

**Mc
Graw
Hill**

Program Overview
Grades K–5



Reveal **MATH**[®]

Reveal the Full Potential
in Every Student



Reveal the Mathematician in Every Student

Reveal Math[®], a balanced elementary math program, develops the problem solvers of tomorrow by incorporating both inquiry-focused and teacher-guided instructional strategies within each lesson. In order to uncover the full potential in every student, *Reveal Math*:

Champions a positive classroom environment centered on curiosity, connection, and social-emotional development.

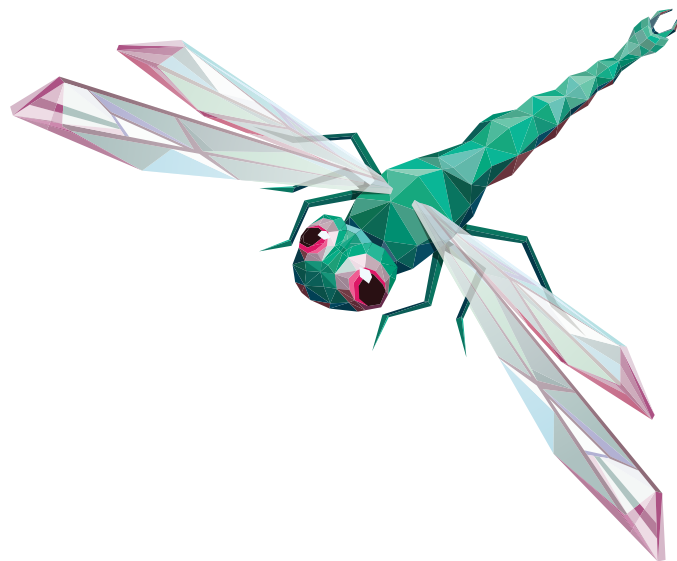
- Math Is... Unit
- Ignite! Activities
- STEM-Focused Units

Explores mathematics through a flexible lesson design providing access to rigorous instruction with embedded teacher supports and scaffolds.

- Lesson Model and Routines
- Social Emotional Learning
- Language and English Learner Supports
- Fluency

Tailors classroom activities to student need through insightful assessment and purposeful, multi-modal differentiation.

- Formative Assessment
- Differentiation
- Course Assessments
- Targeted Intervention



Program Design Influenced by Teachers, Research, and Industry Experts

Reveal Math is a K–12 program crafted with the input of hundreds of educators across the country. Educator voices and needs were aligned with an instructional model that is based on validated research brought forth by McGraw Hill learning scientists and the *Reveal Math* expert authorship team.

Major Focus Areas:

- **Equitable classrooms:** Learner-focused practices to develop a classroom designed for all students.
[See pages 4–5, 8–9, and 18–19.](#)
- **Social and Emotional Learning:** Competencies to support academically and socially engaged classroom members.
[See page 11.](#)
- **Metacognition:** Promotion of student reflection on their learning.
[See pages 14, 16, and 17.](#)
- **Sense-Making:** Support for the development of problem-solving skills.
[See page 10.](#)
- **Classroom Discourse:** Use of the appropriate math vocabulary and constructive critique of classmates' math thinking.
[See page 12.](#)
- **Productive Struggle:** Productive engagement with mathematical ideas and relationships.
[See pages 12 and 13.](#)
- **Fluency:** Use of flexible strategies to practice math content and achieve automaticity.
[See page 15.](#)
- **Instructional Routines:** Structures and expectations that create productive classroom interactions with students.
[See page 9.](#)

The *Reveal Math* Authorship

McGraw Hill learning scientists teamed up with expert authors to create a program guided by validated academic research and classroom best practices.



Ralph Connelly, Ph.D.

Authority on the development of early mathematical understanding.

Annie Fetter

Advocate for student ideas and thinking that fosters strong problem solvers. **Contributing Author of Sense-Making Routines, page 9**

Sharon Griffin, Ph.D.

Champion for number sense and the achievement of all students.

Linda Gojak, M.Ed.

Expert in both theory and practice of strong mathematics instruction. **Contributing Author of Math Is... Unit, page 4**

Susie Katt, Ph.D.

Advocate for the unique needs of our youngest mathematicians.

Ruth Harbin Miles, Ed.S.

Leader in developing teachers' math content and strategy knowledge.

Nicki Newton, Ed.D.

Expert in bringing student-focused strategies and workshops into the classroom. **Contributing Author of the Game Station, page 19**

Georgina Rivera, M.Ed.

Expert in building student agency through culturally responsive teaching.

John SanGiovanni, M.Ed.

Leader in understanding the mathematics needs of students and teachers. **Contributing Author of the Math Is... Unit and Number Routines, page 4 and 19**

Jeff Shih, Ph.D.

Advocate for the importance of student knowledge.

Raj Shah, Ph.D.

Expert in both theory and practice of strong mathematics instruction. **Contributing Author of the Ignite! Activities, page 6**

Cheryl Tobey, M.Ed.

Facilitator of strategies that drive informed instructional decisions. **Contributing Author of Math Probes, Page 17**

Dinah Zike, M.Ed.

Creator of learning tools that make connections through visual and hands-on techniques.

Champion a Positive Classroom Environment



Math Is...Unit: Establish a Community of Learners

The first unit in every grade is the **Math Is... Unit**, which aims to help students and teachers begin to understand math as a set of problem-solving strategies instead of an end result. The unit helps define a productive and positive classroom environment where all students can:

- Share ideas and collaborate freely.
- Find success in math and become doers of mathematics.
- Apply the mathematical thinking and practices to problem solving.
- Take ownership of their personal learning journey.
- Become the creative problem solvers of tomorrow.

Support Ownership of Learning

Lesson 1: Understand Your Math Story Is Ongoing

Lesson 1 aims to help all students see themselves as doers of mathematics and take **ownership of their learning** within the math classroom. Students:

- Learn about the teacher’s personal math story, describe their math superpowers, and craft their personal math story.

Lessons 2–5: Create Mathematical Thinking Habits

Lessons 2 through 5 focus on **Mathematical Practices**. Each lesson unpacks the thinking habits of one or two standards. Students:

- Develop their mathematical thinking and reasoning.
- Apply thinking and reasoning skills while problem-solving and communicate effectively about math.

Lesson 6: Collaborate and Respect Your Classmates

In Lesson 6, students discuss what a **positive and productive classroom environment** looks like. Students:

- Develop a voice and choice in their classroom environment.
- Establish norms of interaction within the math classroom.

Lesson 1-1
Math Is Mine

Be Curious
What do you notice?
What do you wonder?



Unit 1 • Math Is ... 3



Learn
Math gives us power to solve problems.
Everyone has math superpowers.

Find out about your teacher’s special math skills.

What are your math superpowers?

Math is... Mindset
What makes me special in math?

How do your math superpowers help you?

Math is... Mindset
How can I use my skills in math?

4 Lesson 1 • Math Is Mine

Spark Student Curiosity Through Ignite! Activities

Each unit opens with an Ignite! activity, an interesting problem or puzzle that:

- Sparks students' interest and curiosity.
- Provides only enough information to open up students' thinking.
- Motivates them to persevere through challenges involved in problem-solving.

“Let’s bring curiosity, wonder, and joy back into the classroom and make math irresistible for kids.”

**- Raj Shah,
Contributing Author**

Ignite! activities engage students in productive struggle as they provide only the information necessary to motivate and challenge the student.



IGNITE!

Name _____

Broken Calculators

Part A: Your calculator can only add 2s and 5s.

How can you make numbers less than 100 with this calculator?



Part B: Your calculator can only add 3s and 7s.

What whole numbers less than 12 *cannot* be made with this calculator?

How can you make each of the whole numbers 12 through 16 with this calculator?



What is the quickest way to make 30 with this calculator? Explain.

Is there a number greater than 11 that *cannot* be made with this calculator? Explain.

Put Math in Action With STEM-Focused Units



Math is everywhere, and students should relate to math as something everyone does. STEM-focused units highlight careers and real-world application of math to help students see the application of math as a tool to explore the world around them.



The **STEM Career Kid video** introduce a STEM career and provides an overview of the job responsibilities.



The **Math in Action** videos apply the unit math content with the STEM career focus to bring the content to the real world.

Mountain Science

Glaciers are mountain features that are made up of fallen snow that, over many years, compacts into large, thickened ice masses. Ecosystem scientists study glaciers and their melting (or, called runoff, to help us understand how our climate changes, which can hurt the environment. Based on what they learn, scientists then make suggestions for how to be kinder to the environment.

Glacial Runoff May to September (kiloliters)		
Water Source	Current Average	Historical Average
Shehulin River	600,000	523,000
Ross Lake	1,370,000	1,520,000
Baier River	1,700,000	1,752,000

Imagine you are an ecosystem scientist.

- Make a graph that displays the information in the table. Analyze the information.
 - Make comparisons between the current and historical glacial runoff data.
 - What conclusions can you draw about the current and historical glacial runoff based on your comparisons? What similarities and differences do you notice?
 - Use rounded numbers to write word problems that ask, "How much more?" and "How much less?"
- Consider what you have learned. Make a poster that will tell others about the data you analyzed and your conclusions. Be prepared to present your findings to the class.

Unit 2 • Unit Test Goes Here

STEM Project Cards allow students to dig deeper creatively and apply their skills to learn more about the STEM focus within the unit.

Unit 3

Multiplication and Division

Focus Question
What does it mean to multiply and divide?

Hi, I'm Finn.
I want to be a construction manager. Let's say I run 3 different construction sites. I have 12 workers. It is really important that I have an equal number of workers at each construction site. To help me do my job, I need to know how to multiply and divide.

STEM video GO ONLINE

I am back at home, and I still wonder how wind strength affects the size of a hill. So I came up with an experiment!

C.J.

What do you want to do?

learn about the experiment form a hypothesis

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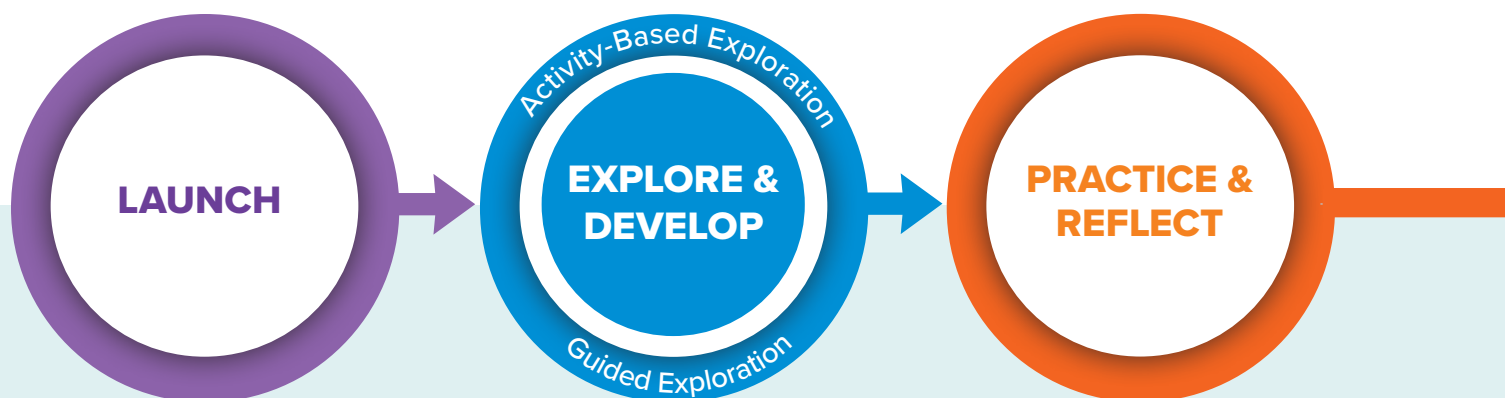
Back Done

Within **STEM Adventures**, students engage in experiments with the STEM Career Kids, make hypotheses, and apply mathematical knowledge to analyze the data.

Explore Mathematics Through a Flexible Lesson Design

The Lesson Model

Reveal Math's lesson model keeps sense-making and exploration at the heart of learning. Every lesson provides two instructional strategies to develop the math content and tailor the lesson to the needs and structure of the classroom.



Launch

Be Curious starts every lesson with the opportunity to be curious about math.

- Students focus on exploration and sense-making.
- Teachers foster students' ideas through meaningful discussion.

Explore & Develop

Explore and Develop unpacks the lesson content through activity-based or guided exploration.

- Students explore the lesson concepts and engage in meaningful discourse.
- Teachers utilize effective teaching practices to make meaningful connections.

Practice & Reflect

On My Own offers students opportunities to engage with the math and reflect on their learning.

- Students practice lesson concepts, completing the On My Own exercise.
- Teachers monitor progress and have students reflect on the lesson's learning targets.

Two ways to Teach Every Lesson!

Routines

Instructional routines are embedded within every *Reveal Math* lesson to support a productive classroom.

Build Fluency

Number Routines

Support the development of fluency with targeted concepts, prerequisite skills, and mental math strategies at the start of every lesson.

MLR

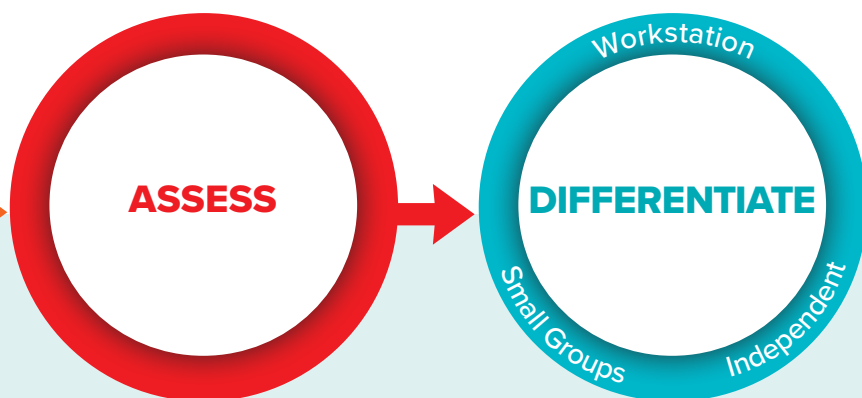
Math Language Routines

Adjust the way students organize and communicate their own ideas and clarify the ideas of others throughout the lesson.



Sense-Making Routines

Build conceptual understanding by making sense of mathematical concepts at the base for every lesson.



Assess

The **Exit Ticket** includes a daily formative assessment to check for understanding.

- Students complete a short exit ticket and reflect on their learning.
- Teachers use data to inform their daily differentiation.

Differentiate

Daily differentiation helps support every student in their path to understanding.

- Students work on differentiated tasks to reinforce their understanding, build their proficiency, and/or extend their thinking.
- Teachers pull small groups as needed.



Lesson Model: Launch

Derive Understanding by Sparking Curiosity

Sense-Making Routines launch every lesson, creating an equitable classroom culture where all ideas are welcome and respected. Student curiosity and ideas started in *Be Curious* become the base for the day's lesson.

“All students have ideas about math that are valid and worth talking about.”


**-Annie Fetter,
Contributing Author**

Lesson 3-1

Understand Equal Groups

Be Curious

**What do you notice?
What do you wonder?**



Math is... Mindset

What can you do to be an active listener?

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Be Curious offers a high-ceiling/low-floor that allows every student to explore and discuss their ideas with multiple entry points and approaches to problem-solving.





Support the Whole Child With Social and Emotional Learning (SEL) Integration

Every lesson integrates a **SEL Objective** along with the math and language objectives of the lesson, addressing the CASEL Social and Emotional Learning competencies throughout each grade level.

Math is... Mindset

What can you do to be an active listener?

SEL Relationship Skills: Effective Communication

Effective communication includes active listening. Remind students that an active listener gives full attention to the speaker by looking at the speaker and providing thoughtful feedback to the speaker. As students discuss what they noticed and wondered, remind classmates to listen actively and as appropriate, provide thoughtful feedback.

Math Is... Mindset prompts with teacher supports keep social and emotional learning at the top of students' minds as they interact and discuss throughout the lesson.

Lesson Model: Explore & Develop

Develop Understanding Through Exploration

In Explore and Develop, the teacher has two ways to facilitate student understanding: Activity Based and Guided Exploration. Integrated **Effective Teaching Practices** guide instruction and discourse, keeping the student at the center of the learning.

Put the Math Practices in Action

Math is... Precision


To think like mathematicians, students must employ the **math practices** and develop a problem-solving frame of mind.

Reveal Math helps students build proficiency with these important thinking habits and problem-solving skills through the **Math is... prompts** found the Learn phase of every lesson. These prompts model the kinds of questions students can ask themselves to become proficient problem solvers and doers of math.


First introduced in the **Math Is... Unit**, the **Math Is... Prompt** in each Learn focuses on a different mathematical practice.

Explore & Develop 20 min

Learn
How can you represent the number of peaches in the three baskets?

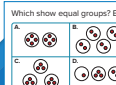
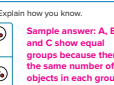
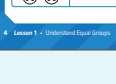



Each basket is one group. Each peach is one object.



Each basket has the same number of peaches.
There are 3 **equal groups** with 5 objects in each group.
3 equal groups of 5
 $3 \times 5 = 15$

You can use **multiplication** to represent equal groups. **Maths is... Precision**
Why is it important to say "equal groups"?

Work Together
Which show equal groups? Explain how you know.
A.  B. 
C.  D. 
Sample answer: A, B, and C show equal groups because there is the same number of objects in each group.

MLR Collect and Display
As you discuss the questions with the students, listen and write key words on the board that students use, such as *groups*, *objects*, *number of*, and *multiplication*. Display the words and phrases for student reference. Use the student-generated expressions to help them make connections between student language and math vocabulary. Update the collection with new understandings as the lesson progresses.

1 Pose the Problem
ETP Pose Purposeful Questions

- What might you need to know before finding the total number of peaches?
- How could you find the total number of peaches in all 3 baskets?

2 Develop the Math
Choose the option that best meets your instructional goals.
MLR Critique, Correct, and Clarify
On the board write, *There are 5 groups with 3 objects in each group.* Pair students to discuss whether this statement about the baskets of peaches is correct. Ask them to identify any mistakes and to make changes. Have students write a new, correct version of the sentence.

3 Bring It Together
ETP Elicit and Use Evidence of Student Thinking

- If each basket had 6 peaches, how would the drawing be different?
- If there were 4 baskets that each had 4 peaches, what would the drawing look like?

Key Takeaway

- One meaning of multiplication is equal groups.

Work Together
The Work Together activity can be used as a formative assessment opportunity to check students' understanding of equal groups. Have students work on the activity in pairs before asking them to identify whether the options show equal groups.

Common Misconception: Students may think that D shows equal groups because the total number of objects in the first and last group is the same total as the middle group. Remind students that equal groups means that each group has the same number of objects.

LCM Language of Math
Students need multiple opportunities to describe the *number of groups*, the *number of objects in each group*, and the *total number of objects*. Ask students questions that require them to use these terms when describing both representations and equations.

4 Unit 3 • Multiplication and Division

CHOOSE YOUR OPTION

Activity-Based Exploration

Students explore and use equal groups to find the total number of objects.

Materials: counters or other countable manipulatives, yarn or string

Directions: Students will explore ways to find the total number of peaches in 5 baskets.

- Let's imagine there are five baskets and the baskets have peaches in them. How can you determine the total number of peaches in the baskets?

Students will use yarn or string to represent the baskets and counters to represent the peaches. Students may choose to place the same number of counters in each group or a different number. Have them find the total number of peaches and record their work.

ETP Support Productive Struggle

- How many counters are in each group?
- How can you find the total number of counters when there is a different number of in each group? How can you find the

Guided Exploration

Students build a understanding of one meaning of multiplication as equal groups.

ETP Use and Connect Mathematical Representations

- **Think About It:** What does each object represent?
- What could be another way to show the number of baskets and the number of peaches in each basket?

Discuss with students the meaning of equal groups. Ensure that students understand that equal groups have the same number of objects in each group.

- How could you explain to a friend that the peaches are in equal groups?

Identify the multiplication symbol in the equation and explain that it means *groups of* and can be read as *multiplied by*. Explain that you can use multiplication to find the total number of objects when the number of objects in each group is the same

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ETP Support Productive Struggle

- How many counters are in each group?
- How can you find the total number of counters when there is a different number of in each group? How can you find the total when there are the same number in each group?
- Do you always have to add to find the total? Explain

Have students share and compare their strategies for finding the number of counters when there was the same and different number in each group.

- Which was easier: finding the total when the groups had the same number of objects or when they had different numbers?

Introduce the concept of multiplication.

- One way to find the total number of objects in equal groups is multiplication. You can multiply the number of groups by the number of objects in each group.

Model 5 groups of 3 counters and present the equation $5 \times 3 = 15$. Note the multiplication symbol and as needed discuss operation symbols they already know. Have students repeat the activity with groups in each basket and represent with a multiplication equation.

- What strategies can you use to find the total?

Activity Debrief: Have pairs explain how they found the total number of counters. Ask them to think about why using multiplication might be a more efficient strategy for determining the total.

Math Is... Precision

- Why is it important to say "equal groups"?

Students reflect on the importance of precise language when exploring multiplication.

English Learner Scaffolds

Entering/Emerging Support students in understanding the meaning of "equal groups" by pointing out the pictures of the peach baskets. Have students chorally count to determine that each group has the same number of objects. Then have students explain how they know that the peaches are in equal groups.

Developing/Expanding Provide the following sentence starter to help students explain their multiplication to equal groups: *I know the peach baskets represent equal groups because _____.*

Guided Exploration

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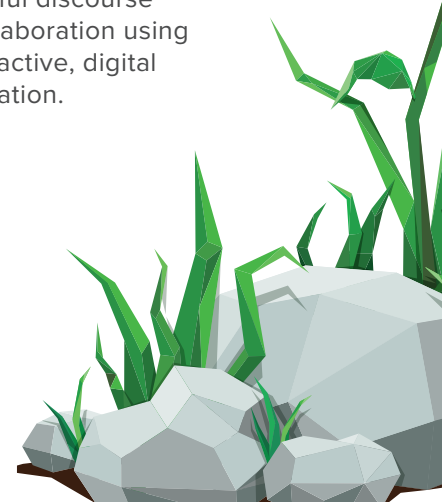
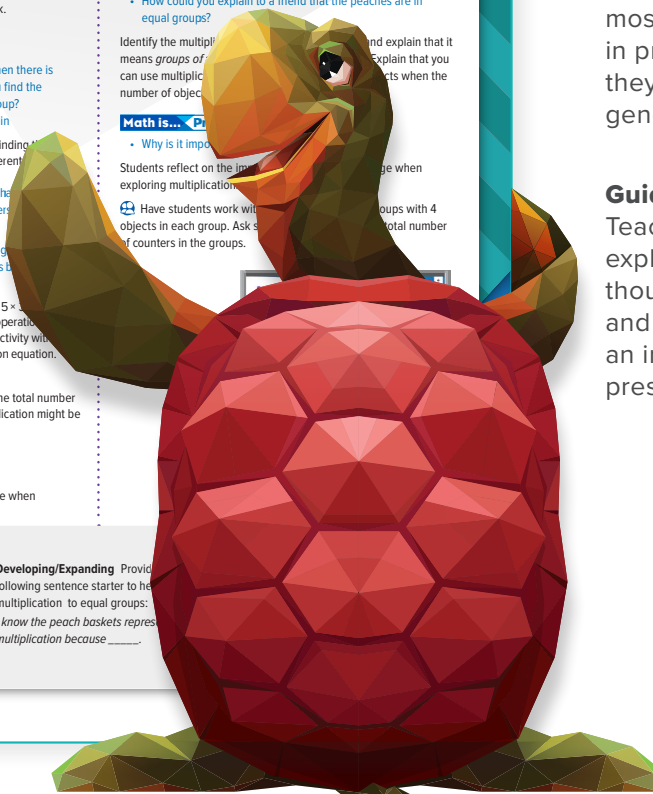
Have students work with a partner to explain to a friend how to find the total number of objects in each group. Ask students to explain the total number of counters in the groups.

Activity-Based Exploration

Students work together to explore concepts, develop and test hypotheses, and—most importantly—engage in productive struggle as they problem solve and generalize learning.

Guided Exploration

Teachers facilitate exploration through thoughtful discourse and collaboration using an interactive, digital presentation.



Tailor Classroom Activities to Student Needs

Lesson Model: Practice & Reflect

Engage in Concepts Independently to Further Understanding


Practice and Reflect provides students with the ability to practice with questions that address all elements of rigor.


On My Own activities can be completed in the print Student Edition or eBook and are available in Spanish.

On My Own MATH REPLAY GO ONLINE

Name _____

How many? Fill in the blanks.

1.  _____ equal groups of _____

2.  _____ equal groups of _____

How can you represent the equal groups?


3. 2 equal groups of 7 4. 4 equal groups of 5


How many objects?


5. 4 equal groups of 4 pencils
 $4 \times 4 =$ _____ pencils

6. 3 equal groups of 2 mittens
 $3 \times 2 =$ _____ mittens

What equation represents the equal groups?

7.  _____

8.  _____

9. **STEM Connection** Finn has 3 construction sites. He assigns 8 workers to each site. How many workers does he assign? Explain how you know. 




Math Replay Video
 Every lesson contains a one- to two-minute video explanation of the lesson concept for students to reference as they complete independent work.

Additional Practice contains two additional practice pages for every lesson to be completed in print or digital, which embeds learning aids.

Question 4 of 7

Question 4
 Choose the correct answer.
 Look at the equal groups.



Which multiplication equation represents the equal groups?

A) $2 \times 7 = 14$
 B) $3 \times 6 = 18$
 C) $3 \times 7 = 21$
 D) $3 \times 7 = 21$

Need help with this question?

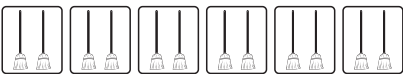
Exit Ticket: Use Data to Inform Differentiation

Every lesson closes with an Exit Ticket to check for student understanding and **provide recommendations to the teacher for further differentiation.**

Lesson 3-1
Exit Ticket

Name _____


1. How many? Fill in the blanks.



_____ equal groups of _____

2. Connor makes 5 small fruit bowls. Each fruit bowl has 4 cherries. How many cherries does Connor use to make the 5 fruit bowls?
Write a multiplication equation.


3. Randy arranges some beetles into equal groups. Which can be used to show how many beetles Randy has? Choose all that apply.



A. 2 equal groups of 2 B. $4 \times 2 = 8$
C. 4 equal groups of 2 D. $2 \times 2 = 4$

Reflect On Your Learning

I'm confused. I'm starting to understand. I understand. I can teach someone else.

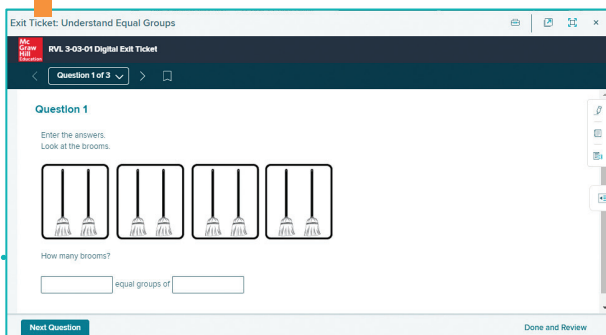


Assessment Resource Book 39

Reflect On Your Learning allows students to reflect on their learning daily and communicate their confidence level with the teacher.



Exit Tickets can be taken digitally, which provides immediate data reporting options.



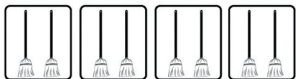
Exit Ticket: Understand Equal Groups

RVL 3-03-01 Digital Exit Ticket

Question 1 of 3

Question 1

Enter the answers.
Look at the brooms.



How many brooms?
_____ equal groups of _____

Next Question Done and Review

Exit Ticket Recommendations

If students score	Then have students do
3 of 3	Additional Practice or any of the B or E activities
2 of 3	<i>Take Another Look</i> or any of the B activities

Key for Differentiation

- R** Reinforce Understanding
- B** Build Proficiency
- E** Extend Thinking

Lesson Model: Differentiate

Create Purposeful Learning Moments Driven by Data

Differentiation within *Reveal Math* provides a variety of engaging, multi-modal activities in different delivery options that any student can access based on the area they need to focus on most for that lesson.

Reinforce Understanding through small-group instructional tasks, assignable digital lessons, and independent work.

Build Proficiency through digital games or interactives, the student practice book, and spiral review activities.

Extend Your Thinking through thoughtful application cards, simulations, web sketches, and extension worksheets.

Differentiate 10 min Select resources based on your classroom set up, or your students' needs.

R Reinforce Understanding

SMALL GROUP

How Many Xs?

Work with students in pairs. Have one student roll a number cube and then draw that number of circles. Then have the other student roll a number cube to determine the number of Xs to draw in each circle. Students should record a multiplication equation to find the total number of Xs. Help students recognize that they can skip count instead of counting all of the circles. Repeat the process. Have the students compare their totals over several rounds to determine the greatest number.

B Build Proficiency

WORKSTATIONS

Practice It! Game Station Equal Groups Bingo

Students practice representing multiplication using equal groups.



Take Another Look Lesson

Assign the interactive lesson to reinforce targeted skills.

- Model Multiplication (Objects)



GO ONLINE

Interactive Additional Practice

Assign the digital version of the Student Practice Book.



GO ONLINE

Differentiation Resource Book, p. 25

INDEPENDENT WORK

Lesson 3-1 • Reinforce Understanding

Understand Equal Groups

Name _____

When objects are in equal groups, multiplication helps you determine the total.

There are 4 pots with 2 flowers in each pot.
Each pot is one group. Each flower is one object.

4 equal groups of 2
 $4 \times 2 = 8$

Draw equal groups to represent the equation.

1. $3 \times 6 = 18$ Check student's drawings.

What multiplication equation matches the representations?

2. $5 \times 4 = 20$ 3. $3 \times 4 = 12$

What representation matches the equation?

4. $2 \times 4 =$ Check student's drawings.

8B Unit 3 • Multiplication and Division

Student Practice Book, pp. 25–26

INDEPENDENT WORK

Lesson 3-1

Additional Practice

Name _____

Review

You can multiply the number of equal groups by the number of objects in each group to find the total number of objects.

If Jay buys five 4-packs of batteries, he buys a total of 20 batteries. $5 \times 4 = 20$.

5 packs \times 4 batteries per pack = 20 batteries in all

How can you use a drawing to represent the equal groups?

1. 4 equal groups of 6
Sample answer: Draw 4 groups of 6 circles.

2. 5 equal groups of 2
Sample answer: Draw 5 groups of 2 circles.

3. 2 equal groups of 8
Sample answer: Draw 2 groups of 8 circles.

Workstation Kit

The Workstation Kit provides resources to support differentiated workstations or centers.

Game Station

A fun way to engage with the lesson content and collaborate with classmates



Application Station

Opportunity to apply unit content to real-world problems and projects. Application Station Cards include:

- STEM-Focused Projects
- Cross-Curricular Connections
- Real-World Problem-Solving



Digital Station

Digital opportunities to interact and practice include:

- Digital Games
- STEM Adventures
- Interactive Practice
- Spiral Review
- Take Another Look Mini-Lessons



Extend Thinking

Use it! Application Station

How Many Beats in a Song? Students analyze sheet music to determine the number of beats in each measure of a song. The content of this card has concepts covered later in Lesson 3-4. You may want to assign this card to students ready to explore content covered later in this unit.



Websketch Exploration

Assign a Websketch Exploration to apply skills and extend thinking.



Own it! Digital Station

Build Fluency Games.

Assign the digital game to develop fluency with addition and subtraction.




Spiral Review

Assign the digital Spiral Review Practice to students or download and print PDFs of the Spiral Review from the Digital Teacher Center.



Student Practice Book, pp. 25–26

- What multiplication equation represents the equal groups?

 $3 \times 7 = 21$
- Haley buys markers in packages of 4. How many markers are in 3 packages?
 a. How can you draw a picture to represent the problem?
Students should draw 3 groups of 4 objects.
 b. What equation represents the problem?
 $3 \times 4 = 12$
 c. What is the solution? Fill in the blank.
 There are 12 markers in 3 packages.
- Randy earns money from walking dogs. He earns \$5 for walking each of 6 dogs. How much does Randy earn? Explain how you know.
Sample answer: 6 equal groups of \$5 or $6 \times 5 = 30$. He earns \$30 walking dogs.
- Finn fills an order for boxes of nails at 4 construction sites. He orders the same number of boxes for each site. How many boxes of nails might he order? Explain how you know.
Sample answer: If Finn orders 6 boxes of nails for each site, he needs 24 boxes of nails. $4 \times 6 = 24$.



Find things around your home that come in packages, such as grocery items or batteries. Have your child write multiplication equations to trace the total number of objects in a certain number of packages.

Differentiation Resource Book, p. 26

Lesson 3-1 • Extend Thinking

Understand Equal Groups

- Name _____
- What are some different ways to show 12 objects in equal groups? Show at least two different ways. Write a multiplication equation for each way.

Check students' answers.

Check students' answers.
 - Mr. Lopez is buying socks for 4 grandchildren. There are 12 pairs of socks in a package. He will give each grandchild the same number of pairs of socks.
 a. How many pairs of socks can Mr. Lopez give to each grandchild?
Mr. Lopez can give each grandchild 3 pairs of socks.
 b. How many pairs of socks could Mr. Lopez give to each grandchild if each package had 16 pairs of socks?
Mr. Lopez could give each grandchild 4 pairs of socks.

Course Assessments: Monitor Student Understanding Throughout the Year

Reveal Math offers a comprehensive set of assessment tools that include diagnostic, formative, and summative tools.

TYPE	ASSESSMENT	HOW OFTEN	DESCRIPTION
Diagnostic	Course Diagnostic	Beginning of the school year	Diagnoses students' strengths and weaknesses with prerequisite concepts and skills for the upcoming year
	Unit Diagnostic	Beginning of each unit	Diagnoses students' strengths and weaknesses with prerequisite concepts and skills for the upcoming unit
Formative	Work Together	During a lesson	Assesses students' understanding of the concepts and skills presented in Learn
	Exit Ticket	End of each lesson	Assesses students' conceptual understand and procedural fluency with lesson concepts and skills
	Math Probe	During a unit	Identifies common misconceptions
Summative	Unit Assessment, Forms A and B	End of each unit	Evaluates students' understanding of and fluency with unit concepts and skills
	Unit Performance Task	End of each unit	Evaluates students' ability to apply concepts and skills learned
	Benchmark Assessments	After multiple units	Evaluates students' understanding of concepts and skills taught in multiple units
	End of the Year Assessment	End of the school year	Evaluates students' proficiency with concepts and skills taught over the school year

Print and Digital Formats

All assessments are available for either print or digital administration. Print Assessments can be found in the Assessment Resource Book or as downloadable PDFs in the Digital Center.

All digital assessment items, except for open response questions, are autoscored. Teachers can customize existing or create new assessments using additional item banks and item authoring tools.

Actionable Reports

Performance reports found in the Digital Teacher Center provide immediate feedback to teachers, allowing them to make data-driven instructional decisions.

Activity Performance Report: Teachers can review useful data points for class activities, including item analysis by student and class, as well as overall performance.

Standards Performance Report: Teachers can access information on class performance by standard, including a cumulative score by class and student, as well as the number of questions answered.

Auto-Recommended Intervention: Address Pre-requisite Skill Gaps

The Readiness Diagnostic accesses and aligns to pre-requisite skills that are critical to understanding the upcoming unit's content.

The screenshot shows a remediation dashboard with the following sections:

- Overview:** "You have 3 recommended remediations. Class remediation is triggered when at least 75% of students do not meet the pass criterion." View by: Student. Select: All Students Below Pass Criterion.
- Items and Standards:** 7 Items, 3 Standards.
- Student Details:** 2 Students below passing criterion of 6 out of 7 points.

Name	Item Score
Daley, Fir	3/7 points
Monet, Ambrose	0/7 points
- Remedy Resources:**
 - Guided Support: Add in Any Order:** Description: This teacher-directed lesson provides small group targeted intervention support to add in any order. (Learning Resource)
 - Skills Support: Add in Any Order:** Description: This printable worksheet provides targeted practice to address adding in any order they miss this skill on the Unit Assessment. (Learning Resource)

Data-informed remediations:

- Identify which student(s) needs extra support on specific skills.
- Provide skill-based remedy resources from which to intervene.

The page is titled "Guided Support" and includes the following sections:

- Materials:**
 - Two-color counters (20 per student)
 - Construction paper (5 pieces per student)
- Begin the Activity:**

Tell students that they will be making groups of objects. Distribute the counters and construction paper.

Write the following: 4 groups of 3 equal 12. Display the multiplication equation $4 \times 3 = 12$. Explain to students that the numbers being multiplied are called **factors**. The answer to the multiplication problem is called the **product**. Write these labels below the correct numbers in the equation. **What is the product in this example?**^[12]

Underline 4 groups and 4 in the multiplication equation. Ask students to use 4 pieces of construction paper to represent 4 groups. Have them lay out the 4 pages.

Underline of 3 and 3 in the equation. Explain that each group should have 3 objects. **How can you use counters to make groups of 3?**^[Sample answer: I can put 3 counters on each piece of paper.]

Guided Support provides a teacher-facilitated small group mini-lesson that uses concrete modeling and discussion to build conceptual understanding.

The page is titled "Equal Groups Word Problems (Equations)" and includes the following sections:

- Key Concept:**

Equal groups can help you solve multiplication and division word problems.

Rachel has 4 bowls. She puts 3 strawberries into each bowl.

How many strawberries altogether?

$4 \times 3 = ?$

number of groups (bowls) × number of items in each group (strawberries in each bowl) = total number of items (total strawberries)

Rachel has 12 strawberries altogether.
- Try It:**

There are 18 jars of peanut butter at the store. Each shelf holds 9 jars. How many shelves are needed?

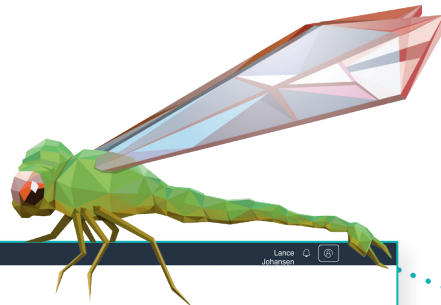
$18 \div 9 = ?$

Skills Support are skill-based practice sheets that provide targeted practice of previously taught items.

Integrate *MAP Growth*™ Data to Ensure Student Readiness

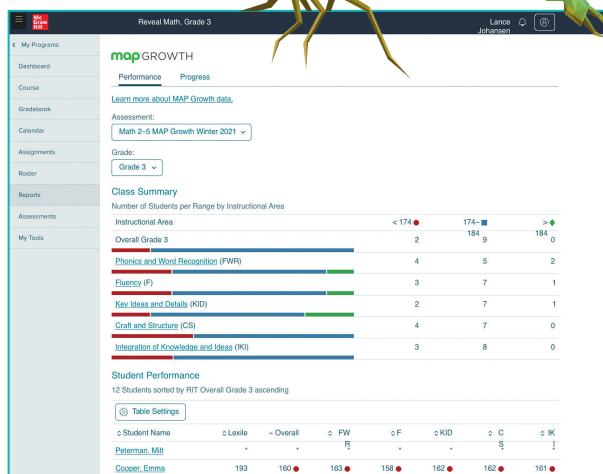
MAP Growth is the market's most trusted and accurate interim assessment that measures what students know and what they're ready to learn next. *MAP Growth* data now integrates with Reveal Math's digital platform, bringing powerful data into the teacher's day-to-day.

map GROWTH™



MAP Growth Data and Reveal Math Content allows teachers to:

- **Review** two unique reports that display RIT scores at both the overall and domain level.
- **Identify** which students may lack prerequisite knowledge by unit. Grouping recommendations help organize instruction.
- **Intervene** using Targeted Skill Paths to recommended groups in order to fill knowledge gaps prior to the starting unit.



Recommendations

MAP Growth Performance Report

Four Students (listed below) are **Approaching** and may not be ready for **Operations and Algebraic Thinking (OAT)** as well as **Numbers and Operations (NO)** covered in this Unit. Assigning a recommended resource (as seen below) can help prepare these students.

Bowers, Erica | Cooper, Emma | Morgan, Jody | Young, Charlie

Readiness Track: Multiplication and Division

Description: This adaptive module reinforces student understanding of the prerequisite skills needed to be successful when learning what it means to multiply and divide.

Visible to Students | Learning Resource

Assign

Recognize Misconceptions in the Moment

Math Probes, written by Cheryl Tobey, are designed to uncover students' misconceptions within every unit. These probes, placed at point-of-use, allow teachers to make sound instructional choices targeting specific mathematics concepts.

Short, Formative Assessment

Each Math Probe has three to four 2-part items:

- **Part One** assesses students' understanding of concepts.
- **Part Two** asks students to share their thinking about the concepts.

Unit 3
Estimation

Name _____

Four students showed their work to estimate this sum:
 $547 + 231 + 363$

Decide if each student's process provides a correct way to estimate the sum.

Student A

I added: $500 + 200 + 400$.
My estimate is 1,100.
Circle Yes or No.

Yes No

Explain why you chose Yes or No.

Student B

First I added the numbers.
 $547 + 231 + 363 = 1,141$
Then I rounded. My estimate is 1,140.
Circle Yes or No.

Yes No

Explain why you chose Yes or No.

Unit 3 • Add and Subtract Multi-Digit Numbers 83

Reflect On Your Learning

I'm confused. I'm still learning. I understand. I can teach someone else.

○ ————— ○ ————— ○ ————— ○

84 Math Probe • Estimation

Collect and Assess Student Work

Collect and review student responses to determine possible misconceptions. See examples in If-Then chart.

If incorrect...	THEN the student likely...	Sample Misconceptions
Student A: No	thinks that there is only one correct way to estimate a sum. For example, the student may think that you must round each number to the nearest 10. Watch for students who may calculate the exact answer (obtaining 1,141) and then round to the nearest 100 to obtain the estimate of 1,100 given by Student A.	<p>Student 1</p> <p>I added: $500 + 200 + 400$. My estimate is 1,100. Circle Yes or No.</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><i>Handwritten work: 547 + 231 + 363 = 1140</i></p> <p>Explain why you chose Yes or No. <i>I made a mistake by choosing a way to estimate.</i></p>
Student B: Yes	thinks that computing the exact answer and then rounding the result is a good strategy for estimating a sum.	<p>Student 2</p> <p>First I added the numbers. $547 + 231 + 363 = 1,141$ Then I rounded. My estimate is 1,140. Circle Yes or No.</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Explain why you chose Yes or No. <i>all of the regrouping is good and the answer.</i></p>
Student C: No	may think that rounding is the only correct way to estimate the sum. In this case, the student may not realize that using compatible numbers is another estimation strategy.	<p>Student 3</p> <p>I found this sum: $500 + 200 + 375$. My estimate is 1,000. Circle Yes or No.</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Explain why you chose Yes or No. <i>if you add all the hundreds up they you get 1,000. if you add tens it would be over.</i></p>
Student D: Yes	may not understand what it means to estimate since the student identifies an exact calculation as an estimate.	<p>Student 4</p> <p>I found three sums, decomposing the hundreds, tens, and ones. Then I added these sums. $500 + 200 + 300 = 1,000$ $40 + 20 + 10 = 70$ $7 + 7 + 3 = 17$ My estimate is 1,140. Circle Yes or No.</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Explain why you chose Yes or No. <i>I chose yes because yes it is a reasonable answer.</i></p>

Many of the above difficulties result in a combination of correct and incorrect responses. For correct responses, be sure to check for sound reasoning.

Take Action

Choose from the following resources or suggestions:

- Revisit the estimation strategies reviewed and developed in Lesson 3–1, such as rounding and compatible numbers.
- Discuss situations where estimating is more efficient than computing an actual sum. Provide problem situations that call for an estimate rather than an exact computation.
- Have students share estimation strategies, allowing them to access others' thinking.
- Have students estimate computations prior to computing an exact answer to check for reasonableness.

Revisit the Probe After additional instruction, have students review their initial answers to the probe. Use these questions for discussion:

- Are there any answers you would like to change?
- Explain why you might want to change them.
- Are there any questions that you still have about any of the items on this probe?

Metacognitive Check Reflect on Your Learning allows students to think about their level of understanding of the lesson content on a scale of 1 to 4 with 4 being the highest confidence.

Math Probe 84A

Reflect on Your Learning

At the end of the Probe, students evaluate their understanding of the concepts they are learning. This self-evaluation offers teachers another data point to gauge students' understanding of the concepts.

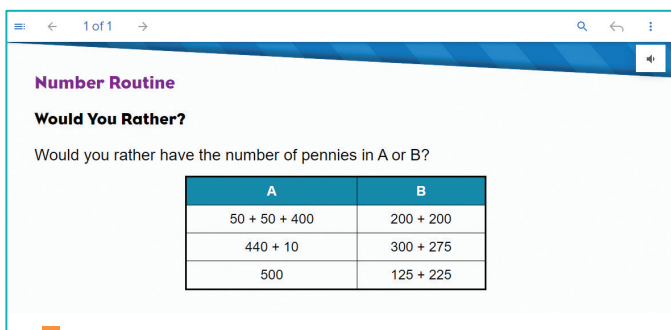
Designed to ACT

The teacher support materials that accompany the Math Probes are designed around an ACT cycle—**Analyze** the Probe, **Collect** and Assess Student Work, and **Take Action**. Authentic student sample responses help identify the misconception. Provided remedies help teachers correct misconceptions quickly and efficiently.

Fluency Supports Throughout the Unit

Fluency is not just about memorization; it is about having a working understanding and mastery of operations, relationships, and concepts. *Reveal Math* speaks to all the elements of fluency throughout each unit.

Daily Fluency Activities



Number Routine
Would You Rather?
Would you rather have the number of pennies in A or B?

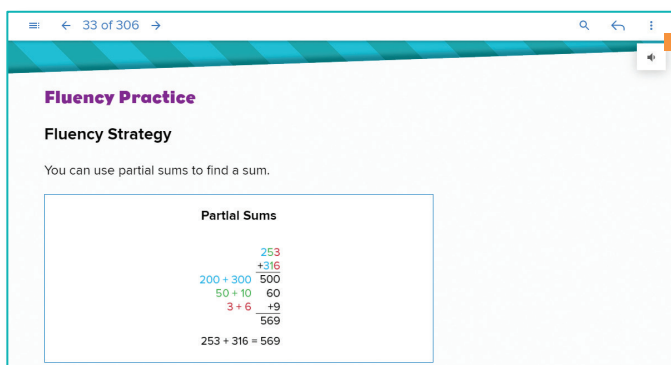
A	B
$50 + 50 + 400$	$200 + 200$
$440 + 10$	$300 + 275$
500	$125 + 225$

Number routines develop a strong number sense and promote an efficient and flexible application of strategy to solve unknown problems. Students use discussion and reasoning to help make the most of the previously learned strategy.



Spiral Review and Digital Games provide ample practice of previously learned content to develop proficiency and fluency throughout the year.

Unit Fluency Practice



Fluency Practice
Fluency Strategy
You can use partial sums to find a sum.

Partial Sums	
	253
	+316
200 + 300	500
50 + 10	60
3 + 6	+9
	569
253 + 316	= 569

Fluency Practice is available for each unit in both the print and interactive Student Edition. Based on:

- **Fluency Strategy** – focus on practice with the strategy
- **Fluency Flash** – a check for understanding
- **Fluency Check** – students utilize whichever strategies they are most comfortable using
- **Fluency Talk** – students share their responses and communicate their understanding

Language Supports Throughout the Unit and Lesson

Reveal Math was developed around the belief that mathematics is not just a series of operations, but a way of communicating—listening, speaking, reading, writing, and most importantly, thinking. All students can benefit from support designed to develop and promote the use of mathematical language.

MLD

Math Language Development

The **Math Language Development** feature offers insights into one of the four areas of language competence—reading, writing, listening, and speaking—and strategies to build students’ proficiency with language.

EL

English Learner Scaffolds

English Learner Scaffolds are based on WIDA levels and provide teachers with scaffolded instruction to help students make meaning of math vocabulary, ideas, and concepts in context.

Language Objectives

In addition to a content objective, each lesson has a **language objective** that identifies a linguistic focus of the lesson for all learners. The language objective also identifies the math language routines of the lesson.

LOM

Language of Math

Language of Math promotes the development of key vocabulary terms that support how we talk about and think about math in the context of the lesson content.

MLR

Math Language Routines

Designed by Stanford Center for Assessment, Learning, and Equity, the following Math Language Routines occur in every lesson during Explore and Develop to promote the use of mathematical language.

- MLR1: Stronger and Clearer Each Time
- MLR2: Collect and Display
- MLR3: Critique, Correct, and Clarify
- MLR4: Information Gap
- MLR5: Co-Craft Questions and Problems
- MLR6: Three Reads
- MLR7: Compare and Connect

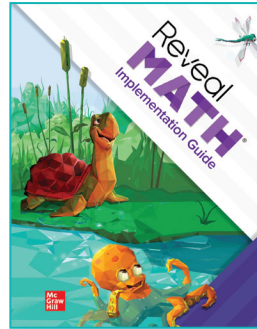
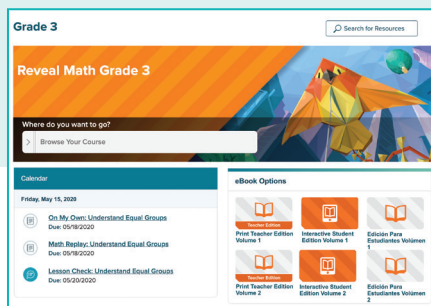


Program Components: Teacher

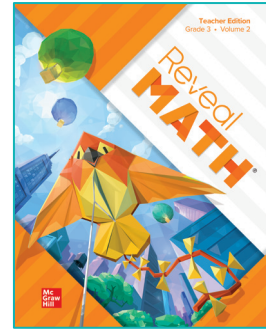
Teacher Digital Experience

Teachers have access to an intuitive and easy-to-use platform from which to plan and implement engaging instruction. The teacher experience includes:

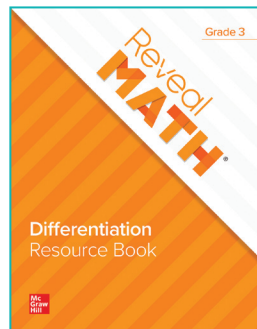
- Daily interactive lesson presentations
- Engaging, rich differentiation resources
- Auto-scored practice and assessment items
- Customizable assessments and item banks
- Teacher and administrator data and reporting
- Professional development workshops and videos
- Unit and lesson files that can be downloaded with one click
- Ability to add resources, including presentations, website links, and more
- Classroom management and grouping tools



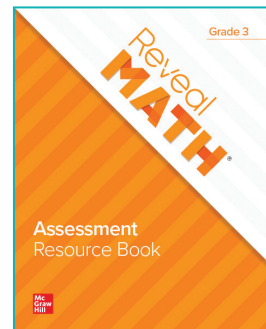
Implementation Guide



Teacher Edition, 2-volume



Differentiation Resource Book

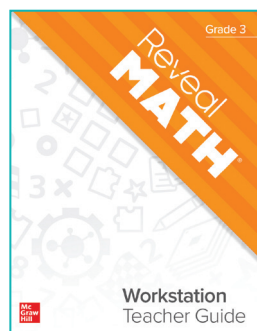


Assessment Resource Book

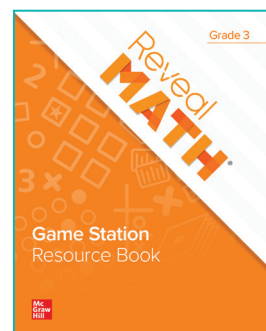
Workstation Kit



Application Station Cards

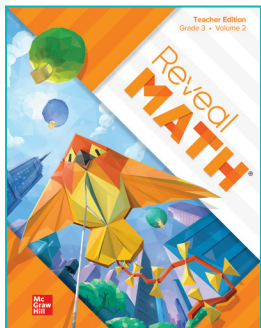


Workstation Teacher Guide

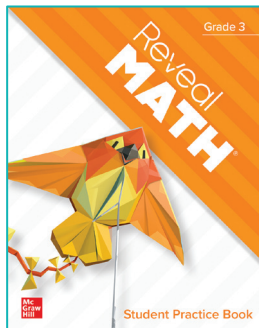


Game Station Resource Book

Program Components: Student



Student Edition,
2-volume



Student Practice Book

Student Digital Experience

Students have access to a robust set of engaging digital tools and interactive learning aids, including:

- Interface designed for elementary students
- Interactive Student Edition
- Daily interactive practice with embedded learning aids
- Online assessments with interactive item types
- Digital games designed for purposeful practice
- Instructional mini-lessons to reinforce understanding
- Rich exploratory STEM Adventures
- Visual and dynamic WebSketch activities
- Animations, videos, and eTools

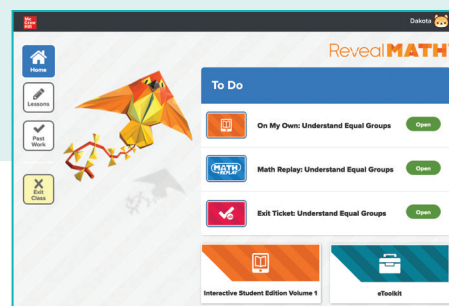
Spanish Components



Student Edition,
2-volume



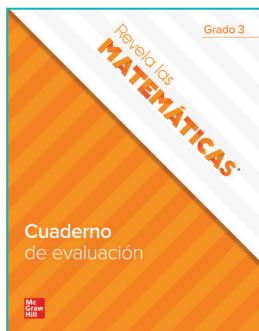
Student Practice Book



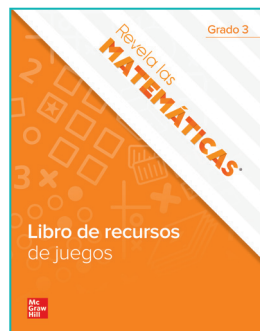
Workstation Kit



Differentiation
Resource Book



Assessment
Resource Book



Game Station
Resource Book



Application Station Cards

Reveal**MATH**[®]

www.mheducation.com.sg/reveal-math/gradesk-5