i-Ready Classroom Mathematics

Providing Support in Building Thinking Classrooms

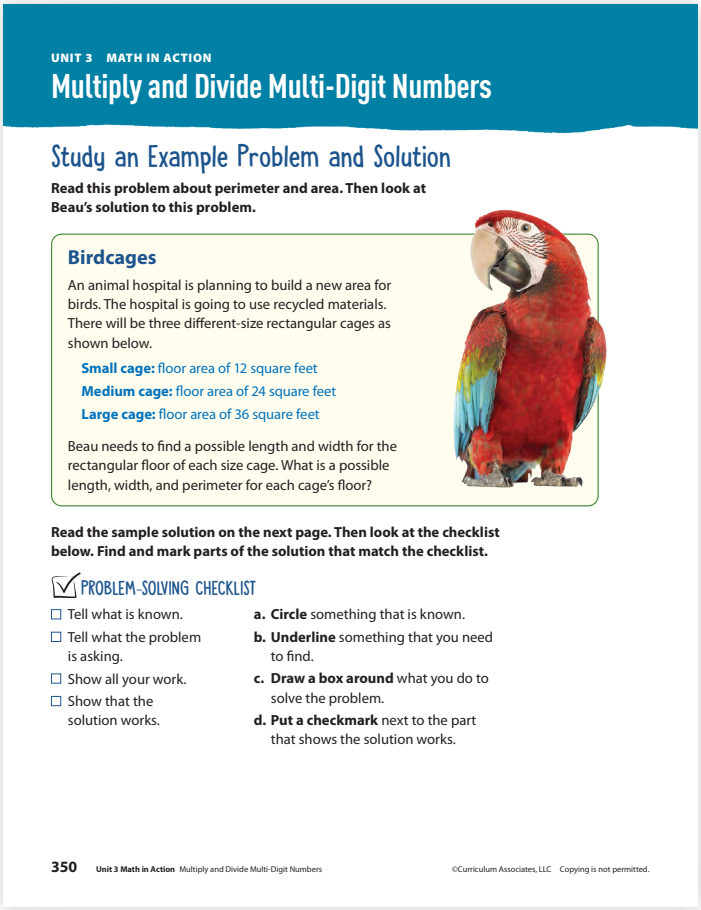
How *i-Ready Classroom Mathematics* Supports Building Thinking Classrooms

i-Ready Classroom Mathematics is designed to support teachers looking to align their instruction with the 14 key practices outlined by Peter Liljedahl in his book *Building Thinking Classrooms in Mathematics, Grades K–12*. Built into the program, teachers can seamlessly integrate these practices, enabling them to foster an environment in which students engage in deeper, more meaningful mathematical learning. This will help students think critically, collaborate effectively, and develop a strong foundation in mathematics.

Explore below how the 14 practices are woven throughout *i-Ready Classroom Mathematics*.

1 Thinking Tasks

Start problems, **Try It** problems, and **Math in Action** lessons are just a few of the rich thinking tasks available in *i-Ready Classroom Mathematics*.



UNIT 3 MATH IN ACTION

Multiply and Divide Multi-Digit Numbers

Study an Example Problem and Solution

Read this problem about perimeter and area. Then look at Beau's solution to this problem.

Birdcages

An animal hospital is planning to build a new area for birds. The hospital is going to use recycled materials. There will be three different-size rectangular cages as shown below.

Small cage: floor area of 12 square feet
Medium cage: floor area of 24 square feet
Large cage: floor area of 36 square feet

Beau needs to find a possible length and width for the rectangular floor of each size cage. What is a possible length, width, and perimeter for each cage's floor?

Read the sample solution on the next page. Then look at the checklist below. Find and mark parts of the solution that match the checklist.

PROBLEM-SOLVING CHECKLIST

- ☐ Tell what is known.
- ☐ Tell what the problem is asking.
- ☐ Show all your work.
- ☐ Show that the solution works.

a. Circle something that is known.
b. Underline something that you need to find.
c. Draw a box around what you do to solve the problem.
d. Put a checkmark next to the part that shows the solution works.

350 Unit 3 Math in Action Multiply and Divide Multi-Digit Numbers ©Curriculum Associates, LLC Copying is not permitted.

Start problems: By launching the lesson with no explicit pre-instruction, teachers give students the opportunity to think critically, collaborate, and engage in meaningful mathematical discourse from the very beginning.

Try It problems promote productive struggle, perseverance, and flexible thinking. Students engage with both contextual and symbolic problems, choosing their own tools, representations, and strategies. These tasks allow students to make sense of the mathematics and experience real problem solving before instruction begins.

Most Try It problems can also be delivered verbally, as written or with small adjustments, and are intended to start the class.

Math in Action lessons offer rich tasks that let your students apply what they've learned in meaningful, real-world ways—deepening their understanding.

Liljedahl, P. (2021). *Building thinking classrooms in mathematics, grades K–12*. Sage Publications, Inc.

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2 Forming Collaborative Groups

Any time you use small group opportunities in *i-Ready Classroom Mathematics* is a chance to apply random groupings. This simple strategy helps break up social patterns, increases collaboration, and ensures all students engage with a variety of peers. Over time, random grouping builds a stronger sense of community and supports an equitable, student-centered learning environment.

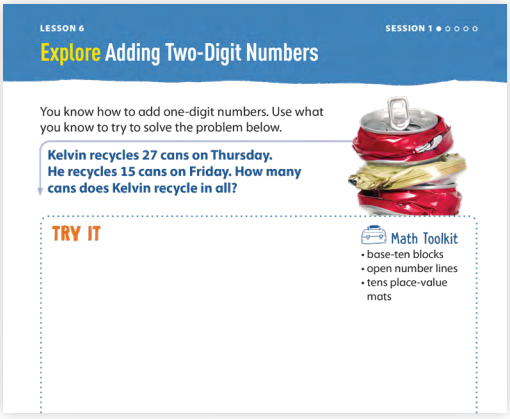
3 Where Students Work

i-Ready Classroom Mathematics doesn't dictate where students complete tasks, giving teachers the flexibility to adapt based on their classroom needs. Using vertical, non-permanent surfaces such as whiteboards or wall charts for **Try It** problems, or any task, can transform the learning environment.

TRY IT SMP 1, 2, 4, 5, 6

Make Sense of the Problem

Before students work on Try It, use **Say It Another Way** to help them make sense of the problem. Ask a student to paraphrase the problem. Listen for understanding that they are being asked whether Amy's number of pennies is prime or composite and whether Tyrell's number of pennies is prime or composite.


LESSON 6 SESSION 1

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

When all student thinking is visible, it promotes equity by reducing status differences and gives all students' work a voice. It also allows teachers to more easily observe, select, and sequence strategies while giving students the chance to learn from one another's approaches in real time.

4 Arranging Furniture

i-Ready Classroom Mathematics doesn't require a specific classroom setup to succeed. However, when you reconfigure your classroom to be student centered, you'll naturally increase how much your students talk and decrease how much you do. That shift aligns powerfully with the program's discourse-based approach and supports deeper learning. Each day, you have flexible options to include rotations that offer differentiated support. The program provides ready-to-use resources for teacher-led groups, partner work, and independent stations, making it easy to meet students where they are.

In Grades K and 1, you can bring counting to life through playful, daily routines that use movement, rhythm, and rhyme. These repeated experiences, along with lesson- and center-based counting opportunities, help your students internalize the counting sequence, recognize number patterns, and develop a strong foundation in the base-10 system.

5 How to Answer Questions

The discourse-based approach in *i-Ready Classroom Mathematics* encourages students to ask Keep Thinking questions—those that extend their reasoning and reduce dependence on the teacher for next steps. Instead of waiting for your input, students are guided to engage with one another and take ownership of their learning. **Support Partner Discussion** prompts play a key role in this shift. They spark immediate peer-to-peer dialogue, promote shared responsibility, and help students stay engaged, even when the math gets challenging.

DISCUSS IT SMP 3, 6, 7, 8

Support Partner Discussion

Encourage students to use the terms *factor pair*, *prime*, and *composite* as they discuss their solutions.

Support as needed with questions such as:

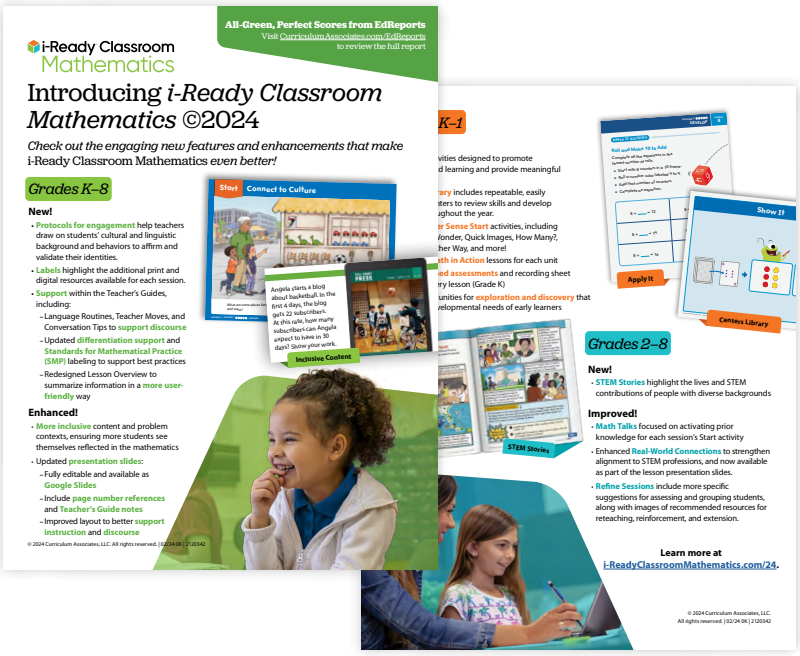
- *Did you draw a picture or make a model to solve the problem? Why or why not?*
- *How is your solution method the same or different from your partner's solution method?*

Language routines like Turn and Talk, the Four Rs, and Three Reads help students approach problems with enough information and reduce habits of asking Proximity and Stop Thinking questions. While designed for students, the **Math Discourse Cards** also support you in handling these types of questions by offering guidance on how to respond with more questions—a strategy encouraged in *Building Thinking Classrooms* to promote deeper thinking and independence.

The **sentence starters** help students rephrase their questions into Keep Thinking prompts, reinforcing a classroom culture in which students rely on each other, stay curious, and keep thinking through challenges.

6 When, Where, and How Tasks Are Given

Start and **Try It** problems are designed to be given at the beginning of the lesson without prior instruction, making them an ideal match for this practice. These tasks spark curiosity, promote student thinking from the outset, and shift the cognitive load to learners right away.



To enhance your task launch, consider incorporating elements from the **Connect to Culture** section in *i-Ready Classroom Mathematics*. This resource provides meaningful context that supports a storytelling approach—an essential part of engaging students in a *Building Thinking Classrooms* environment.

Math in Action problems are also well suited to this approach. Written in a narrative style, they naturally align with the goal of drawing students into the mathematics through real-world, story-driven scenarios.

Session 1 **Use with *Try It*.**

Artists in Puebla, Mexico have made Talavera tiles and pottery for centuries. This brightly colored style of pottery takes its name from a region of Spain that produces similar designs. Today, Talavera tiles decorate homes and other buildings in Mexico and across the United States. Ask students to share where they have seen Talavera or other colorful tiles.

7 What Homework Looks Like

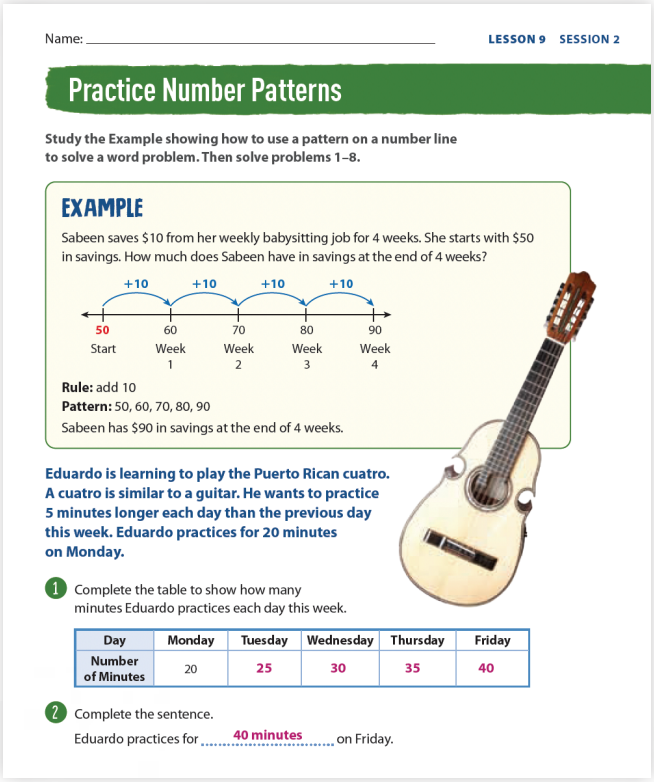
Any questions you'd typically assign as homework can be reframed as **Check Your Understanding** tasks and brought into class time. Setting aside time for students to work on these problems during the lesson allows you to support their thinking in the moment and gather meaningful formative data.

Questions from the **Apply It, Refine,** and **Additional Practice** sections are all well suited for this purpose. They offer a range of difficulty and depth, making it easy to tailor your selection to meet students where they are while reinforcing key content.

8 Fostering Student Autonomy

As a discourse-based program, *i-Ready Classroom Mathematics* is designed to create space for student voices and fosters autonomy by encouraging you to adopt a key principle: Don't say anything that another student could say.

One of the most effective tools for building this culture of student-driven discourse is the **Discuss It** prompt. These prompts, which span Grades K–8, are developmentally designed to support meaningful student-to-student conversations about the math, shifting the focus from teacher explanation to peer-to-peer reasoning.



Name: _____ LESSON 9 SESSION 2

Practice Number Patterns

Study the Example showing how to use a pattern on a number line to solve a word problem. Then solve problems 1–8.

EXAMPLE

Sabeen saves $10 from her weekly babysitting job for 4 weeks. She starts with $50 in savings. How much does Sabeen have in savings at the end of 4 weeks?

Rule: add 10
Pattern: 50, 60, 70, 80, 90
Sabeen has $90 in savings at the end of 4 weeks.

Eduardo is learning to play the Puerto Rican cuatro. A cuatro is similar to a guitar. He wants to practice 5 minutes longer each day than the previous day this week. Eduardo practices for 20 minutes on Monday.

1 Complete the table to show how many minutes Eduardo practices each day this week.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Number of Minutes	20	25	30	35	40

2 Complete the sentence.
Eduardo practices for 40 minutes on Friday.

9 Using Hints and Extensions

Creating a sequence of curriculum tasks that gradually increase in challenge, known as thin slicing, helps keep your students in a productive flow. This approach allows learners to build momentum, experience success, and stay engaged without becoming overwhelmed or disengaged.

You'll find excellent sources for building thin-sliced task sequences in the **Fluency and Skills Practice** pages, which offer a wide range of problems. The **Additional Practice** pages (i.e., green pages in the Student Worktext), with problems labeled Basic, Medium, and Challenge, are also ideal. Similarly, **Refine** session questions, labeled with Depth of Knowledge (DOK) levels, provide a structured way to layer complexity into your task sequences.

10 Consolidating a Lesson

Consolidation is a core part of the **Try–Discuss–Connect** framework. Helping your students merge their thinking with classmates' ideas and new models is central to *i-Ready Classroom Mathematics*. One of the most effective ways to consolidate through student work is by thoughtfully selecting and sequencing student strategies.

Resources like **Picture It, Model It**, and **Connect It** questions provide clear guidance on what to focus on during consolidation conversations, teacher scribing, or guided gallery walks. These supports help you spotlight the mathematical thinking that matters most.

During consolidation, you might also surface common misconceptions your students encountered—not to call out individuals but to spark rich discussion and reinforce deeper understanding. The **Common Misconceptions** in *i-Ready Classroom Mathematics* give you helpful Look Fors and talking points you can use for Turn and Talks or whole class reflections.

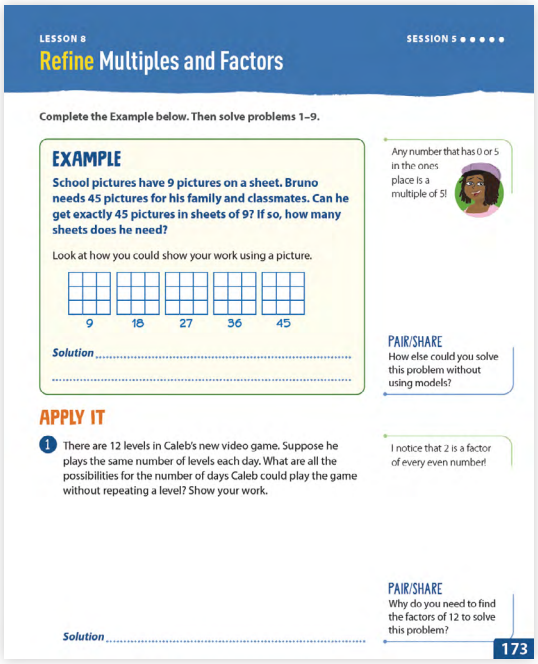
Common Misconception Look for students who incorrectly identify 23 as a composite number and 36 as a prime number because they confuse the terms *prime* and *composite*.

Once you've created your thin-sliced task set—drawing from any of the sources above—you can increase student ownership by writing each task on banners and posting them on vertical, non-permanent surfaces. This allows students to select their next task independently, reducing reliance on you and supporting autonomy.

11 How Students Take Notes

Making notes, as opposed to taking notes, collaboratively gives students the opportunity to participate and contribute as opposed to being a passive participant. The **Example** question at the start of each **Refine** session is an ideal choice for the fill-in-the-blank examples referenced in *Building Thinking Classrooms*. It's already structured for easy adaptation into both a fill-in-the-blank format and a Type 1 task. You can also pull Type 1 tasks from **Additional Practice** questions labeled Basic and **Refine** questions marked DOK 1.

When selecting a Type 2 task, both **Additional Practice** and **Refine** questions—especially those with clear difficulty and DOK labels—offer strong options. These same pages also give students a range of problems they can choose from when selecting their own tasks for Quadrant C.



LESSON 8 SESSION 5

Refine Multiples and Factors

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

EXAMPLE

School pictures have 9 pictures on a sheet. Bruno needs 45 pictures for his family and classmates. Can he get exactly 45 pictures in sheets of 9? If so, how many sheets does he need?

Look at how you could show your work using a picture.

9 18 27 36 45

Solution

Any number that has 0 or 5 in the ones place is a multiple of 5!

PAIR/SHARE
How else could you solve this problem without using models?

APPLY IT

1. There are 12 levels in Caleb's new video game. Suppose he plays the same number of levels each day. What are all the possibilities for the number of days Caleb could play the game without repeating a level? Show your work.

I notice that 2 is a factor of every even number!

PAIR/SHARE
Why do you need to find the factors of 12 to solve this problem?

Solution

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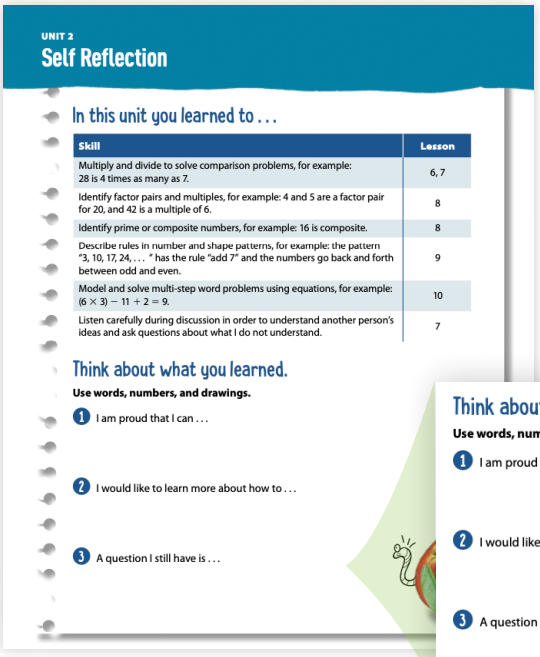
12 Choosing What to Evaluate

i-Ready Classroom Mathematics puts a strong emphasis on helping you communicate the behaviors you value and guide students to reflect on their own actions. This is built into the **Self Reflection** at the end of each unit, where students are encouraged to evaluate their growth beyond academic content.



UNIT 2

Self Reflection

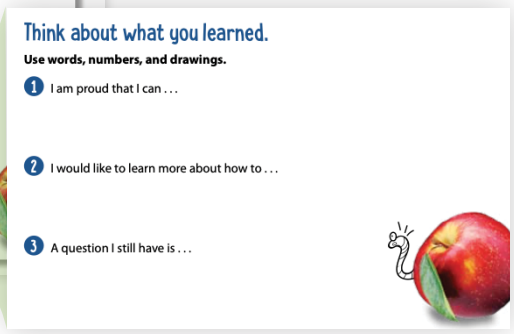
In this unit you learned to . . .

Skill	Lesson
Multiply and divide to solve comparison problems, for example: 28 is 4 times as many as 7.	6, 7
Identify factor pairs and multiples, for example: 4 and 5 are a factor pair for 20, and 42 is a multiple of 6.	8
Identify prime or composite numbers, for example: 16 is composite.	8
Describe rules in number and shape patterns, for example: the pattern "3, 10, 17, 24, . . . " has the rule "add 7" and the numbers go back and forth between odd and even.	9
Model and solve multi-step word problems using equations, for example: $(6 \times 3) - 11 + 2 = 9$.	10
Listen carefully during discussion in order to understand another person's ideas and ask questions about what I do not understand.	7

Think about what you learned.

Use words, numbers, and drawings.

1. I am proud that I can . . .
2. I would like to learn more about how to . . .
3. A question I still have is . . .



Think about what you learned.

Use words, numbers, and drawings.

1. I am proud that I can . . .
2. I would like to learn more about how to . . .
3. A question I still have is . . .

Students are also asked to make connections to the unit's content during the Self Reflection.

Additionally, the Teacher's Guide offers powerful prompts focused on supporting positive learning habits that you can use to check in on student progress with these essential non-curricular behaviors.

ASK *We have been talking about making choices that help you learn math. What is going well for you as a math learner?*

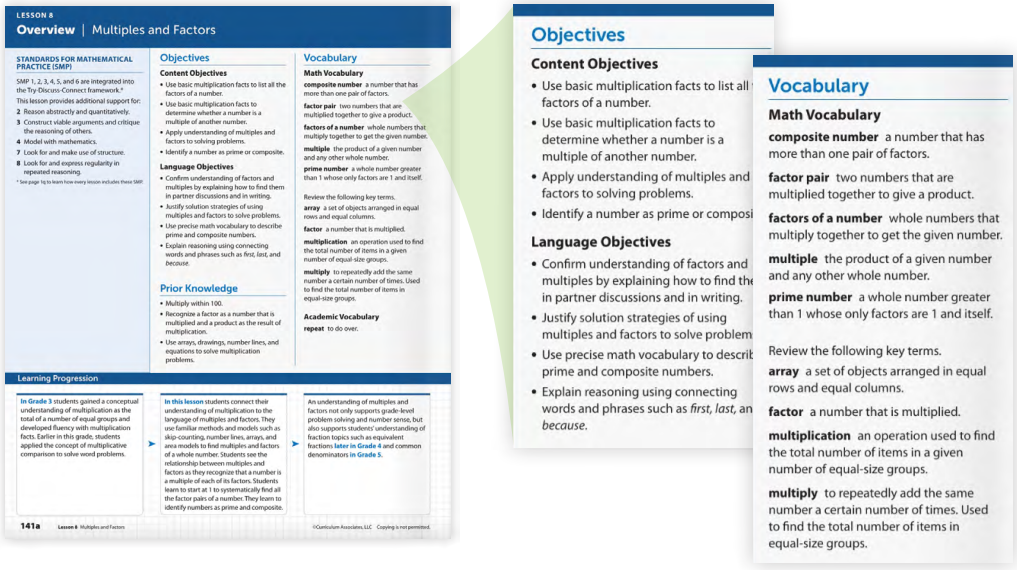
LISTEN FOR Students may describe managing their own learning by asking questions when they are confused and persisting with challenging work.

ASK *What is going well for you when you work with other students to learn math?*

LISTEN FOR Students may describe working well with others by taking turns, listening carefully, and helping each other.

13 Using Formative Assessment

The **Lesson Overview** page in *i-Ready Classroom Mathematics* gives you a focused snapshot of each lesson's **Content Objectives, Language Objectives**, and **Key Vocabulary**. Paired with clearly defined problem levels (i.e., Basic, Medium, Challenge; DOK 1, 2, 3), this information equips you to build purposeful tools that guide your students through the lesson with clarity and intention.


LESSON 8

Overview | Multiples and Factors

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:
2 Reason abstractly and quantitatively.
3 Construct viable arguments and critique the reasoning of others.
4 Model with mathematics.
7 Look for and make use of structure.
8 Look for and express regularity in repeated reasoning.

* See page 1g to learn how every lesson includes these SMP.

Objectives

Content Objectives
- Use basic multiplication facts to list all the factors of a number.
- Use basic multiplication facts to determine whether a number is a multiple of another number.
- Apply understanding of multiples and factors to solving problems.
- Identify a number as prime or composite.

Language Objectives
- Confirm understanding of factors and multiples by explaining how to find them in partner discussions and in writing.
- Justify solution strategies of using multiples and factors to solve problems.
- Use precise math vocabulary to describe prime and composite numbers.
- Explain reasoning using connecting words and phrases such as *first*, *last*, and *because*.

Prior Knowledge
- Multiply within 100.
- Recognize a factor as a number that is multiplied and a product as the result of multiplication.
- Use arrays, drawings, number lines, and equations to solve multiplication problems.

Vocabulary

Math Vocabulary

composite number a number that has more than one pair of factors.

factor pair two numbers that are multiplied together to give a product.

factors of a number whole numbers that multiply together to get the given number.

multiple the product of a given number and any other whole number.

prime number a whole number greater than 1 whose only factors are 1 and itself.

Review the following key terms.

array a set of objects arranged in equal rows and equal columns.

factor a number that is multiplied.

multiplication an operation used to find the total number of items in a given number of equal-size groups.

multiply to repeatedly add the same number a certain number of times. Used to find the total number of items in equal-size groups.

Academic Vocabulary

repeat to do over.

Learning Progression

In Grade 3 students gained a conceptual understanding of multiplication as the total of a number of equal groups and developed fluency with multiplication facts. Earlier in this grade, students applied the concept of multiplicative comparison to solve word problems.

In this lesson students connect their understanding of multiplication to the language of multiples and factors. They use familiar methods and models such as skip-counting, number lines, arrays, and area models to find multiples and factors of a whole number. Students see the relationship between multiples and factors as they recognize that a number is a multiple of each of its factors. Students learn to start at 1 to systematically find all the factor pairs of a number. They learn to identify numbers as prime and composite.

An understanding of multiples and factors not only supports grade-level problem solving and number sense, but also supports students' understanding of fraction topics such as equivalent fractions **later in Grade 4** and common denominators **in Grade 5**.

At the unit level, **Self Checks** break down the subtopics, offering a practical way for you and your students to track progress, celebrate growth, and pinpoint areas that need reinforcement or extension.

14 Grading

The **Lesson Overview** page in *i-Ready Classroom Mathematics* gives you a powerful launch point for designing assessment tools that generate meaningful data, helping you make informed decisions and drive deeper thinking in your *Building Thinking Classrooms* environment.

About *i-Ready Classroom Mathematics*

i-Ready Classroom Mathematics is designed to support teachers by equipping them with the resources they need to help students develop a strong foundation in mathematics.

Structured for In-Depth Understanding

The instructional design in *i-Ready Classroom Mathematics* emphasizes mathematical ideas as connected and interrelated, rather than a series of discrete topics.

The Multiple-Day Lesson Structure

The multiple-day lesson structure provides time for students to develop deep understanding and make connections that extend across the lessons.

Lesson 7: Multiply with 7, 8, and 9 across the Multiple-Day Lesson Structure

Day 1	Day 2	Day 3	Day 4	Day 5
Explore Session	**Develop** Sessions			**Refine** Session
• Prioritize critical prerequisite skills. • Accelerate access to grade-level content.	• Build conceptual understanding through multiple-day Develop sessions. • Practice new skills and apply new learning.			• Strengthen grade-level practice and differentiation with built-in practice time.

A Powerful Instructional Framework

The Try–Discuss–Connect instructional framework of *i-Ready Classroom Mathematics* seamlessly incorporates multiple routines and best practices into instruction while integrating language and mathematics to develop deeper understanding.

TRY IT

Students make sense of the problem.

Students solve and support their thinking.

DISCUSS IT

Students share their thinking with a partner.

Students compare their strategies.

CONNECT IT

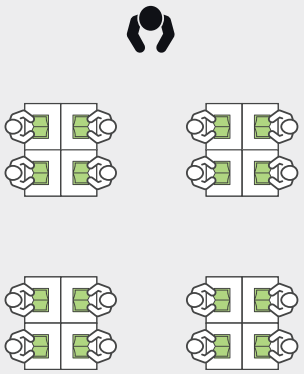
Students make connections and reflect on what they have learned.

Students apply their thinking to a new problem.

Time for Practice and Differentiation Built into Instruction

Each session includes time for student-centered, discourse-driven instruction and options for differentiation and practice.

Student-Centered, Discourse-Driven Instruction

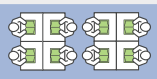


Options for Practice and Differentiation

Teacher-Led
Current or Prerequisite Lessons:

- Teacher's Guide Activities
- Tools for Instruction
- Learning Activities (Grades K and 1)
- Center Activities (Grades 2–5)
- Interactive Tutorials

Partner



- Center Activities (current or Prerequisite Lessons)
- Centers Library (Grades K and 1)
- Enrichment Activities
- Unit Games (on grade level to review, prerequisite to meet needs)
- Grade Level Games (Grades K–2)

Independent

- Practice Student Worktext
- Fluency and Skills Practice
- Interactive Practice
- Fluency Flight (Grades 2–5)
- Learning Games
- *i-Ready Personalized Instruction**

**i-Ready Personalized Instruction* is an optional add-on.*

i-Ready Classroom Mathematics

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