= 40 \\ 40 + 43 &= 83 \\ 83 \text{ minutes} \end{aligned}$$

**Math Toolkit**

- base-ten blocks
- open number lines

Kayla

$$3 \text{ tens} + 4 \text{ tens} = 7 \text{ tens}$$

$$8 \text{ ones} + 5 \text{ ones} = 13 \text{ ones}$$

$$7 \text{ tens} + 13 \text{ ones} = 8 \text{ tens and } 3 \text{ ones}$$

Maria reads for 83 minutes



DISCUSS IT

Ask your partner:
How did you get started?

Tell your partner:
The strategy I used to find the answer was...

Try It

Students make sense of the problem and persevere in solving and supporting their thinking. [NCTM EMTP 7](#)

By having time to think through the problem as a class and then try it on their own first, students learn to tap into their existing knowledge and develop perseverance.

Discuss It

Students share their thinking with a partner and compare their strategies. [NCTM EMTP 2](#)

By engaging in peer-to-peer discourse, students build confidence and learn from one another.

CONNECT IT

Now you will use the **Try It** to help you understand how to add tens and ones.

- Look at **Picture It**. What is the total number of tens and ones?
..... tens + ones
- How many tens and ones are in 13?
 $13 = \dots$ ten and ones, or + 3.
- Add both tens. Then add the ones.
 $70 + 10 + 3 = \dots + \dots$
 $= \dots$
- Explain how you would find $38 + 45$.

5 REFLECT

Look back at your **Try It**, strategies by classmates, and **Picture It** and **Model Its**. Which models or strategies do you like best for showing addition? Explain.

.....

.....

.....

APPLY IT

Use what you just learned to solve these problems.

- Enrico reads books in braille. He reads 17 books in May. He reads 37 books in June. How many total books does Enrico read? Show your work.

**Solution**

- Explain how to go to the next ten to add $36 + 18$. Show your work.

- What is the

- A 76
B 79
C 86
D 89

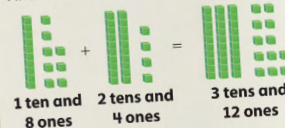
Name: _____

Practice Different Ways to Show Addition

Study the **Example** showing how to use base-ten blocks to add two-digit numbers. Then solve problems 1–7.

EXAMPLE

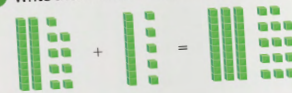
Find $18 + 24$.



$$\begin{aligned} 3 \text{ tens } 12 \text{ ones} &= 30 + 10 + 2 \\ &= 40 + 2 \\ &= 42 \end{aligned}$$

Noe makes 29 pita breads. Then he bakes 15 more.

- Write the tens and ones. Then add the tens and ones.



$$\dots \text{ tens } \dots \text{ ones} + \dots \text{ ten } \dots \text{ ones} = \dots \text{ tens } \dots \text{ ones}$$

- How many tens and ones are in 14?

$$14 = \dots \text{ ten and } \dots \text{ ones, or } 10 + \dots$$

- Add the tens. Then add the ones.

$$30 + 10 + 4 = \dots + \dots \text{ or } \dots$$

Noe makes pita breads.

Connect It

Students make connections between strategies, reflect on what they have learned, and apply that learning to new problems.

NCTM EMTPs 4, 5, and 8

This helps students deepen their understanding, build flexibility in their thinking, and better retain what they have learned.

Daily Practice

Students solidify their conceptual understanding and build procedural fluency from that understanding. **NCTM EMTP 6**



Make Learning Stick: *Refine Session*

1 Day
Explore
Session

1–3 Days
Develop
Sessions

1 Day

Refine
Session

Give students time to practice and cement their learning from the lesson. Each lesson ends with dedicated class time for practice and options for one-on-one or small group differentiation activities.

Dedicated Class Time for Practice and Differentiation



Monitor students' work on the Start activity and initial problem set.



Assess students' understanding using the Error Analysis guide and observations of students' work.
NCTM EMTP 8



Provide differentiated options for additional practice and to support students' needs.



Reteach, Reinforce, or Extend Learning

Approaching Proficiency:

Provide additional support with the Reteach activity in the Oregon Teacher's Guide.

NCTM EMTPs 2 and 3

RETEACH



Hands-On Activity

Use a hundred chart to add two-digit numbers.

Students approaching proficiency with adding two-digit numbers will benefit from additional work using a number model to add two-digit numbers.

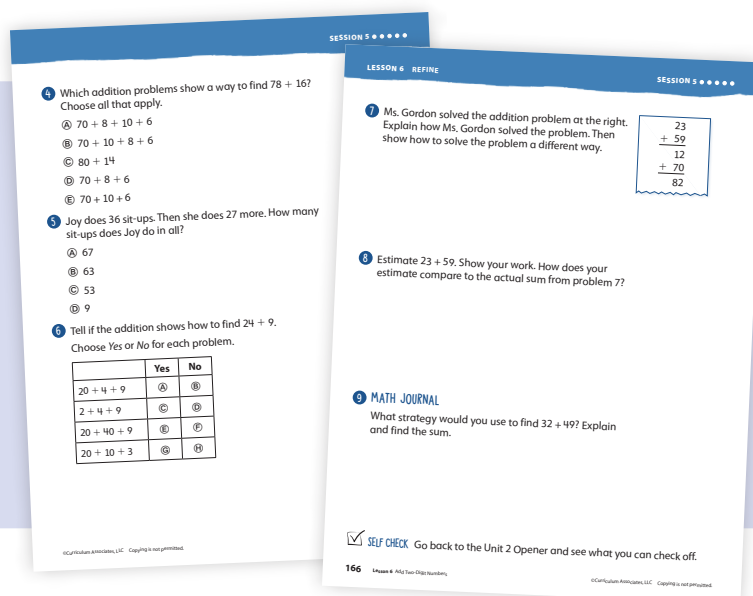
Materials For each student: 1 counter, Activity Sheet *Hundred Chart*

- Write the addition problem $36 + 27$ on the board.
- Tell students to find 36 on the chart and place the counter on it.
- Prompt students to see that in the hundred chart, moving down vertically adds 10. They can add 20 by moving the counter vertically down the chart from 36 to 46 and from 46 to 56 and then count on the additional 7 by moving the counter horizontally 7 spaces.
- Write other problems such as $45 + 38$, $57 + 36$, and $68 + 26$ on the board for students to model using the hundreds chart and counters.

Meeting Proficiency:

Reinforce learning with additional practice problems in the Student Worktext.

NCTM EMTP 6



EXTEND



Challenge Activity

Add three two-digit numbers.

Students extending beyond proficiency will benefit from deepening understanding of adding two-digit numbers.

- Write $23 + 34 + 16$ on the board. Challenge students to solve the problem using any strategy they want.
- Have students share their strategies.
- Ask: *How did knowing strategies for adding 2 two-digit numbers help you add 3 two-digit numbers?*
- Write other problems on the board for students to solve, such as $41 + 24 + 17$, $35 + 25 + 14$, and $15 + 32 + 47$.



Practice That's Just Right

Reinforce students' mathematical understanding with a variety of rich practice opportunities. The print and digital practice in *i-Ready Classroom Mathematics, Oregon Edition* solidifies students' conceptual understanding first, then provides fluency practice and opportunities for students to apply their learning to new problems. [NCTM EMTP 6](#)

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.

Fluency and Skills Practice

Optional targeted practice uses patterns and repeated reasoning to build mathematics skills. Available as a student workbook or as PDFs on the Oregon Teacher Toolbox.

The collage displays several pages from the *i-Ready Classroom Mathematics, Oregon Edition* worktext. Visible pages include:

- Practice Adding Fractions:** A page with a green header, an example problem about muffins, and several addition problems like $\frac{3}{12} + \frac{6}{12} = \frac{9}{12}$.
- FLUENCY AND SKILLS PRACTICE:** A page with a blue header, a grid of addition problems, and a section for writing missing numbers in boxes.
- Cumulative Practice:** A page with a blue header, sections for Place Value, Read and Write Whole Numbers, and Compare Whole Numbers, with various math problems.



Digital Learning Games

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



Google Classroom

Easily assign resources to Google Classroom. Student resources, including the digital worktext and PDFs, work with most learning management systems.



Interactive Practice with Technology-Enhanced Items

This assignable and auto-graded digital practice reinforces understanding. Teachers receive performance reports, while students receive immediate, meaningful feedback to keep them on track.

Hands-On Games

Unit Games are a fun way to review unit content. Grade 2 also includes Grade Level Games to help students build fluency and understanding of critical concepts.



Name: _____

Fraction Sums

What you need: *Fraction Sums* Recording Sheet, 2 number cubes (1–6)



Directions

- Players each choose a denominator from the list on the Recording Sheet. Write their numbers in the *ator Choice* column of the g Sheet.

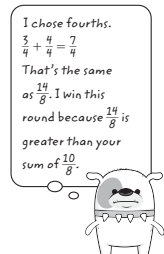
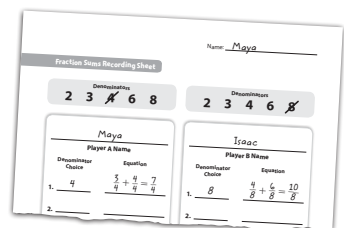
Rolls the number cubes and writes two fractions using the numbers rolled as the numerators and the chosen denominator.

Writes and solves an addition problem with the two fractions as the addends on the Recording Sheet.

Takes a turn following the same steps A.

Compares the two fraction sums. The player with the greater sum wins the round.

At the end of the game, players choose a denominator that has not been used yet. The player with the most wins after 5 rounds wins the game.



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GRADE 4 • UNIT 4

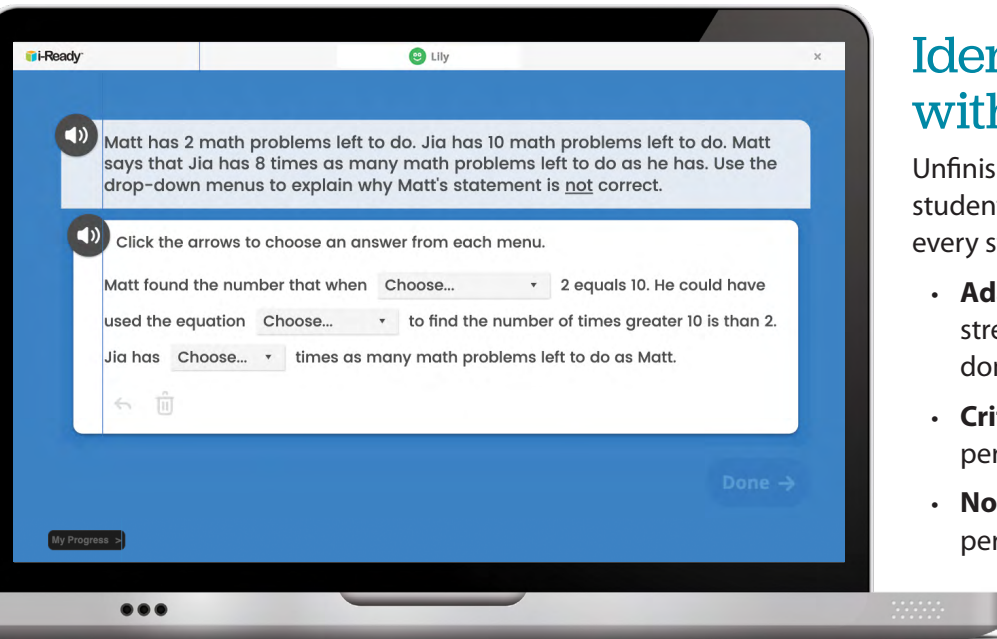
Page 1 of 2



Plan for Success

When students are lifelong learners, data is a roadmap—not a destination.

Valid, reliable, and timely data lets you know where your students are so you can meet them there and give them the right resources and support to continue their journey.



Identify Students' Needs with the Diagnostic

Unfinished learning can lead to challenges as students work on grade-level standards. Knowing every student's needs is critical for success.

- **Adaptive (Grades K–12):** Pinpoint students' strengths and needs across all skills and domains.
- **Criterion referenced:** Compare students' performance against the standards.
- **Norm referenced:** Compare students' performance to other students.

State and Nationally Recognized

Numerous third parties have deemed the Diagnostic as a valid and reliable academic screener and progress monitoring tool.



//CODiE//
2022 SIIA CODiE FINALIST

BUROS
CENTER FOR TESTING

Received a positive review in *The Twentieth Mental Measurements Yearbook* (published by the Buros Center for Testing)



i-Ready received high ratings from the National Center on Intensive Intervention (NCII).

To see evidence that the Diagnostic is proven to work, visit CurriculumAssociates.com/Research-and-Efficacy.

Accelerate Learning with a Custom Plan

Based on results from the Diagnostic, the Prerequisites report identifies the essential prerequisite skills to focus on for every student for every lesson.

- 1 Learning Progression:** Understand the progression of standards going back two+ years.
- 2 Whole Class Guidance and Pacing Support:** Integrate and scaffold prerequisite skills into the grade-level content scope and sequence.
- 3 Small Group Resources:** Address specific in-depth needs with targeted resources for teacher-led, partner, and independent activities.

Prerequisites

Subject

Class/Report Group

Grade

Unit

Math

A. Shah - Grade 6, Section 1

Grade 6

Unit 2 (Lessons 7-11)

Unit Overview

Major Themes of Unit

Unit 2: Decimals and Fractions: Base-Ten Operations, Division with Fractions, and Volume

In this unit, students use what they know about adding, subtracting, and multiplying decimals to hundredths to extend their understanding of computing with decimals. They learn the standard algorithm for whole number and decimal division and use both visual models and equations to divide with fractions. They will also build on their prior understanding of volume and of multiplying with fractions to find volumes of rectangular prisms with fractional edge lengths.

Unit Flow & Progression Video

Learning Progression

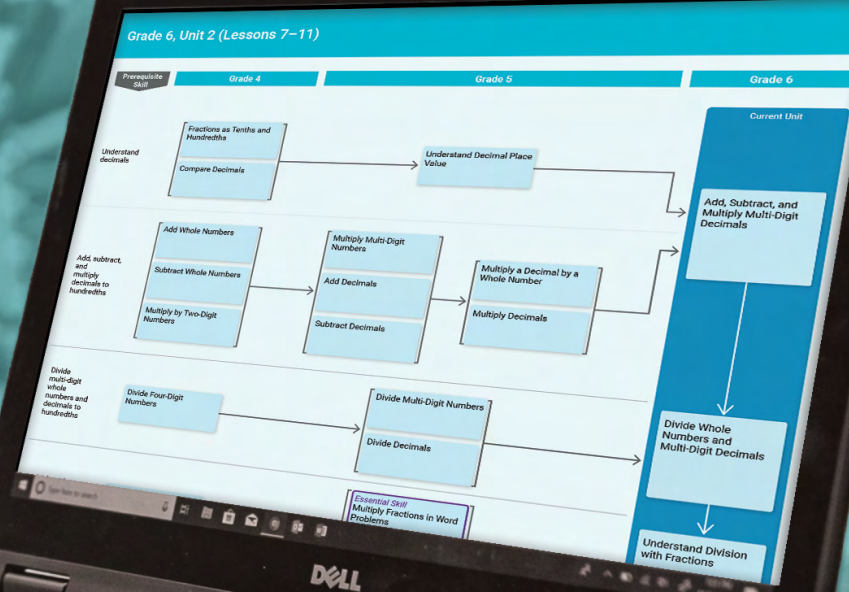
Whole Class

After familiarizing yourself with the needs of the students based on the data below, you may decide to address these prerequisite skills during whole class instruction.

Unit and Lesson Support

Yearly Pacing for Prerequisites

Prerequisite Groups	Unit Group A 2 Students	Unit Group B 8 Students	Unit Group C 2 Students	Unit Group D 7 Students
Prerequisites	Recommendations	Recommendations	Recommendations	Recommendations
Understand decimals.	✓	✓	✓	Additional Support
Add, subtract, and multiply decimals to hundredths.	✓	✓	Additional Support	In-Depth Review
Divide multi-digit whole numbers and decimals to hundredths.	✓	✓	Additional Support	In-Depth Review
Essential Skill Multiply with fractions and divide with unit fractions.	✓	Additional Support	In-Depth Review	In-Depth Review
Find volume with whole numbers.	✓	Additional Support	In-Depth Review	In-Depth Review
	Banks, Abby Sanchez, Laura	Graves, Christian Cheng, Bianca Delaney, Aaron	Royce, Logan McIntosh, Markus	Gonzales, Bella Hopper, Carla McKee, Kayla

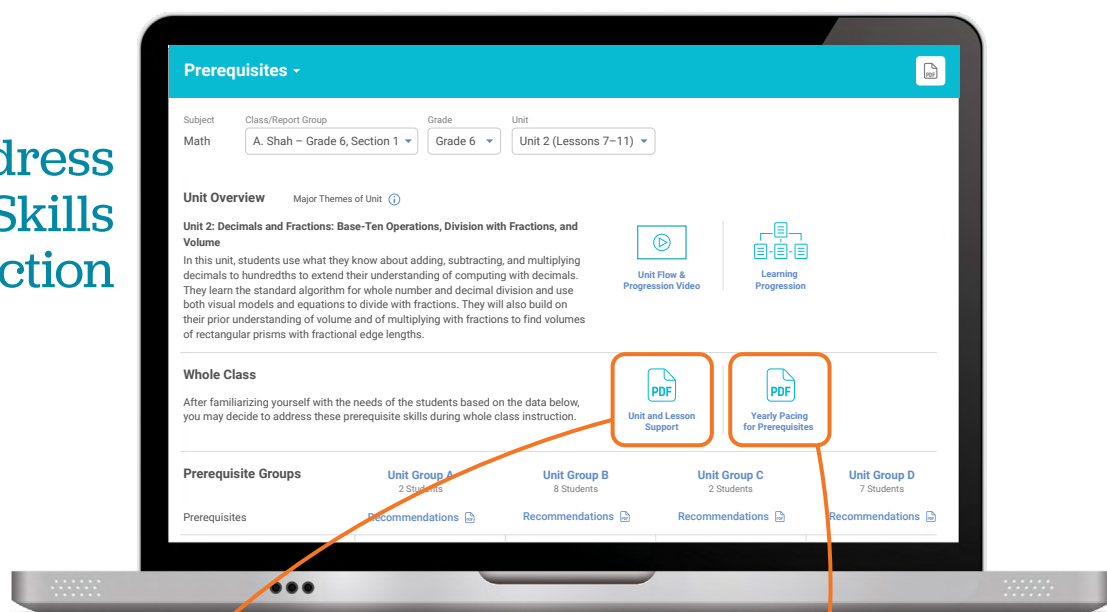




Make a Difference Every Day

Math class goes by quickly. You need a thoughtful approach to effectively differentiate in that short amount of time. Whether it's addressing unfinished learning or responding in the moment to unlock a tricky concept or address a misconception, *i-Ready Classroom Mathematics, Oregon Edition* has the plan and resources for efficient differentiation.

Proactively Address Prerequisite Skills during Instruction



◆ ON-THE-SPOT TEACHING TIPS FOR GRADE 4

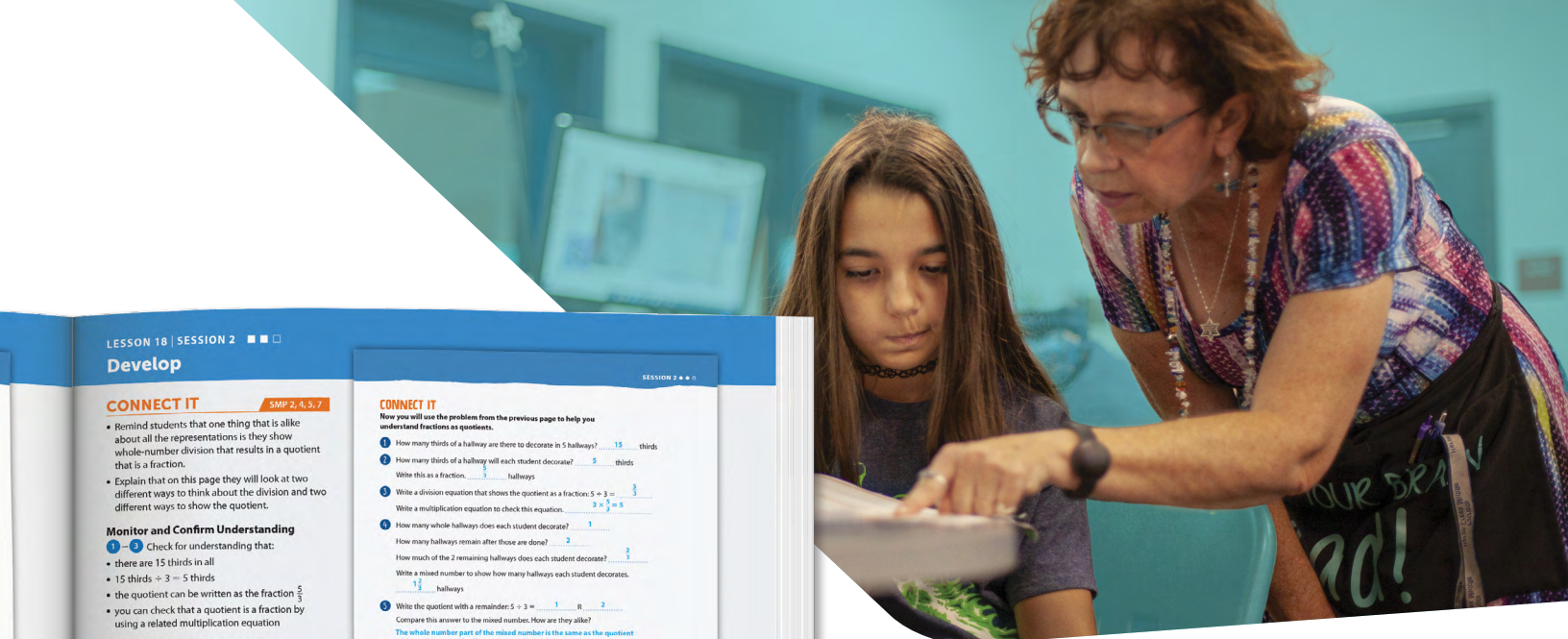
- **Spend extended time using visual models.** Students may need more practice with visual models before moving into abstract strategies. It is okay if students want to model every problem, as this will support in-depth understanding. Students will want to leave visual models behind when they are ready.
- **Connect visual models and equations.** Support students by continually making connections between visual models and equations during class discussions and student work time. Over time, students will learn to visualize relationships mentally rather than relying on drawings.
- **Make sense of word problems.** Help students develop an internal dialogue in which they ask themselves, "How many of these are in that?" when they work with division problems. Doing so will help students determine which quantity is the dividend and which is the divisor and be able to estimate the result.
- **Provide multiplication tables.** Students who are still learning multiplication facts can solve problems by referring to a multiplication table. As long as they understand the concepts of multiplication and division, students can work productively on problem-solving even before they are fluent with all their facts.
- **Use manipulatives.** Students can group counters to find multiples and factors as they deepen their understanding of the factor-multiple relationship. As students have more experiences with multiplication models, such as arrays, and become fluent with multiplication and division facts, they will learn to find factors and multiples without using manipulatives.

On-the-Spot Teaching Tips suggest additional scaffolding to support students with unfinished learning as they engage in grade-level work.

Unit 2 Operations: Multiplication, Division, and Algebraic Thinking

PREPARE for Unit 2, Lessons 6–8 by reviewing basics of multiplication and division to support students in solving word problems and exploring factors and multiples.	0 to 6 days
Grade 3, Lesson 11 Understand How Multiplication and Division Are Connected	
Grade 3, Lesson 12 Multiplication and Division Facts	
Grade 3, Lesson 17 Solve One-Step Word Problems Using Multiplication and Division	
Lesson 6 Understand Multiplication as a Comparison	3 days
Lesson 7 Multiplication and Division in Word Problems	4 days
Lesson 8 Multiples and Factors	2 to 5 days
Lesson 9 Number and Shape Patterns	2 to 4 days
PREPARE for Unit 2, Lesson 10 by reviewing two-step word problems to support students in modeling and solving multi-step word problems.	0 to 2 days
Grade 3, Lesson 18 Solve Two-Step Word Problems Using the Four Operations	
Lesson 10 Model and Solve Multi-Step Problems	4 days

Yearly Pacing for Prerequisites provides guidance on when and how to use Prerequisite Lessons to address unfinished learning throughout the year.



LESSON 18 | SESSION 2 ■ ■ ■

Develop

CONNECT IT

SMP 2.4.5.7

- Remind students that one thing that is alike about all the representations is they show whole-number division that results in a quotient that is a fraction.
- Explain that on this page they will look at two different ways to think about the division and two different ways to show the quotient.

Monitor and Confirm Understanding

- Check for understanding that:
 - there are 15 thirds in all
 - $15 \text{ thirds} \div 3 = 5 \text{ thirds}$
 - the quotient can be written as the fraction $\frac{5}{3}$
 - you can check that a quotient is a fraction by using a related multiplication equation

Facilitate Whole Class Discussion

- Have students think about modeling the way of dividing up the work described in problem 4. Guide them to connect writing the quotient with a remainder and as a mixed number.

ASK How would you change the fraction model in Picture It to show this way of dividing up the work? What would a number line model of this way look like?

LISTEN FOR In Picture It, each of the first three rectangles would be labeled with a single letter, J, M, and H. On a number line, you could label from 0 to 1 with J, from 1 to 2 with M, and from 2 to 3 with H. For the other two sections, label $\frac{1}{3}$ of each section with J, $\frac{1}{3}$ with M, and $\frac{1}{3}$ with H.

ASK Does the mixed number or the quotient with a remainder better represent the solution?

LISTEN FOR The mixed number gives an exact amount each person decorates. The quotient with a remainder shows that each decorates 1 full hallway and some of the remaining 2 hallways.

- Look for the idea that the bar in a fraction can be interpreted as meaning *divided by*—the numerator is divided by the denominator—just as the division symbol in an expression does.

Reflect

How does the bar in a fraction represent division?

Without the remainder, the numerator is the same as the remainder.

- How does the bar in a fraction represent division?
The bar means that the numerator is divided by the denominator.

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 finding fraction quotients? Explain.

Students may respond that they like using fraction models or number lines to visualize dividing an amount into equal shares, or that they like representing a problem as a division equation that shows the quotient as a fraction.

CONNECT IT

Now you will use the problem from the previous page to help you understand fractions as quotients.

- How many thirds of a hallway are there to decorate in 5 hallways? $\frac{15}{3}$ thirds
- How many thirds of a hallway will each student decorate? $\frac{5}{3}$ thirds
- Write this as a fraction: $\frac{5}{3}$ hallways
- Write a division equation that shows the quotient as a fraction: $5 \div 3 = \frac{5}{3}$
Write a multiplication equation to check this equation: $3 \times \frac{5}{3} = 5$
- How many whole hallways does each student decorate?
How many hallways remain after those are done? $\frac{2}{3}$
How much of the 2 remaining hallways does each student decorate?
Write a mixed number to show how many hallways each student decorates: $1\frac{2}{3}$ hallways
- Write the quotient with a remainder: $5 \div 3 = 1\frac{2}{3}$
Compare this answer to the mixed number. How are they alike?
The whole number part of the mixed number is the same as the quotient without the remainder. The numerator is the same as the remainder.
- How does the bar in a fraction represent division?
The bar means that the numerator is divided by the denominator.
- REFLECT**
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DIFFERENTIATION | EXTEND



Hands-On Activity

Connect fractions to equivalent division expressions.

If students are unsure about how to interpret a fraction as division, then use this activity to rewrite fractions as equivalent division expressions.

Materials For each student: base-ten blocks (1 tens rod, 2 ones units), Activity Sheet Digit Cards (3, 4, 5)

- Distribute materials to students. Have students use the digit cards and base-ten blocks to "build" the fraction used to solve the Try It problem, $\frac{5}{3}$, using the rod as the fraction bar and placing a digit card for 5 above the rod and a digit card for 3 below it.
- Ask students to alter the fraction they built to show the division expression used to represent the problem, $5 \div 3$, moving the digit cards and using the ones units along with the rod to make a division symbol (\div). Discuss where students placed the numerator and denominator to make the expression.
- Repeat the activity, using the situation from Explore Try It: 4 fluid ounces of paint shared equally by 5 students.

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Authentically Respond to Students in the Moment

Monitor Understanding

Throughout each session, there are opportunities to observe students' understanding and multiple options to differentiate.

Just-in-Time Supports

Reteach, reinforce, or extend learning using the activities provided in the yellow differentiation boxes in the Oregon Teacher's Guide. The line points to where these activities can be used during instruction to support students' needs.

DIFFERENTIATION | EXTEND



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Materials For each student: base-ten blocks (1 tens rod, 2 ones units), Activity Sheet Digit Cards (3, 4, 5)

- Distribute materials to students. Have students use the digit cards and base-ten blocks to "build" the fraction used to solve the Try It problem, $\frac{5}{3}$, using the rod as the fraction bar and placing a digit card for 5 above the rod and a digit card for 3 below it.
- Ask students to alter the fraction they built to show the division expression used to represent the problem, $5 \div 3$, moving the digit cards and using the ones units along with the rod to make a division symbol (\div). Discuss where students placed the numerator and denominator to make the expression.
- Repeat the activity, using the situation from Explore Try It: 4 fluid ounces of paint shared equally by 5 students. This time, have students first show the division expression and then turn it into the fraction quotient.

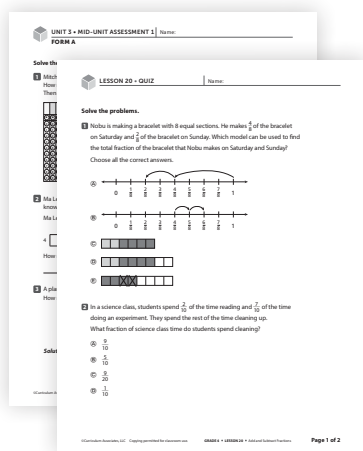


Track, Support, and Celebrate Students' Growth

Know what your students know. *i-Ready Classroom Mathematics, Oregon Edition* includes print and digital assessments and a wealth of resources to meet all students' learning needs. Reports are in depth yet intuitive, so you can easily plan the next steps for instruction.

Assess Students' Understanding and Monitor Progress

Choose how you want to gather data on students' strengths and dig deeper into their individual needs.

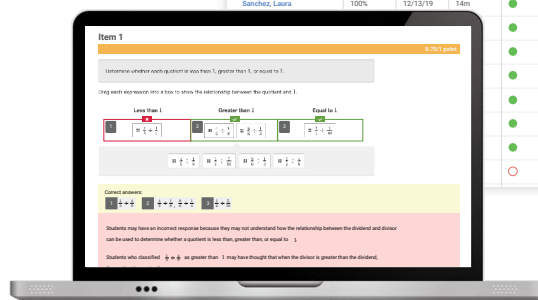
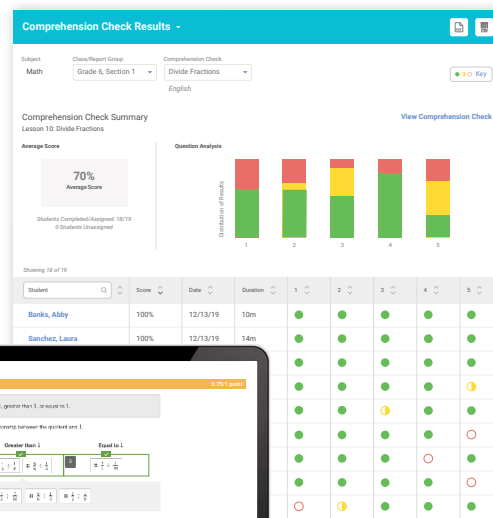


Paper/Pencil Assessment

To check students' understanding with a print-based option, use the editable Lesson Quizzes and Mid-Unit and Unit Assessments.

Digital Assessments

Comparable to the paper/pencil options, digital Comprehension Checks provide in-depth reports analyzing students' understanding of concepts.



Differentiation Resources for Each Lesson

Once you identify instructional needs, choose the resource that will help students grow and succeed.

Tools for Instruction

Add and Subtract Fractions

Objective: Add and subtract fractions using number lines. **Materials:** plastic page protector, dry erase marker, Blank Number Line (page 3)

Students have previously used fraction models to add and subtract fractions with like denominators. Adding and subtracting fractions can sometimes be difficult for students because they do not have a strong understanding of fractions in general. This activity will have students solving problems involving fractions by having them add and subtract fractions on number lines. This will prepare students for solving problems involving fractions with unlike denominators.

Step by Step 15–30 minutes

- Add using a number line.**
 - Provide the student with a copy of Blank Number Line (page 3) in a plastic page protector and a dry erase marker.
 - Say: *Step 1: Hidden are pointing a mouse. Step 2: $\frac{1}{2}$ of the mouse. Hidden points $\frac{1}{2}$ of the mouse. How much of the mouse have they pointed to?* Tell the student that they will model solving this problem using a number line.
 - Have the student identify that this addition problem $\frac{1}{2} + \frac{1}{2} = \frac{2}{2}$ can be used to solve this problem.
 - Discuss with the student that the two addends have 12 as the denominator. Have the student label the number line by tenths.
 - Point out that the student must start at $\frac{1}{2}$ on the number line and make five jumps to the right. Then have the student identify the sum to solve the problem. ($\frac{5}{6}$ of the mouse)
- Subtract using a number line.**
 - Tell the student that they will model solving another problem using a number line. Say: *A recipe calls for $\frac{3}{4}$ of a cup of flour. He has $\frac{1}{2}$ of a cup of flour. How much more flour does he need?*
 - Have the student identify that this subtraction problem $\frac{3}{4} - \frac{1}{2} = \frac{1}{4}$ can be used to solve this problem.
 - Ask: *How can you use the number line to solve?* (Sample answer: Divide the number line into eighths. Start at $\frac{3}{4}$ and jump one space to the left.)
 - Have the student use their process to find the difference to solve the problem. ($\frac{1}{4}$ of a cup of flour)
- Solve problems using a number line.**
 - Have the student solve more problems using the number line.
 - See Assessment 3.1 at the end of the unit.

Reteach: Tools for Instruction are mini-lessons for reteaching lesson concepts.

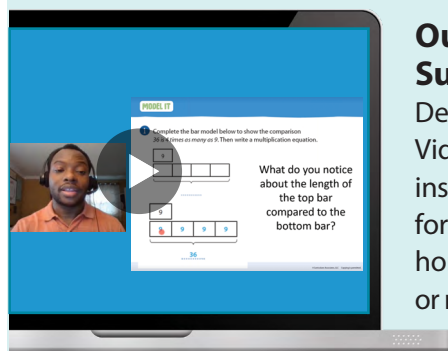
Unfinished Learning:

Prerequisite Lessons and Interactive Tutorials can address skills to help students access grade-level content.



Out-of-Class Support:

The Develop Session Video Library provides instructional videos for remote learning, homework supports, or reteaching concepts.



Center Activity

Different Ways to Show Sums

What You Need

- number cube (1–6)
- 15 game markers in one color
- 15 game markers in a different color
- Game Board

What You Do

- Take turns. Roll the number cube. Find the fraction sum next to that roll in the table.
- Find one expression on the Game Board that has that sum. Your partner checks your expression.
- If you are correct, place your game marker on that expression. If you are not correct or if there are no uncovered expressions with that sum, your turn ends.
- Continue until all the expressions on the Game Board have been covered.
- The player with the greater number of game markers on the Game Board wins.

Toss	Sum
1	$\frac{1}{2}$
2	$\frac{1}{3}$
3	$\frac{1}{4}$
4	$\frac{1}{5}$
5	$\frac{1}{6}$
6	$\frac{1}{6}$

Check Understanding

Use twelfths to write three different addition expressions that equal $\frac{1}{2}$.

Student-Led Small Groups:

Leveled Math Center Activities are collaborative games to reinforce concepts and skills.

Enrichment Activity

Line Slide

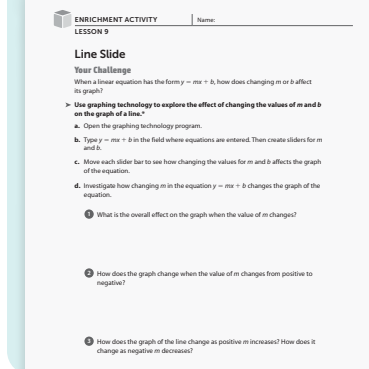
Your Challenge

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?

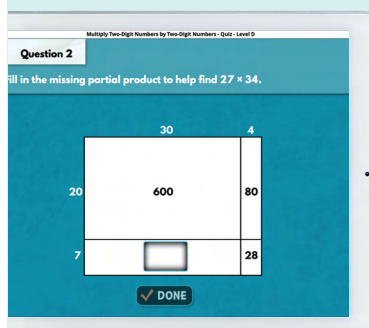
Extension:

Enrichment Activities challenge students with higher-order thinking tasks.



Independent Reinforcement:

Learning Games offer fun, challenging, and personalized practice and help students develop a growth mindset.



Personalized Instruction:

These digital lessons are tailored to meet individual student needs and are designed to accelerate growth and grade-level learning.



Embrace Students as Individuals

Allow students to explore the world through the lens of mathematics. *i-Ready Classroom Mathematics, Oregon Edition* incorporates features of the UDL to ensure that instruction is flexible, equitable, and accessible to all students.

Celebrate and Inspire

STEM Stories spotlight the lives and STEM contributions of people with diverse backgrounds and provide a real-life instance of mathematical practices in action.

STEM stories

Spotlight On...

Argelia Velez-Rodriguez

Argelia Velez-Rodriguez led a National Science Foundation program that helps students succeed in math and science.

Argelia Velez-Rodriguez was born in 1936 in Cuba. Even when she was very young, she loved solving math problems.

When Argelia was 9 years old, she won a class math contest on fractions.

Argelia kept studying math in college. She liked it so much that she earned a Ph.D., the highest degree possible. She was the first Black woman to earn a Ph.D. at her university.

When a new leader took over Cuba, Argelia worried her children might not get the same chances at school she had. They moved to the United States.

Argelia got a job teaching math at Bishop College. She became the leader of the math department.

I want all students to succeed!

Argelia was sometimes treated unfairly because she was a Black woman. She saw the same unfairness in some of her students' lives. She wanted all students to have a right to a good education.

Because of Argelia, many students today study math and science and hope to get jobs in these fields.

The National Science Foundation asked her to lead its program to help all students get the same chances at school. The program also helped them get jobs in math and science.

Math Practice 3 Connection

As the leader of the math department at Bishop College, Argelia had to make her ideas heard. She also had to listen to other people's ideas. When she led the National Science Foundation program, she had to get other leaders to listen to her ideas so she could help students.

Reflection Questions

- 1 Argelia was a leader. What would you like to be the leader of?
- 2 Argelia had to make her ideas clear to others. How do you explain ideas to others?

585st

586ST

Real-World Connections

STEM-focused connections show how mathematics is used in everyday life.

REAL-WORLD CONNECTION

Construction site managers direct other workers on a project about what needs to be done. There can be multiple crews of people working at the same time, such as plumbers and electricians. The manager may need to add to know how many people are working each day. They also make sure that all the crews are safe. Everyone working needs to wear the right safety equipment on the job site. Usually this includes a hard hat and safety glasses. Other types of safety equipment, such as yellow vests, may be needed on road construction projects. The construction site manager may need to add to find the total number of each kind of safety equipment. Ask students to think of other real-world examples when adding two-digit numbers might be useful.



Create a Community of Interconnected Learners

Supports for Community: Try–Discuss–Connect incorporates UDL principles to give every student a voice and the opportunity to engage with the content in a way that is meaningful to them.



Try It

Action and Expression:

Students make sense of the problem in a way that engages their identity and honors their prior experience, community, and individuality.



Discuss It

Representation:

Partner and whole class discussion place value on students' ideas and contributions.



Connect It

Engagement:

Students make connections to strategies, the underlying mathematics, and each others' thinking and ideas.

Connect to Culture

- Use these activities to connect with and leverage the diverse backgrounds and experiences of all students. Engage students in sharing what they know about contexts before you add the information given here.

Session 2 Use with Apply It problem 9.

A Tsikuri (see KOO ree) is made by weaving string or yarn across two crossed sticks. The design originated with the Huichol (wee CHOHL) peoples in northwestern Mexico and symbolizes *the power to see and understand things unknown*. The four points represent earth, air, fire, and water. Ask students if they have ever made or seen a Tsikuri.

Session 3 Use with Try It.

Pho (fuh) is a popular Vietnamese soup that dates back over 100 years. Today, it is considered to be the national dish of Vietnam. Although there are many variations, pho has a tasty broth, rice noodles, and meat,

tofu, or chicken. It can be served with lime and ginger or it may include a variety of spices, bean sprouts, or herbs. Ask students to describe some of their favorite soups and what makes them so delicious.

Session 5 Use with Apply It problem 5.

Explain to students that a Spanish tortilla is different than a corn or flour tortilla. It is a dish, popular in Spain, made with eggs and potatoes. There are many versions of similar egg dishes throughout the world, including frittatas from Italy, omelettes from France, and kuku sabzi from Iran. Have students share some of their favorite egg dishes.

Protocols for Engagement	Where in Lesson	Validates
Shout Out Students shout out one-word (or very short) answers at the same time.	Session 1 Discuss It: Facilitate Whole Class Discussion	conversational overlap, spontaneity, verbal expressiveness, multiple ways to show focus
Teacher Read Teacher reads aloud while students follow along.	Session 2 Try It: Make Sense of the Problem	oral, storytelling traditions
Quick Write/Quick Draw Students individually make notes or sketches before beginning a partner or whole-class discussion.	Session 4 Discuss It: Support Partner Discussion	individualism

Draw on Students' Cultural and Linguistic Background and Behaviors

Every lesson includes background information, cultural connections, and instructional protocols to engage students while affirming and validating their identities.






Integrate Language and Mathematics

Math class is the perfect place for multilingual learners to develop academic language while also building content knowledge. *i-Ready Classroom Mathematics, Oregon Edition* includes the resources to support both of these goals as students engage in reading, writing, speaking, and listening.

Increase Student Engagement

Supports for Language Development: Try–Discuss–Connect incorporates language routines to increase class participation and support students as they learn content, apply mathematical practices, and develop language.

 Try It	 Discuss It	 Connect It
Language Routines <ul style="list-style-type: none"> • Three Reads • Co-Craft Questions • Notice and Wonder • Say It Another Way Teacher Moves <ul style="list-style-type: none"> • Turn and Talk • Individual Think Time 	Language Routines <ul style="list-style-type: none"> • Compare and Connect • Collect and Display Teacher Moves <ul style="list-style-type: none"> • Turn and Talk • Individual Think Time • Four Rs Conversation Tips	Language Routines <ul style="list-style-type: none"> • Collect and Display • Compare and Connect Teacher Moves <ul style="list-style-type: none"> • Turn and Talk • Individual Think Time • Four Rs

Differentiation for English Learners

Scaffolds for each session suggest ways to help English Learners access and engage with rigorous mathematics.

DIFFERENTIATION | ENGLISH LEARNERS

Use with Session 1 Model It

Levels 1–3: Reading/Speaking

Help students read exponents comfortably and accurately in Model It problems 3 and 4. Tell students that mathematicians read exponents using the phrase *to the power of*. Model an example. Write a few powers of 10 on the board and read them chorally as a class using the sentence frame:

- *Ten to the power of ____.*

Then have students take turns accurately reading the exponents in Model It problems 3 and 4 as they discuss and compare their answers. Provide the sentence frame:

- *Three times ____ to the power of ____.*

Circulate and listen for precise reading of exponents. Reword student responses as needed.

Levels 2–4: Reading/Speaking

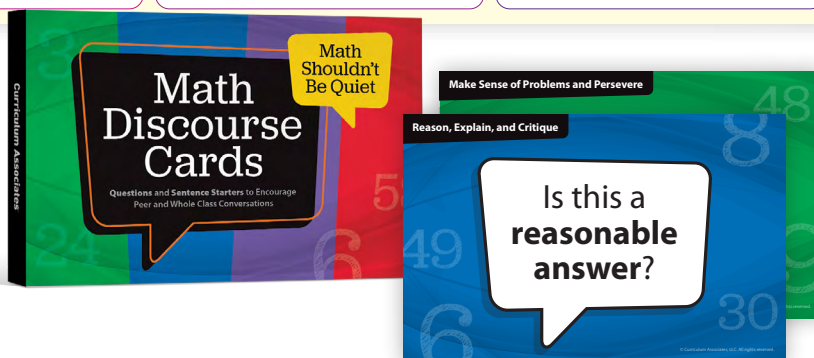
Help students read exponents comfortably and accurately in Model It problems 3 and 4. Tell students that mathematicians read exponents using the phrase *to the power of*. Model an example. Invite partners to take turns practicing writing and saying powers of 10. Have one partner say a power of ten and then the other partner writes it down. Switch roles and repeat a few more times. Next, invite students to discuss their answers to Model It problems 3 and 4, reading exponents accurately and using other precise math vocabulary, such as *exponent* and *base*. Circulate and listen for precise reading of exponents. Reword student responses as needed.

Levels 3–5: Reading/Speaking

Help students read exponents comfortably and accurately in Model It problems 3 and 4. Tell students that mathematicians read exponents using the phrase *to the power of*. Make a sketch of a square and a cube. Explain that 10^2 and 10^3 can also be read as *ten squared* and *ten cubed*, respectively. Ask partners to discuss why that way of reading the exponents makes sense. Then have partners take turns writing and saying powers of 10. One partner can say a power of ten and the other partner can write it. Switch roles and repeat a few more times. As students discuss their answers to Model It problems 3 and 4, circulate and support precise reading of exponents and math vocabulary as needed.

Additional Language and Discourse Supports

Resources like the Discourse Cards and Multilingual Glossaries help students talk through their ideas using academic language.



Teach Academic Language

Academic Vocabulary Activities and Routine

Engage students in rigorous mathematics and encourage effective communication.

UNIT 2

Build Your Vocabulary

Math Vocabulary

Complete the blank boxes with the corresponding vocabulary terms.

4, 5

6 5

8 2

Write the number above in expanded form.

Write the word form of the number.

Academic Vocabulary

Place a check next to the academic words you know. Then use the words to complete the sentences.

☐ approximate
 ☐ partially completed
 ☐ previous
 ☐ relative

- When you don't need an exact answer, an _____ answer is enough.
- Sometimes it is important to finish what you start, rather than leaving a task _____.
- In STEM classes, you can examine the _____ between science, technology, engineering, and math.
- In a _____ grade, you learned how to add whole numbers.

Academic Vocabulary Routine

Use with *Build Your Vocabulary*.

1 Assess prior knowledge.

- Assess prior knowledge by asking students to place a check mark next to any vocabulary words they know or are familiar with.
- Have students work in pairs to briefly discuss how and when they have used the words. Listen to assess if perceived knowledge is correct.
- If you have Spanish speakers or speakers of other Latin-based languages, use the *Cognate Support* routine.

2 Pronounce the words.

- Review the *Academic Vocabulary*.
- Say each of the words aloud and then have students repeat to ensure correct pronunciation.

3 Define the words.

- Call on volunteer pairs to provide meanings of the words they know.
- Note which word(s) need more direct instruction and modeling.
- Model the usage of the word(s) in context, using topics that connect with students in a meaningful way.
- Provide the meaning of the word(s). See *Academic Vocabulary Glossary* on the *Oregon Teacher Toolbox*.

4 Use the words.

- Have students write the word(s), their own descriptions or examples, and a picture, symbol, or graphic representation in their math journal.
- Review the activity as a whole class and remediate where needed.

Support at the Word, Sentence, and Discourse Levels

Prompts help students ask and answer questions, express ideas, and unpack complex sentences.

DEVELOP ACADEMIC LANGUAGE

WHY? Support students as they justify their strategies using pictures or models.

HOW? Prompt students to use definitions, diagrams, models, and what they already know as they justify their strategies and solutions. During whole class discussion, ask: *Where do you see that in the diagram or model?* Encourage students to point and refer to specific parts of their diagrams and place value charts in order to justify their answers during Discuss It.

LESSON 7 | SESSION 2

Develop

Purpose

- Develop the idea that there are patterns in the placement of the decimal point when multiplying and dividing by powers of 10.
- Understand how to find the value of a multiplication or division expression involving a power of 10.

START | CONNECT TO PRIOR KNOWLEDGE

Which One Doesn't Belong?

10²

10⁻¹

10⁻²

Possible Solutions

A is the only one with an exponent.

B is the only one with a value of 30.

C is the only one written as a product of tens.

WHY? Support students' understanding of powers of 10.

DEVELOP ACADEMIC LANGUAGE

WHY? Support students as they justify their strategies using pictures or models.

HOW? Prompt students to use definitions, diagrams, models, and what they already know as they justify their strategies and solutions. During whole-class discussion, ask: *Where do you see that in the diagram or model?* Encourage students to point and refer to specific parts of their diagrams and place value charts in order to justify their answers during Discuss It.

MODEL IT

1-2 As students complete the problems, have them identify that they are being asked to look for and use patterns in the placement of the decimal point when multiplying and dividing by powers of 10.

Common Misconception: If students write $0.5 \times 100 = 0.500$ by inserting zeros without changing the placement of the decimal point, then have them write the original number and then answer as fractions to see that the value did not change ($\frac{1}{2} = \frac{500}{1,000}$).

LESSON 7 | SESSION 2

Develop Understanding of Powers of 10

MODEL IT: DECIMAL POINT PATTERNS

Try these two problems.

1 The diagrams below show patterns in the placement of the decimal point each time you multiply or divide a decimal by 10. Complete the missing numbers in each diagram. The decimal point for each missing number is already written for you.

$1.10 \times 10 = 11.0$
 $1.10 \times 100 = 110$
 $1.10 \times 1,000 = 1,100$
 $1.10 \times 10,000 = 11,000$
 $1.10 \times 100,000 = 110,000$
 $1.10 \times 1,000,000 = 1,100,000$

$11.0 \div 10 = 1.10$
 $110 \div 10 = 11.0$
 $1,100 \div 10 = 110$
 $11,000 \div 10 = 1,100$
 $110,000 \div 10 = 11,000$
 $1,100,000 \div 10 = 110,000$

2 Use the decimal point patterns diagrams above to help you find each product or quotient.

$0.5 \times 100 = 50$
 $0.5 \times 10^2 = 50$
 $5 \times 100 = 500$
 $5 \times 10^2 = 500$

$0.27 \times 1,000 = 270$
 $0.27 \times 10^3 = 270$
 $2,700 \div 100 = 27$
 $2,700 \div 10^2 = 27$

DISCUSS IT

What happens to the value of a number when you multiply or divide by a power of 10? How is the placement of the decimal point helpful when you multiply or divide by 10?

SUPPORT PARTNER DISCUSSION

Encourage students to look for the pattern in the placement of the decimal point. Support as needed with questions such as:

- Did you use the diagrams to help you find the products and quotients?
- How did the values of the digits 5, 2, and 7 change as you multiplied and divided?

FACILITATE WHOLE CLASS DISCUSSION

For each problem, have volunteers share complete tables and equations. Ask students to refer to their tables and equations to justify their solutions.

ASK: How is multiplying by a power of 10 similar to dividing by the same power of 10? How is it different?

LISTEN FOR: The number of places the digits move is equal to the exponent of the power of 10, whether you multiply or divide. They move to the left when multiplying and to the right when dividing.



Cultivate a Mindset for Learning

Create a community of interconnected learners. By developing the whole child, encouraging collaboration, and making time to reflect on their thinking, students not only become good mathematicians, but they also develop important life skills.

UNIT 3 More Decimals and Fractions

Unit Themes

This unit introduces students to multiplication and division of decimals and fractions. Students preview the skills they will be learning in this unit and assess what they know and do not know about them. Students record their progress after completing each lesson and reflect on their learning at the end of the unit.

The major themes of this unit are:

- You can use what you know about multiplying whole numbers to help you multiply decimals and fractions.
- You can think of fractions as division expressions where the numerator is divided by the denominator.
- Reasoning about the size of the factors helps you reason about the size of a product: how does a factor greater or less than 1 affect a product?
- You can use relationships between multiplication and division to help you divide whole numbers by unit fractions and unit fractions by whole numbers.

SELF CHECK

- Take a few minutes to have each student independently read through the list of skills. Ask students to consider each skill and check the box if it is a skill they think they already have.
- Remind students that these skills are likely to all be new to them and that over time, they will be able to check off more and more skills.

Facilitate Whole Class Discussion

Engage students in a discussion about the skills with questions such as:

- Which skills seem related to something you already know?
- Which skills do you think you would use in your everyday life? Why?

Support Positive Learning Habits

At the beginning of the unit, share the individual and social responsibility goal **Make Connections**. At the end of the unit, support growth mindset by having students discuss the prompts and review the skills on the **Self Reflection** page.

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UNIT 3 More Decimals and Fractions

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UNIT 3
More Decimals and Fractions
Multiplication and Division

SELF CHECK
Before starting this unit, check off the skills you know before. As you complete each lesson, use how many more skills you can check off!

I can ...	Before	After
Multiply decimals, for example: $7.25 \times 9.4 = 68.15$.	<input type="checkbox"/>	<input type="checkbox"/>
Divide decimals, for example: $1.2 \div 0.6 = 2$.	<input type="checkbox"/>	<input type="checkbox"/>
Understand fractions as division, for example: $\frac{3}{4} = 3 \div 4$.	<input type="checkbox"/>	<input type="checkbox"/>
Multiply fractions, for example: $\frac{2}{3} \times \frac{5}{6} = \frac{10}{18}$ or $\frac{5}{9}$.	<input type="checkbox"/>	<input type="checkbox"/>
Find the area of a rectangle with fractional side lengths by tiling and by multiplying.	<input type="checkbox"/>	<input type="checkbox"/>
Understand multiplication as scaling.	<input type="checkbox"/>	<input type="checkbox"/>
Multiply fractions and divide with unit fractions in word problems.	<input type="checkbox"/>	<input type="checkbox"/>
Divide with unit fractions, for example: $4 \div \frac{1}{7} = 28$.	<input type="checkbox"/>	<input type="checkbox"/>
Agree or disagree with ideas in discussions about multiplying and dividing with decimals and fractions and explain why.	<input type="checkbox"/>	<input type="checkbox"/>

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Unit Skills	Lesson
Multiply decimals, for example: $7.25 \times 9.4 = 68.15$.	15, 16
Divide decimals, for example: $1.2 \div 0.6 = 2$.	17
Understand fractions as division, for example: $\frac{3}{4} = 3 \div 4$.	18
Multiply fractions, for example: $\frac{2}{3} \times \frac{5}{6} = \frac{10}{18}$ or $\frac{5}{9}$.	19
Find the area of a rectangle with fractional side lengths by tiling and by multiplying.	
Understand multiplication as scaling.	
Multiply fractions and divide with unit fractions in word problems.	
Divide with unit fractions, for example: $4 \div \frac{1}{7} = 28$.	
Agree or disagree with ideas in discussions about multiplying and dividing with decimals and fractions and explain why.	

Support Student Agency

Self Check

Let students check off skills they already know before starting a unit, and then reflect on their progress at the end of a unit.

UNIT 3 Self Reflection

Support Positive Learning Habits

Growth Mindset

Have students review the skills on the **Self Reflection** page and work in pairs to respond to the prompts. Encourage students to revisit the work they did in each lesson in order to help develop growth mindset.

- Remind students that this is the same list of skills that they saw on the Student Worktext **Self Check** page at the beginning of the unit.
- Tell them that revisiting the list is an opportunity for them to reflect on their learning and progress during the unit.
- Have students read through the list independently and then work in pairs to respond to the prompts. Encourage students to revisit the work they did in each lesson as they think about how to respond to the prompts.
- Discuss students' responses to the prompts as a class if time permits. Tell students that they will build on these skills in later lessons during the year and/or in other grade levels.

Individual and Social Responsibility

ASK You have learned a lot about multiplying and dividing with fractions and decimals. How can you connect that new math learning to what you already know?

LISTEN FOR Students may describe connecting multiplication and division with fractions and decimals to prior learning related to place value, fractions, and rules and strategies that apply to the operations of multiplication and division.

ASK How did other students' ideas help you with new math learning?

LISTEN FOR Students may describe learning a new strategy from a classmate or understanding something better after a classmate explained it.

UNIT 3 Self Reflection

In this unit you learned to ...

Skill	Lesson
Multiply decimals, for example: $7.25 \times 9.4 = 68.15$.	15, 16
Divide decimals, for example: $1.2 \div 0.6 = 2$.	17
Understand fractions as division, for example: $\frac{3}{4} = 3 \div 4$.	18
Multiply fractions, for example: $\frac{2}{3} \times \frac{5}{6} = \frac{10}{18}$ or $\frac{5}{9}$.	19
Find the area of a rectangle with fractional side lengths by tiling and by multiplying.	20
Understand multiplication as scaling.	21
Multiply fractions and divide with unit fractions in word problems.	22, 24
Divide with unit fractions, for example: $4 \div \frac{1}{7} = 28$.	23, 24
Agree or disagree with ideas in discussions about multiplying and dividing with decimals and fractions and explain why.	15-24

Think about what you have learned.

Use words, numbers, and drawings.

- I am proud that I can ...
- I worked hardest to learn how to ...
- One thing I am still confused about is ...



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Support Positive Learning Habits

Embedded support helps teachers promote and maintain healthy learning environments.

Encourage Individual and Social Responsibility

Students reflect on their understanding and develop self-awareness, self-management, social awareness, relationship skills, and responsible decision making.

Develop Persistent Problem Solvers

Supports for Growth Mindset: The Try–Discuss–Connect framework provides a structure to help students embrace challenge, collaborate with others, and reflect on what they have learned.



Try It

Students persevere through a novel problem independently.



Discuss It

Students share their thinking and learn how to agree or disagree respectfully.



Connect It

Students evaluate methods and consider the merits of different solution strategies.



Promote Self-Management

Learning Games give students immediate feedback they can use to test strategies. After completing a level, students can choose whether the next round is harder or not, giving them agency over their learning.



Get What You Need, When You Need It

Whether you're a 30-year veteran refining your craft or a first-year teacher exploring your new profession, our time-saving resources and support enable you to build your expertise. Choose from our wealth of resources to get what you need, when you need it.

Support That Works for You

An abundance of resources and support are available to meet the unique needs of each teacher.

Plan Lessons with Ease

Lesson Overview pages cover everything you need to quickly and effectively plan instruction.

LESSON 20

Overview | Add and Subtract Fractions

MATH FOCUS

Oregon Mathematics Standard

4.NF.B.3 Understand a fraction $\frac{a}{b}$ as the sum of a fractions of the same denominator ($\frac{1}{b}$). Solve problems in authentic contexts involving addition and subtraction of fractions referring to the same whole and having like denominators.

STANDARDS FOR MATHEMATICAL PRACTICE (SMP)

SMP 1, 2, 3, 4, 5, and 6 are integrated into the Try-Discuss-Connect framework.* This lesson provides additional support for:

- Reason abstractly and quantitatively.
- Model with mathematics.
- Look for and make use of structure.

* See page 411a to learn how every lesson includes these SMP.

Objectives

Content Objectives

- Add fractions with like denominators.
- Subtract fractions with like denominators.
- Decompose fractions as a sum of fractions with the same denominators in more than one way.
- Use fraction models, number lines, and equations to represent word problems.

Language Objectives

- Explain in writing how knowing about equal parts helps to add and subtract fractions.
- Justify multiple ways to decompose a fraction as a sum of fractions.
- Connect representations of fractions to word problems in partner discussion.
- Use drawings and/or models to explain reasoning when disagreeing with an idea.

Prior Knowledge

- Understand addition as joining parts.
- Understand subtraction as separating parts.
- Know addition and subtraction basic facts.
- Understand the meaning of fractions.
- Identify numerators and denominators.
- Write whole numbers as fractions.
- Compose and decompose fractions.

Vocabulary

Math Vocabulary

There is no new vocabulary. Review the following key terms.

decompose to break into parts. You can break apart numbers and shapes.

denominator the number below the line in a fraction that tells the number of equal parts in the whole.

fraction a number that names equal parts of a whole. A fraction names a point on the number line.

numerator the number above the line in a fraction that tells the number of equal parts that are being described.

unit fraction a fraction with a numerator of 1. Other fractions are built from unit fractions.

Academic Vocabulary

altogether in all.

rest the part that is left over.

Pacing Guide

Items marked with are available on the Teacher Toolkit.

SESSION	Explore Adding and Subtracting Fractions (35-50 min)	MATERIALS	DIFFERENTIATION
SESSION 1	<ul style="list-style-type: none"> Start (5 min) Try It (5-10 min) Discuss It (10-15 min) Connect It (10-15 min) Close: Exit Ticket (5 min) <p>Additional Practice (pages 415-416)</p>	<p>Math Toolkit: counters, fraction bars, fraction circles, fraction models, fraction tiles, number lines</p> <p>Presentation Slides</p>	<p>PREPARE Interactive Tutorial</p> <p>RETEACH or REINFORCE Hands-On Activity</p> <p>Materials For each student: scissors, ruler, heavy paper or card stock</p>
SESSION 2	<ul style="list-style-type: none"> Start (5 min) Try It (10-15 min) Discuss It (10-15 min) Connect It (10-15 min) Close: Exit Ticket (5 min) <p>Additional Practice (pages 421-422)</p>	<p>Math Toolkit: fraction bars, fraction circles, fraction models, fraction tiles, index cards, number lines</p> <p>Presentation Slides</p>	<p>RETEACH or REINFORCE Hands-On Activity</p> <p>Materials For each student: Activity Sheet, Fraction Bars</p> <p>REINFORCE Fluency & Skills Practice</p> <p>EXTEND Deepen Understanding</p>
SESSION 3	<ul style="list-style-type: none"> Start (5 min) Try It (10-15 min) Discuss It (10-15 min) Connect It (10-15 min) Close: Exit Ticket (5 min) <p>Additional Practice (pages 427-428)</p>	<p>Math Toolkit: fraction bars, fraction circles, fraction models, fraction tiles, index cards, number lines</p> <p>Presentation Slides</p>	<p>RETEACH or REINFORCE Hands-On Activity</p> <p>Materials For each student: paper plates, markers, scissors</p> <p>REINFORCE Fluency & Skills Practice</p> <p>EXTEND Deepen Understanding</p>
SESSION 4	<ul style="list-style-type: none"> Start (5 min) Try It (10-15 min) Discuss It (10-15 min) Connect It (10-15 min) Close: Exit Ticket (5 min) <p>Additional Practice (pages 433-434)</p>	<p>Math Toolkit: counters, fraction bars, fraction circles, fraction models, fraction tiles, number lines</p> <p>Presentation Slides</p>	<p>RETEACH or REINFORCE Hands-On Activity</p> <p>Materials For each pair: 1 set of fraction tiles or fraction circles</p> <p>REINFORCE Fluency & Skills Practice</p> <p>EXTEND Deepen Understanding (Model It)</p> <p>Deepen Understanding (Connect It)</p>
SESSION 5	<ul style="list-style-type: none"> Start (5 min) Monitor & Guide (15-30 min) Group & Differentiate (20-30 min) Close: Exit Ticket (5 min) 	<p>Math Toolkit: Have items from previous sessions available for students.</p> <p>Presentation Slides</p>	<p>RETEACH Hands-On Activity</p> <p>Materials markers, Activity Sheet, Fraction Bars</p> <p>REINFORCE Problems 4-8</p> <p>EXTEND Challenge</p> <p>Ready Personalized instruction</p>

Lesson 20 Quiz or Digital Comprehension Check

RETEACH Tools for Instruction

REINFORCE Math Center Activity

EXTEND Enrichment Activity

Learning Progression

In the previous lesson students began developing an understanding of adding and subtracting fractions with like denominators. They developed an understanding of adding fractions as combining parts referring to the same whole.

This lesson extends students' understanding of fraction addition and subtraction. Here students begin to deal with addition and subtraction in the abstract. They learn to decompose fractions as a sum of fractions with the same denominators in more than one way. Students use visual models to represent word problems involving the addition and subtraction of fractions with the same whole. Students also use equations to solve word problems.

In the next lesson students will add and subtract mixed numbers with like denominators. The focus in Grade 4 is on adding and subtracting fractions with like denominators. In Grade 5, students begin to add and subtract fractions with unlike denominators.

Embedded Support

Strategies, prompts, and in-the-moment guidance are available in the Oregon Teacher's Guide.

Common Misconception Look for students who accurately model the problem but have difficulty identifying what constitutes one equal share from all the equal parts represented. As students present solutions, ask them to identify Jade's share in the model.

Select and Sequence Student Strategies

One possible order for whole class discussion:

- physical parts showing tenths
- drawings representing tenths
- whole-number solutions showing that 7 out of 10 parts are painted ($\frac{7}{10}$)
- number lines marked in tenths

Facilitate Whole Class Discussion

4 — 5 Have students think about modeling the way of dividing up the work described in problem 4. Guide them to connect writing the quotient with a remainder and as a mixed number.

ASK How would you change the fraction model in Picture It to show this way of dividing up the work? What would a number line model of this way look like?

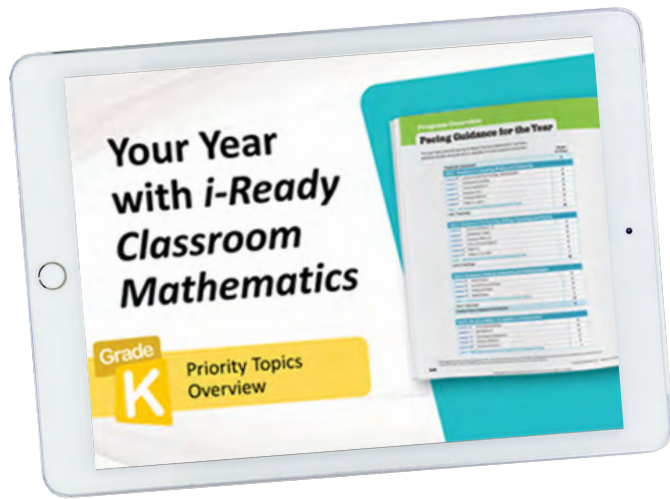
LISTEN FOR In Picture It, each of the first three rectangles would be labeled with a single letter, J, M, and H. On a number line, you could label from 0 to 1 with J, from 1 to 2 with M, and from 2 to 3 with H. For the other two sections, label $\frac{1}{3}$ of each section with J, $\frac{1}{3}$ with M, and $\frac{1}{3}$ with H.

Professional Learning That Empowers

Teacher support designed to enhance the art and science of teaching mathematics

Math Background

See how the models and strategies used in the unit fit into the learning progression.



Pacing Video Series

Stay on track to deliver all grade-level content by the end of the year.

Implementation Guidance and More

From how-to tips to planning tools, get on-demand access to everything teachers need on i-ReadyCentral.com/Classroom-Math.

UNIT 3
Math Background

Dividing Whole Numbers

Insights on: Modeling Division

- ✓ One way to divide is to make equal groups. When working with larger dividends, it helps to use base-ten blocks.
- ✓ Another way to divide is to use an area model in which students take out equal-size groups. Students have experience with using this model and should make the connection between multiplication and division.
- ✓ When students use the area model, observe the size of the parts they are removing each time. As they gain confidence, encourage students to use what they know about multiplying by tens to help them choose larger groups. Thinking about powers of ten will help students remove larger groups and make the division more efficient. Example: If a student knows that $3 \times 4 = 12$, then they also know that $3 \times 40 = 120$.

Model division with base-ten blocks making equal groups of ...

$$78 \div 3 = 26$$

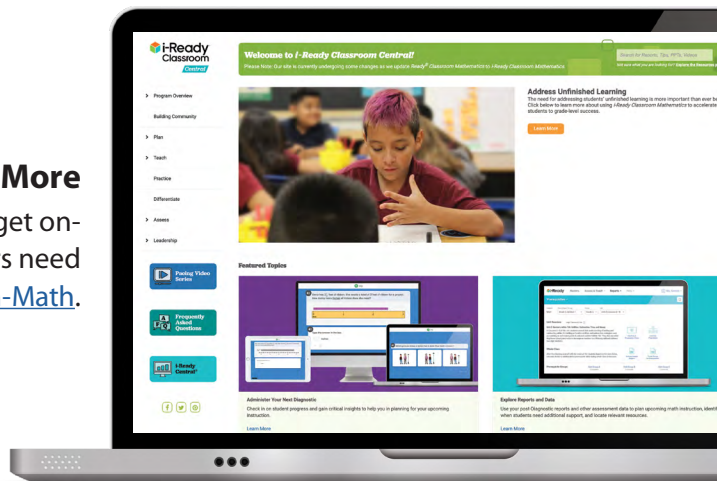
26 in each group

... an area model to show "taking out" partial quotients.

$$136 \div 4 = 34$$

Part 1	Part 2	Part 3	Part 4
10	10	10	4
$(4 \times 10 = 40)$	$(4 \times 10 = 40)$	$(4 \times 10 = 40)$	$(4 \times 1 = 4)$
$\begin{array}{r} 136 \\ - 40 \\ \hline 96 \end{array}$	$\begin{array}{r} 96 \\ - 40 \\ \hline 56 \end{array}$	$\begin{array}{r} 56 \\ - 40 \\ \hline 16 \end{array}$	$\begin{array}{r} 16 \\ - 16 \\ \hline 0 \end{array}$

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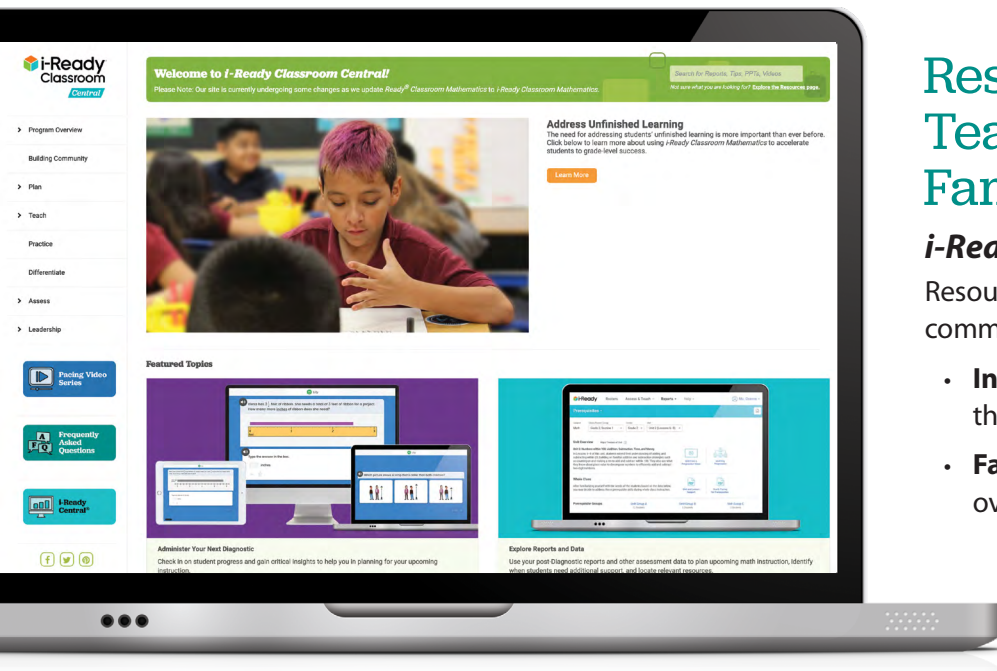
Onsite, Online, and On-Demand Professional Development (PD)

Our ongoing, classroom-focused PD supports teachers in using students' thinking and mathematical practices to transform mathematics classrooms.



Bring Classrooms and Communities Together

Extend learning beyond the classroom. *i-Ready Classroom Mathematics, Oregon Edition* has a wealth of resources families can use at home to support their students' mathematical growth.

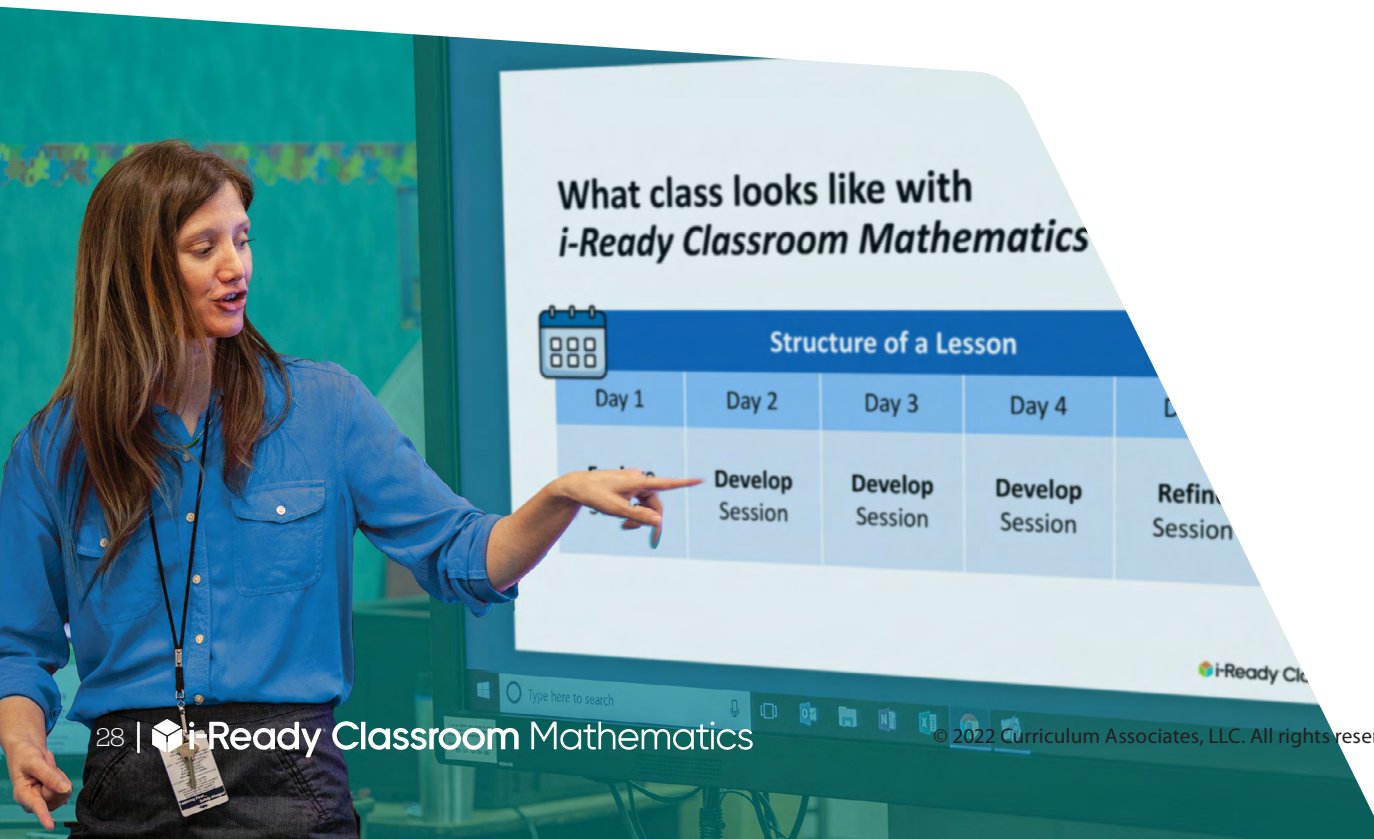


Resources to Help Teachers Engage Families

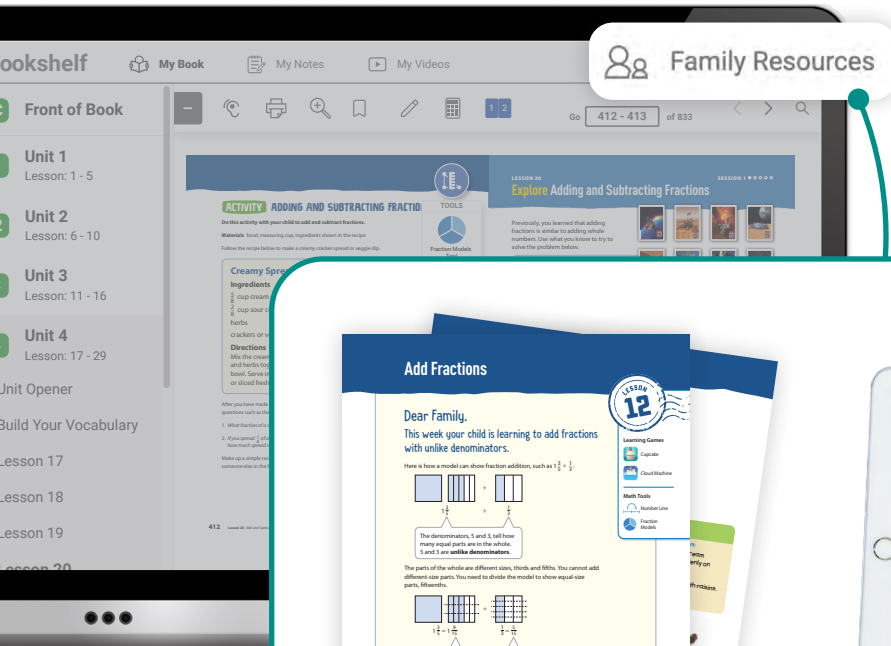
i-Ready Classroom Central

Resources for teachers to use to make family communication easier, including:

- **Introduction Letter:** Introduce families to the curriculum.
- **Family Night Presentation:** Give families an overview of the program.

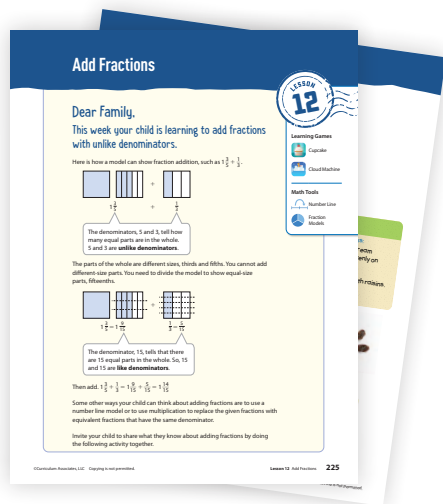


Resources for Families

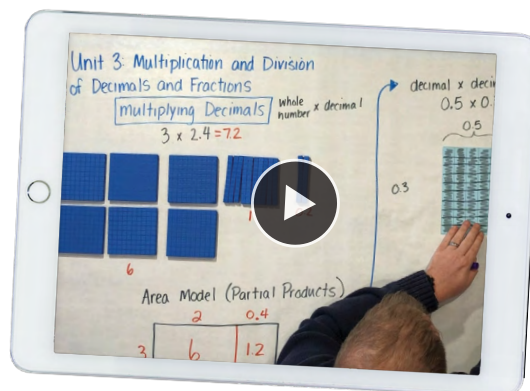


Resources Families Can Use to Understand Math Ideas

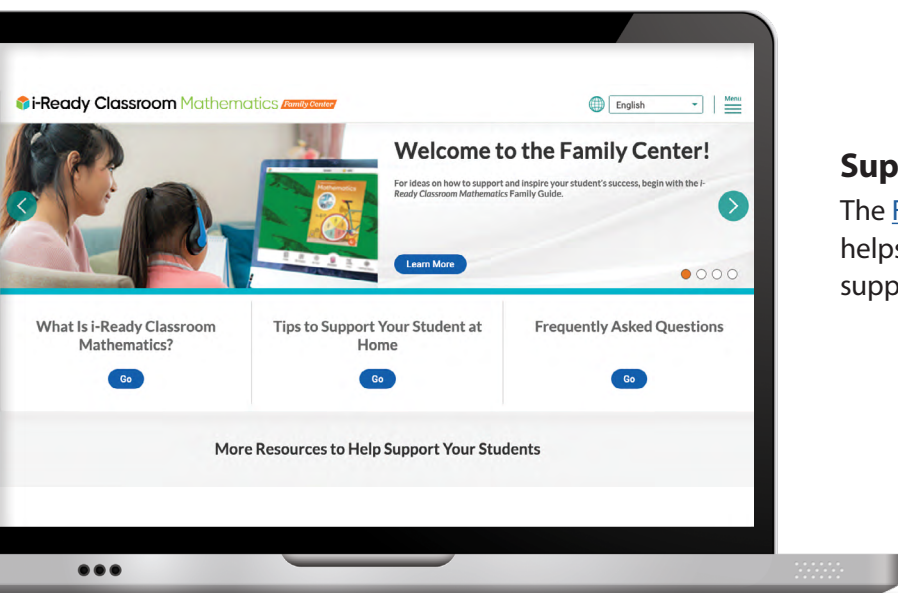
The Student Bookshelf provides access to the Student Worktext in a digital format and other Family Resources.



Family Letters, available in 11 languages for every lesson, provide math background and an activity related to the lesson.



Unit Flow & Progression Videos help families support their student with the ideas and concepts taught in the curriculum. Closed captioning available in English and Spanish.



Support Website Dedicated to Families

The [Family Center](#), available in English and Spanish, helps families explore the program and provide support at home.



Need Help? We're Here for You!

No matter how big or small your school is, you have an *i-Ready* partner dedicated to your account. We're experts in our product, so if you have a question or a problem, we can give you the answer—so you can get back to your students.



*“i-Ready Classroom Mathematics, Oregon Edition resources **provide teachers with routines and structures that support the implementation of the effective teaching practices.** This allows students to build a deep understanding of mathematical concepts, and it creates a seamless connection that supports both students and teachers.”*

—Marsha Burkholder
Elementary Curriculum Specialist

*“Curriculum Associates . . . developed the tools and customer support systems that provide us with real-time information so we may **maximize the skillset of our staff to do what’s in the best interest of our students.**”*

—Josh Almeida
Curriculum, Data, and Assessment Manager for Mathematics





The Data Speaks for Itself

To help students thrive, teachers need high-quality instructional materials that make an impact. Our programs are designed, tested, and refined to maximize students' success. Don't take our word for it. Check out our proven results and top ratings from third parties.



*Ready Mathematics**

receives a **perfect score and an exemplary rating** during the Oregon instructional materials evaluation process.

2015



*Ready Mathematics**

was the **only program approved** for Grades K–8 by the Idaho State Department of Education's mathematics review.

2016



Louisiana rates *Ready Mathematics**, Grades K–5 as Tier 1, signifying that the program “**meets all nonnegotiable criteria and meets all required indicators of superior quality.**”

In 2019, *Ready Mathematics**, Grades 6–8 was also rated as Tier 1.

2017

2018

*Ready Mathematics**, Grades K–8 received all green ratings from EdReports.



**i-Ready Classroom Mathematics, Oregon Edition is the next evolution of Ready Mathematics.*

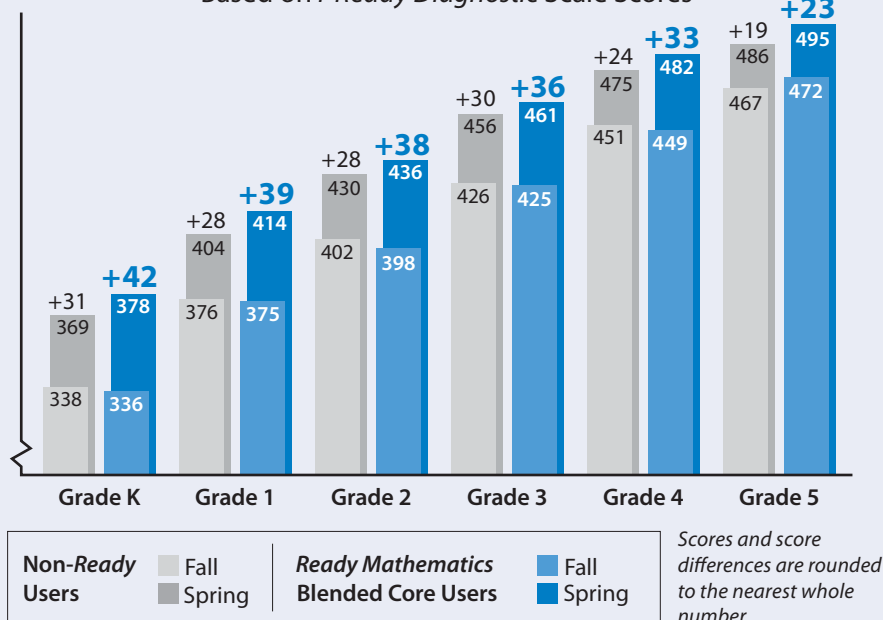
Third-party research conducted in three states, with 32 schools and 21,000 students, provides evidence of *Ready Mathematics** success.

Read the full report: CurriculumAssociates.com/Ready-Math-Blended-ESSA.

Because our program has been top rated from the beginning, **educators have had time to teach with and see real results from our blended instructional approach.**

Growth in Student Performance

Based on *i-Ready Diagnostic* Scale Scores



18

2019

2020

2021

i-Ready Classroom Mathematics, Grades K–8 received **all green ratings from EdReports**.

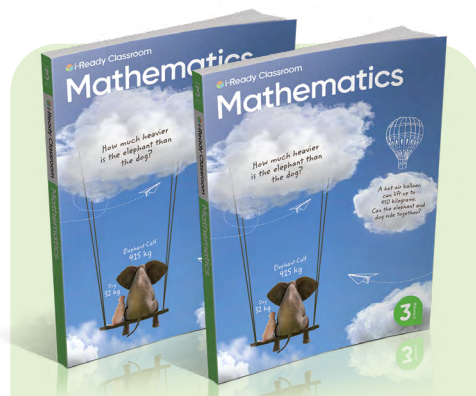


EdReports Ratings: *i-Ready Classroom Mathematics*, Grades K–8

Visit EdReports.org to see the full report.

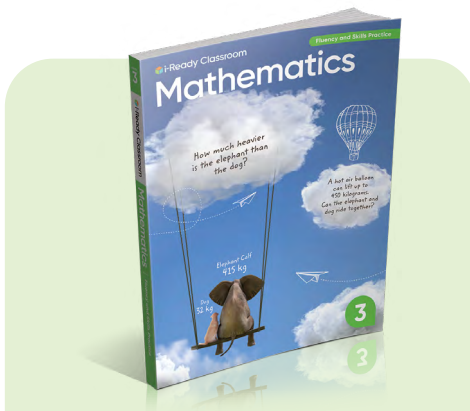
	K	1	2	3	4	5	6	7	8
Gateway 1: Focus & Coherence	14/14	14/14	14/14	14/14	14/14	14/14	14/14	14/14	14/14
Gateway 2: Rigor & Mathematical Practices	17/18	17/18	17/18	17/18	17/18	17/18	18/18	18/18	18/18
Gateway 3: Usability	38/38	38/38	38/38	38/38	38/38	38/38	24/27	24/27	24/27

Student Materials



Student Worktext ^{E/S}

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



Fluency and Skills Practice Book

Targeted fluency practice for every lesson. *Included on the Oregon Teacher Toolbox and available in print for additional purchase*



Hands-On Materials

Engage students in hands-on learning. Available at:

Hand2Mind.com/Curriculum-Associates

Student Digital Experience

The Student Digital Experience, accessible through i-ReadyConnect.com, provides access to all student components of *i-Ready Classroom Mathematics, Oregon Edition*.

Student Bookshelf provides online access to student resources, including:

- **Digital Student Worktext ^{E/S}** includes tools, such as note-taking, text-to-speech, highlighting, and a calculator.
- **Family Resources ^{E/S}** includes a Family Letter for every lesson and Unit Flow & Progression Videos.
- **Multilingual Glossary ^{E/S}** available in 11 languages
- **Student Handbook ^{E/S}** with a guide to the Standards for Mathematical Practice, a mathematical language reference tool, and 100 Mathematical Discourse Questions
- **Develop Session Video Library** offers instructional videos for remote learning, homework support, or reteaching concepts.

Digital Math Tools provide virtual representations of various models.

Interactive Learning Games ^{E/S} develop conceptual understanding, improve fluency, and build a positive relationship to challenge.

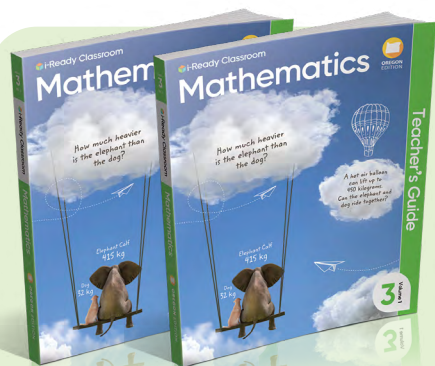
Interactive Practice ^{E/S} helps students build procedural fluency and skills by providing immediate, meaningful feedback.

i-Ready Personalized Instruction ^{E/S} designed to accelerate growth and grade-level learning



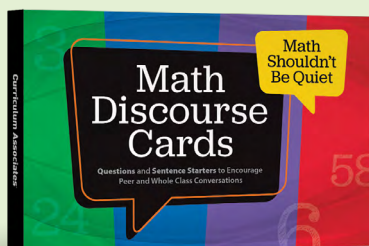
^{E/S} = Available in English and Spanish

Teacher Materials



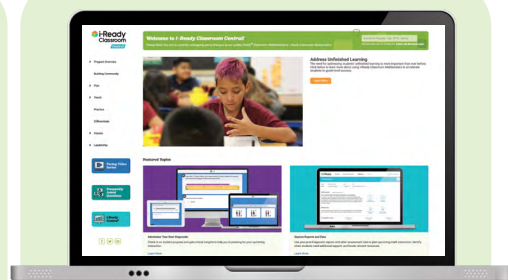
Oregon Teacher's Guide ^{E/S}

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



Discourse Cards ^{E/S}

This resource provides questions and sentence starters to get students talking about mathematics.
Available in print and online



i-Ready Classroom Central

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

Teacher Digital Experience

The Teacher Digital Experience, accessible through i-ReadyConnect.com, provides access to all teacher components of *i-Ready Classroom Mathematics, Oregon Edition*.

Oregon Teacher Toolbox

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

- **Oregon Enhancement Activities** ^{E/S}
- Interactive Tutorials ^{E/S}
- Digital Math Tools
- Lesson PowerPoint® Slides ^{E/S}
- Fluency and Skills Practice ^{E/S}
- Center Activities ^{E/S}
- Enrichment Activities ^{E/S}
- Assessment Resources ^{E/S}
- Unit Flow & Progression Videos*
- Literacy Connections ^{E/S}
- Grade Level Games (K–2) ^{E/S}
- Unit Games ^{E/S}
- Develop Session Video Library

Digital Practice Resources

- Learning Games ^{E/S}
- Interactive Practice ^{E/S}
- *i-Ready Personalized Instruction* ^{E/S}

Digital Assessments

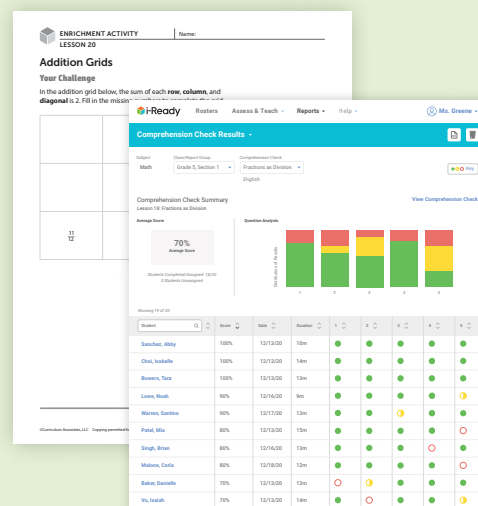
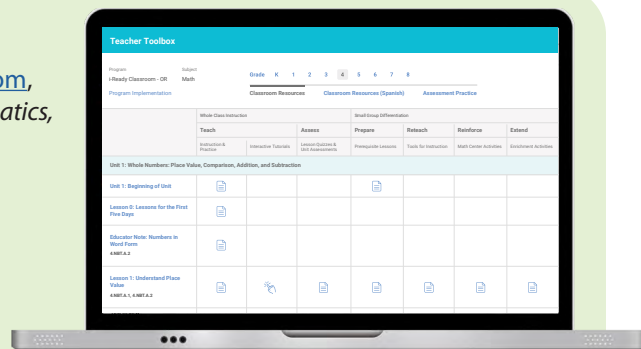
- Diagnostic ^{E/S}
- Comprehension Checks ^{E/S}

Reports

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

Professional Learning

- Online Educator Learning



*Closed captioned in English and Spanish

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Learn more at
[i-ReadyClassroomMathematics.com/24.](https://i-ReadyClassroomMathematics.com/24)

To see how other educators are maximizing their *i-Ready Classroom Mathematics, Oregon Edition* experience, follow us on social media!



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