

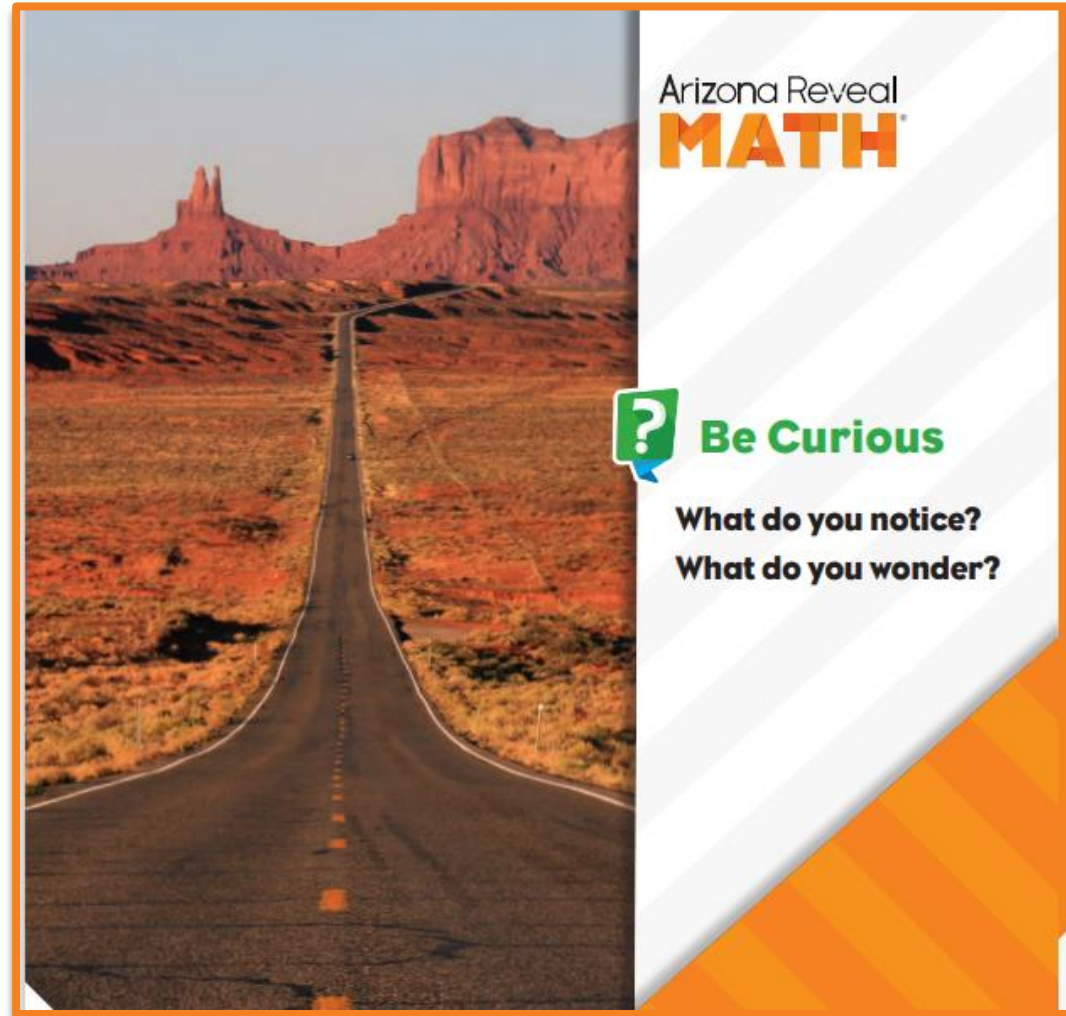


Arizona Reveal
MATH®

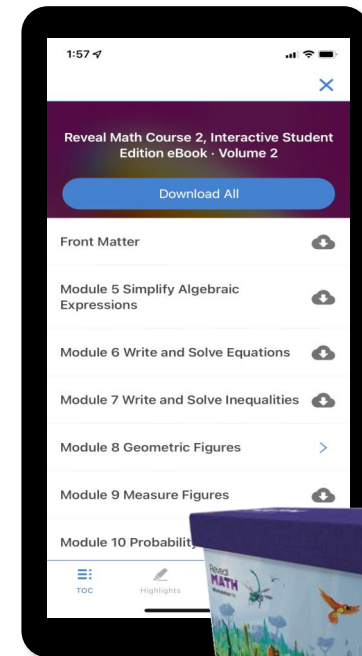
Reveal the full potential in
every learner!



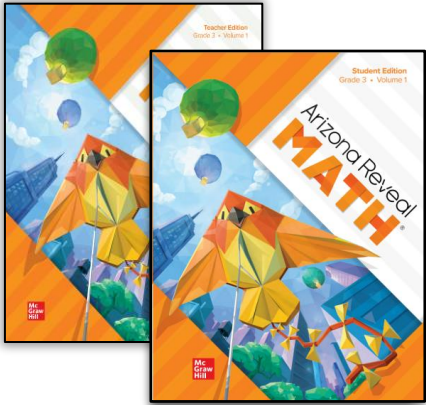
What do you notice? What do you wonder?



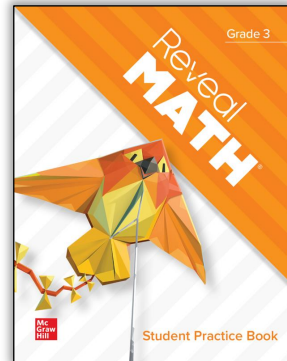
Comprehensive Learning Solution



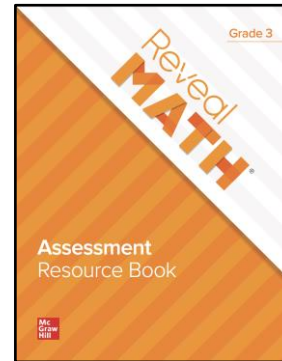
Robust Print and Digital Experience



Consumable Student Editions



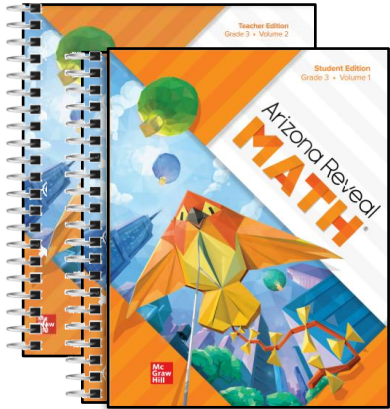
Consumable Student Practice Book



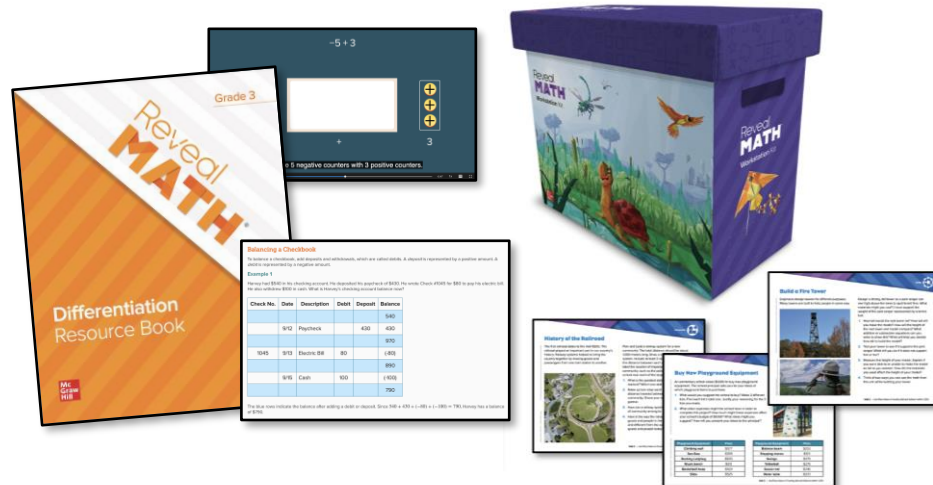
Assessment Resource Book



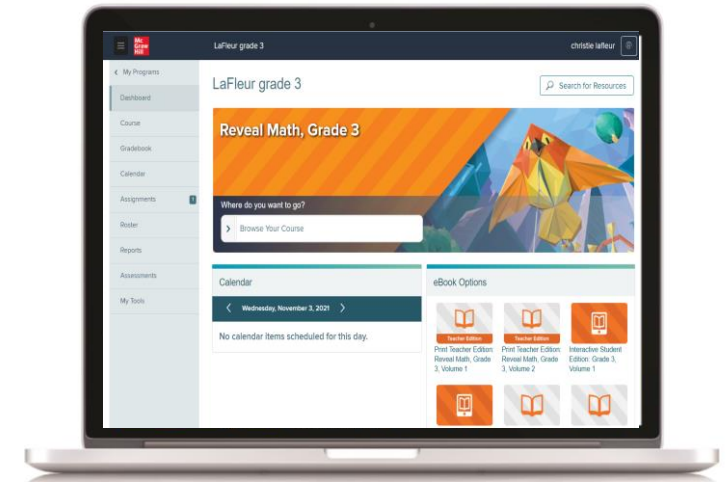
Manipulative Kits



2 Volume Teacher Edition

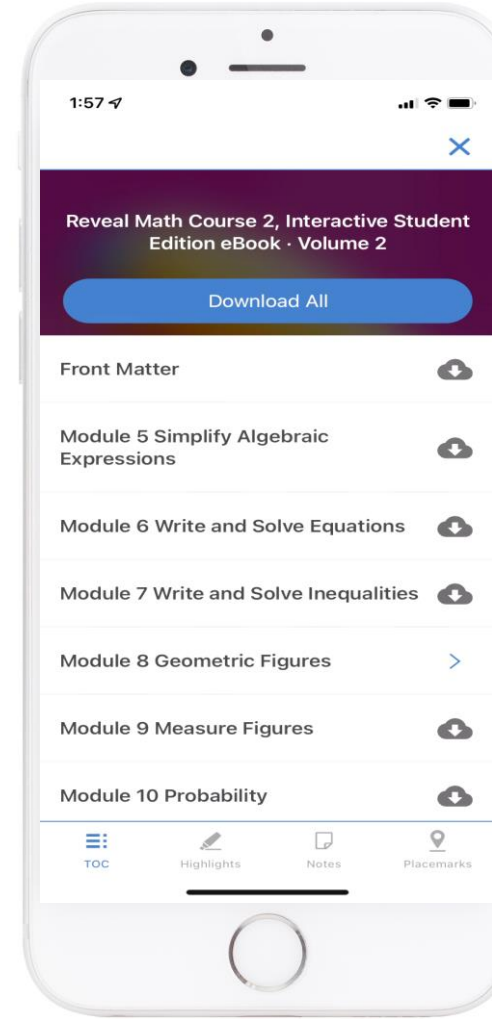
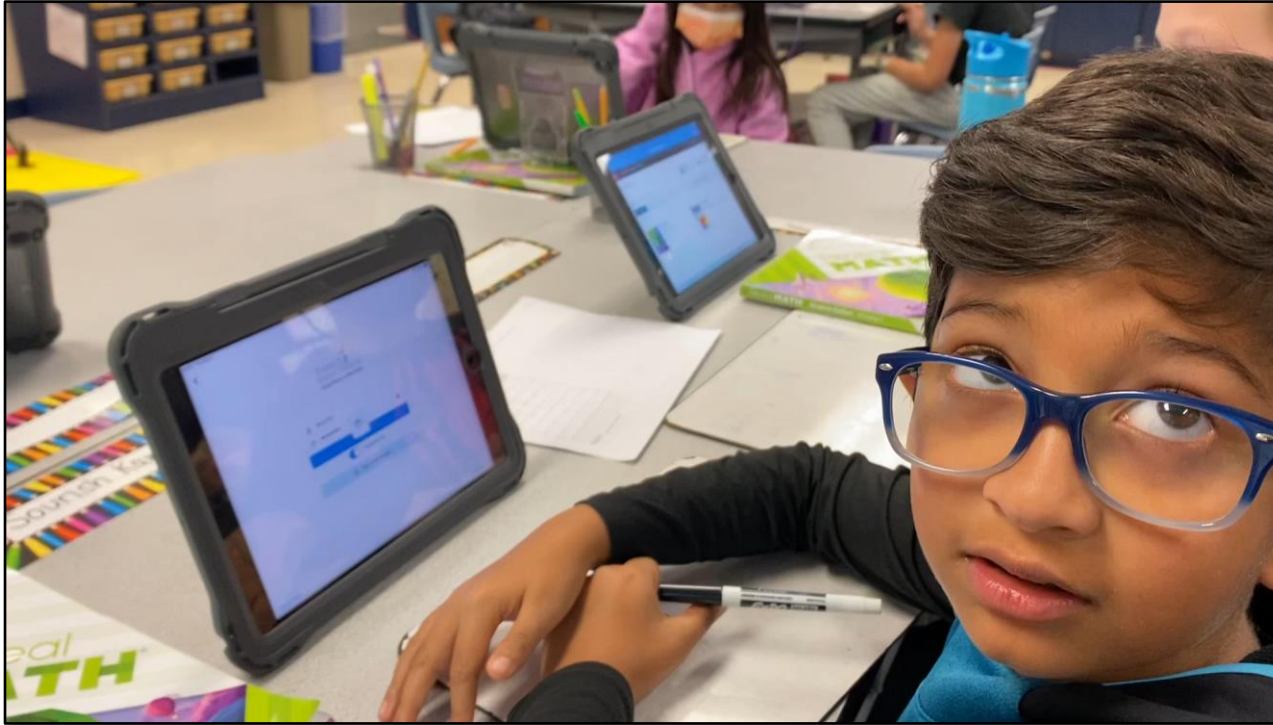


Ready Made Daily Differentiation



Personalized Learning & Digital Resources

Access Anytime – No Internet Connection Needed!



McGraw Hill K-12 Portal



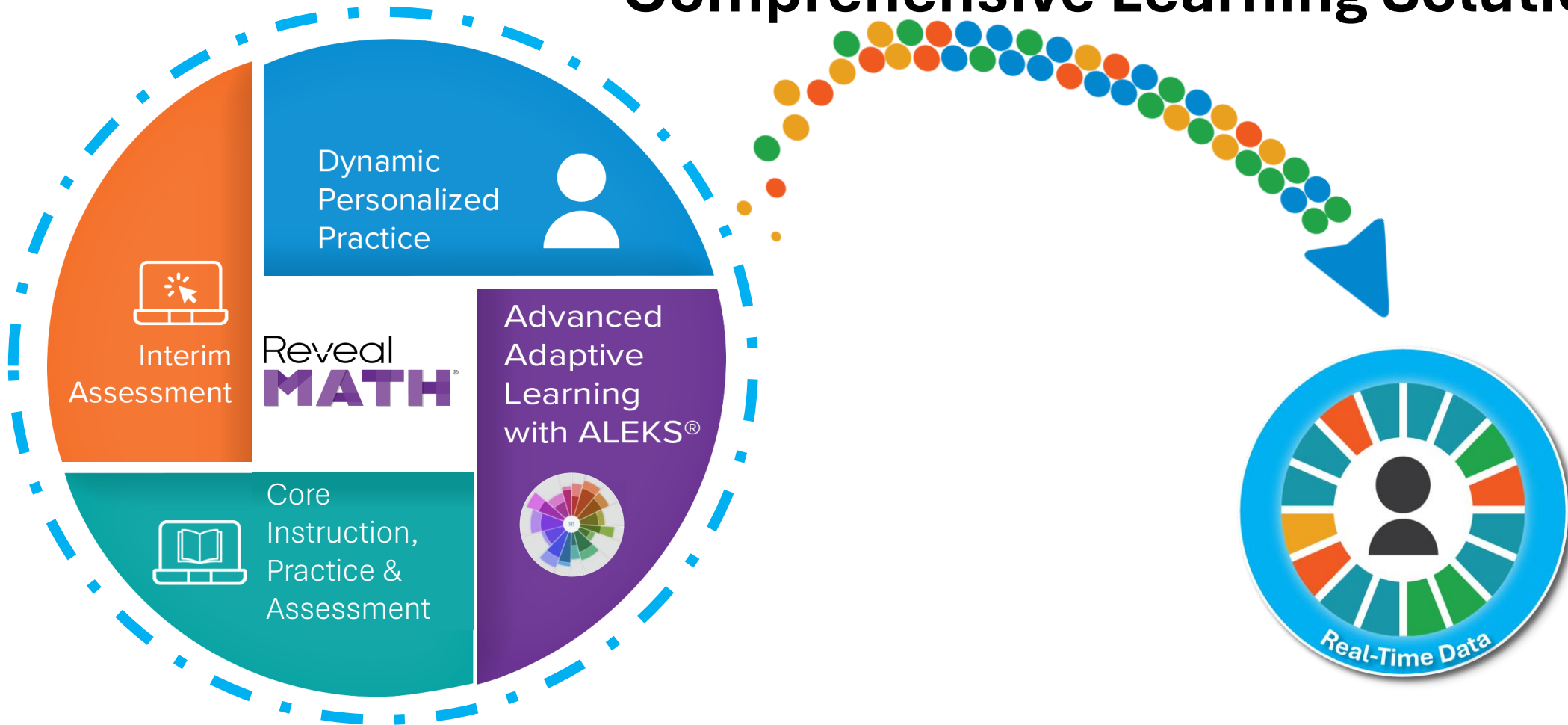
Support for 243
Languages+

Smartphone, Chromebook,
iPad or Tablet

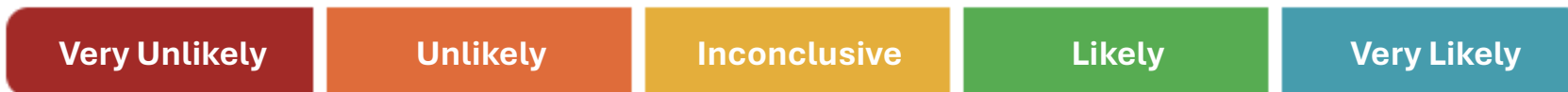
Integrate Reveal Math With Your LMS



Comprehensive Learning Solution



Overall Proficiency



Projected State Assessment Proficiency

Personalizing Math in a Primary Classroom



00:00:00

00:02:25



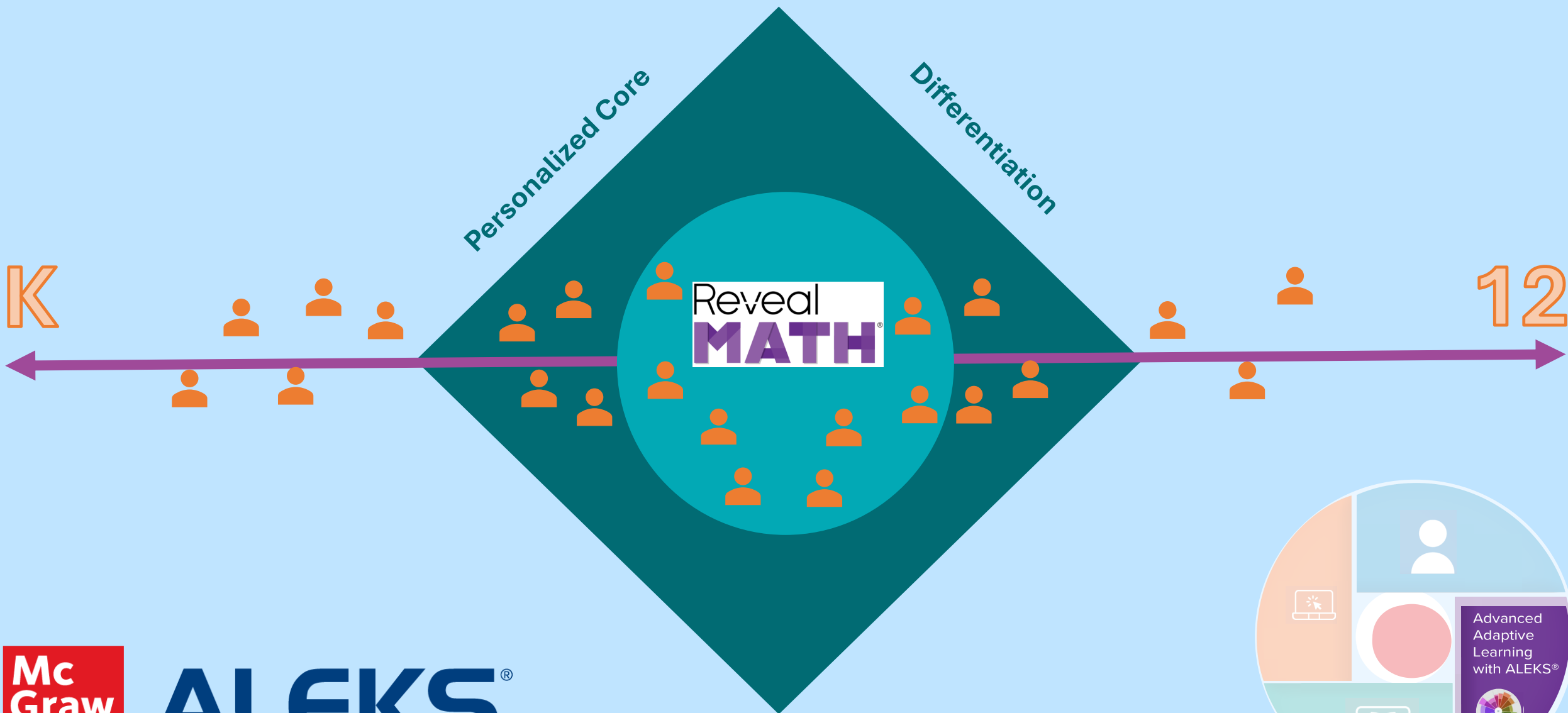


0:00 / 2:25



Search





Reveal Math's Adaptive Learning Tool



Reveal
MATH®



ALEKS is an online mathematics learning system that uses adaptive skill assessment and artificial intelligence to continuously cater instruction to each learner's strengths, knowledge gaps, and style.

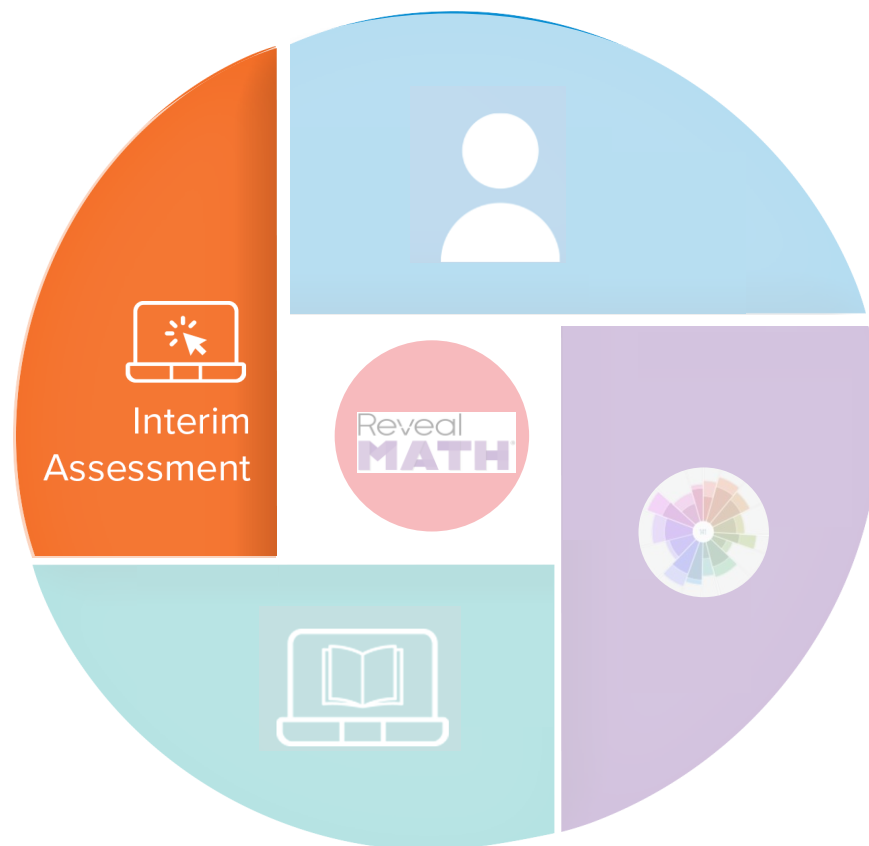




PRoPL

Math Interim Assessment Suite

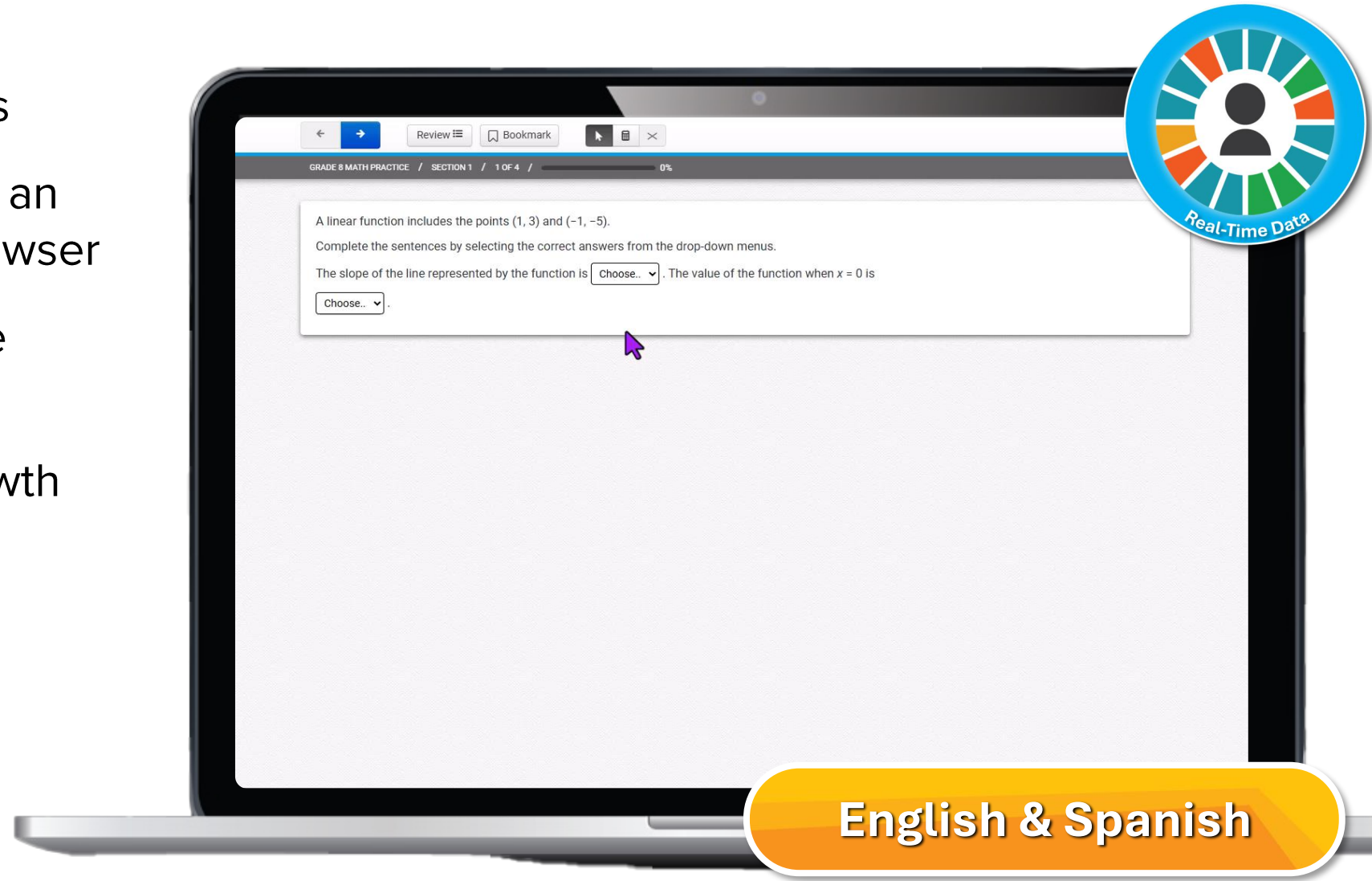
Pearson Review of Progress and Learning



PROPL

Math Interim Assessment Suite

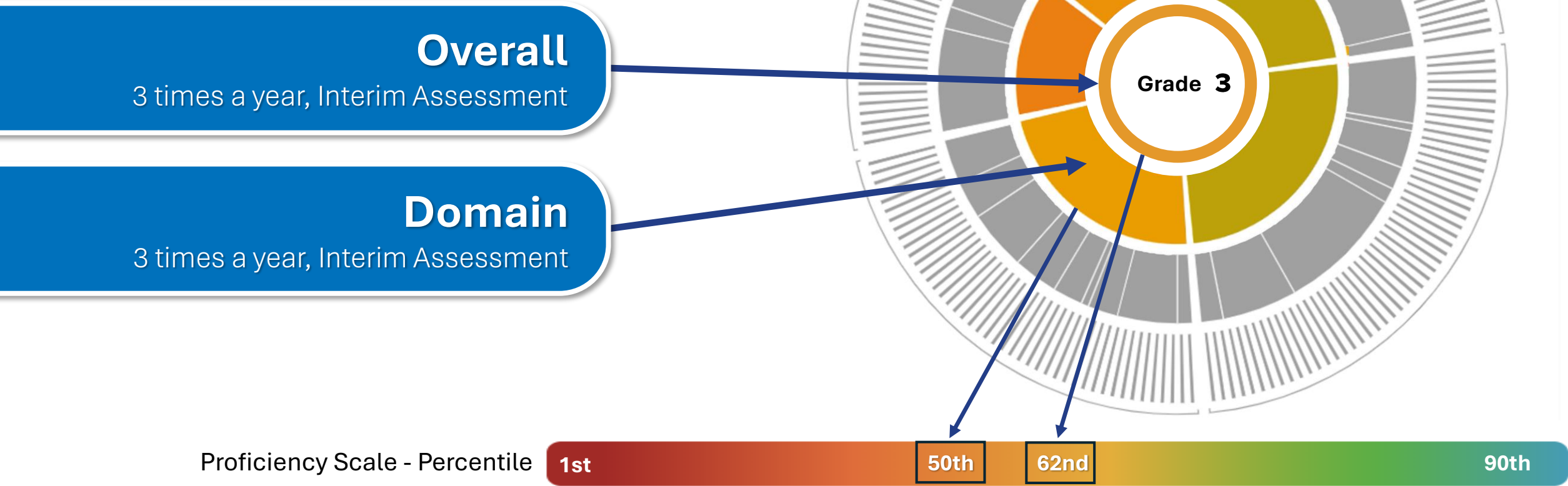
- ✓ Aligned to the Standards
- ✓ Benchmark Progress with Norm-Referenced Interims
- ✓ Ensures test integrity with an Embedded Lockdown Browser
- ✓ Adapts in Real Time at the Item Level
- ✓ Surfaces Strengths & Growth Areas in just 30 Minutes
- ✓ Confidently Predicts State Assessment Performance



English & Spanish

Proficiency Graph

Multiple Data Sources Pulled Into One Location
Clear Picture of Class & Student Learning



Proficiency Graph

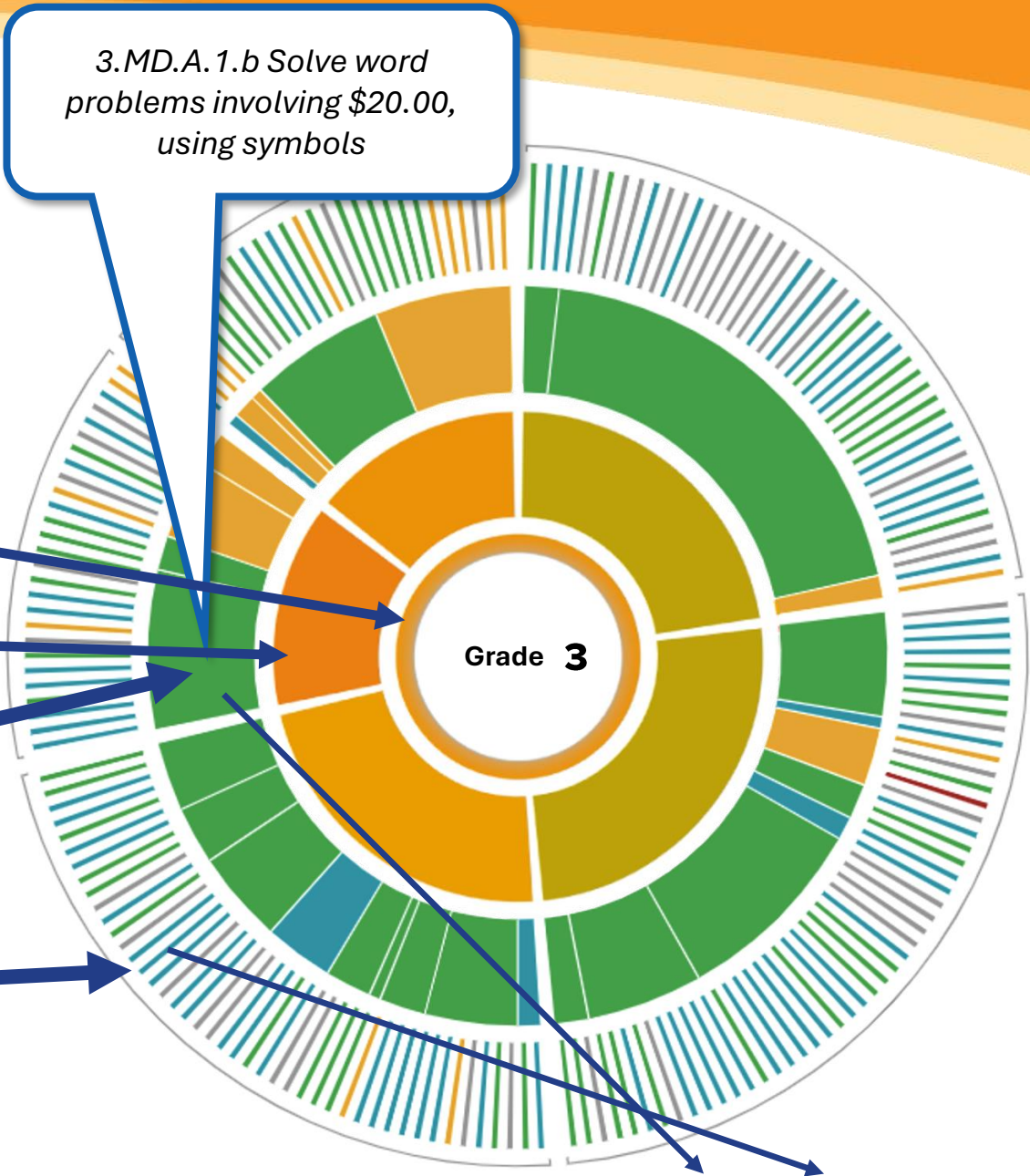
Multiple Data Sources Pulled Into One Location
Clear Picture of Class & Student Learning

Overall

Domain

Standard
Daily, Core Practice & Assessment, ALEKS

Skill
Daily, Core Practice & Assessment, ALEKS



Proficiency Graph

Multiple Data Sources Pulled Into One Location

Clear Picture of Class & Student Learning

- ✓ **In Real Time**
- ✓ **Over Time**
- ✓ **Year to Year**

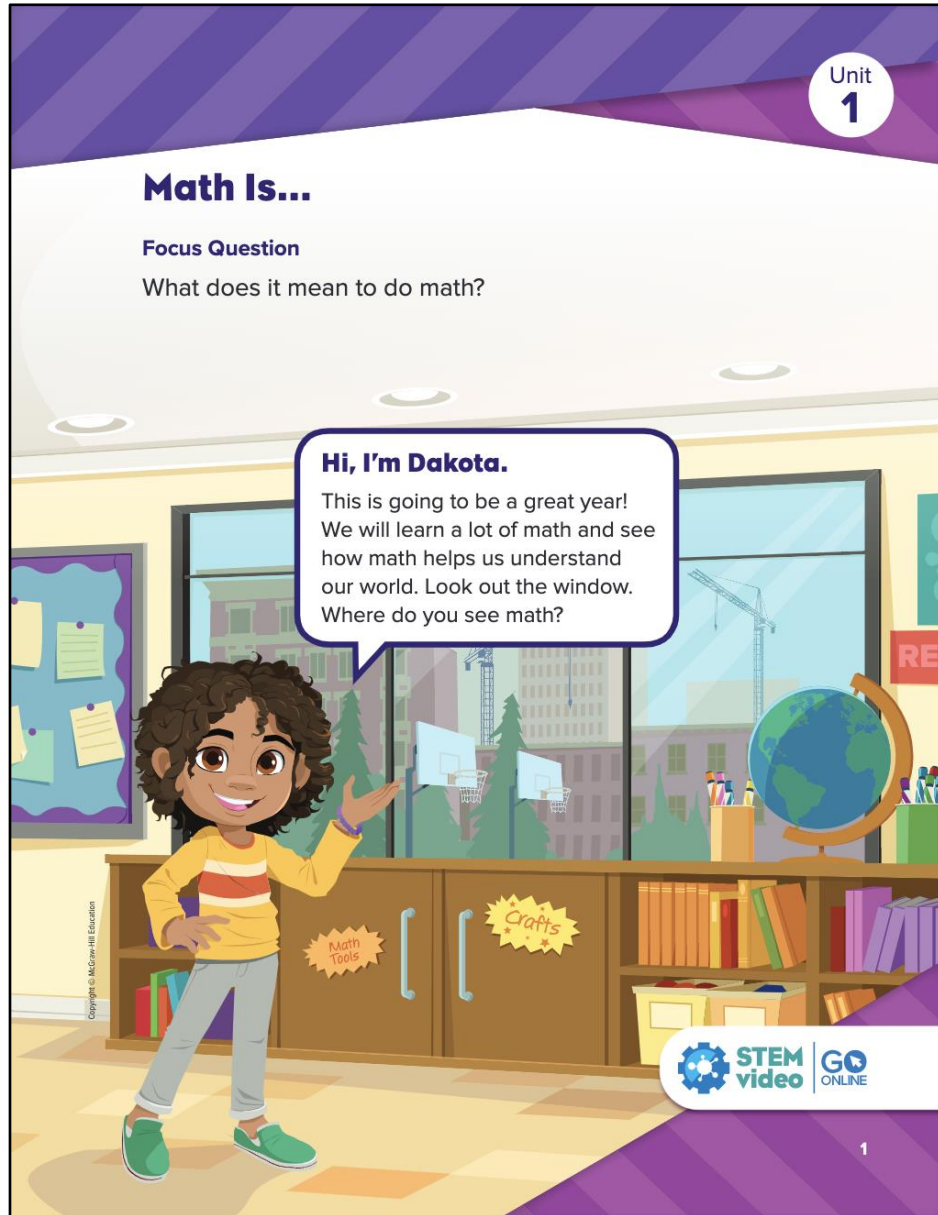


Comprehensive Learning Solution

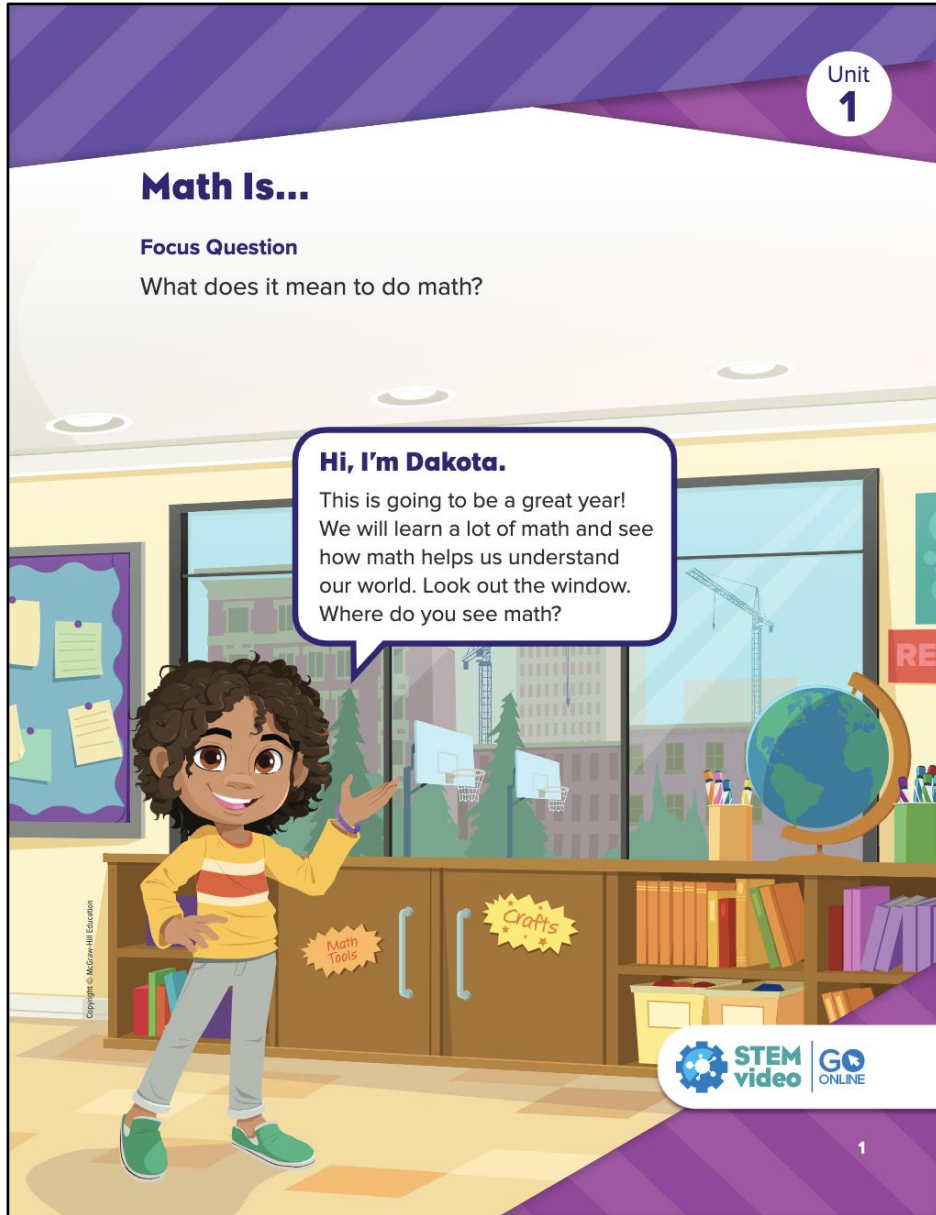




Unit 1: Math Is...



Unit 1: Math Is... Developing a Productive Mathematical Disposition



Unit 1

Math Attitude Survey

Name _____

- I can see math in the world around me.
I agree I'm not sure I disagree
☐ ————— ☐ ————— ☐
- Math is about explaining your thinking.
I agree I'm not sure I disagree
☐ ————— ☐ ————— ☐
- Math is about solving equations quickly.
I agree I'm not sure I disagree
☐ ————— ☐ ————— ☐
- I am good at math.
I agree I'm not sure I disagree
☐ ————— ☐ ————— ☐
- Math is something I will need when I grow up.
I agree I'm not sure I disagree
☐ ————— ☐ ————— ☐
- Everyone can be good at math.
I agree I'm not sure I disagree
☐ ————— ☐ ————— ☐

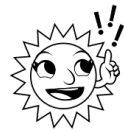
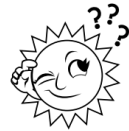
Math Attitude Survey: Kindergarten Example

Unit 1

Math Attitude Survey

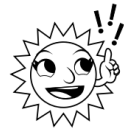
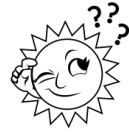
Name _____

1



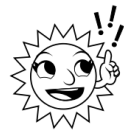
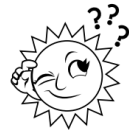
I see math in my house.

2



Math is about talking.

3



Math is about numbers.

Directions: Do you understand? Circle to show your understanding? 1. I see math in my house. 2. Math is about talking. 3. Math is about numbers.

1

Draw a picture to show
what math is for you.

Directions: What is math for you? Draw a picture to show what math is for you.

Unit 1: Math Is... Developing a Productive Mathematical Disposition

Unit
1

Math Is...

Focus Question
What does it mean to do math?

Hi, I'm Dakota.
This is going to be a great year!
We will learn a lot of math and see
how math helps us understand
our world. Look out the window.
Where do you see math?

Copyright © McGraw-Hill Education

Math Tools Crafts

STEM video GO ONLINE

1

Be Curious

What do you notice?
What do you wonder?



Mathematical Practices

I know:

- The two numbers have a sum of 100.
- The numbers do not have zeros.
- I can write an equation.

$$\square + \square = 100$$

Math is... **Analyzing**

What do I know about the problem?

Learn

Heather added two 2-digit numbers.
There wasn't a zero in either number.

$$\square + \square = 100$$

What could be the numbers Heather added?

I can ask:

- What two addends sum to 100?
- Can the two numbers be 50 and 50?
Or 60 and 40?

$$60 + 40 = 100$$

No, because those numbers have zeros.

Math is... **Planning**

What questions can I ask myself about the numbers?

When we do math, we work to solve problems but sometimes the first try doesn't work. We keep trying and don't give up.

I can think about different numbers to try.

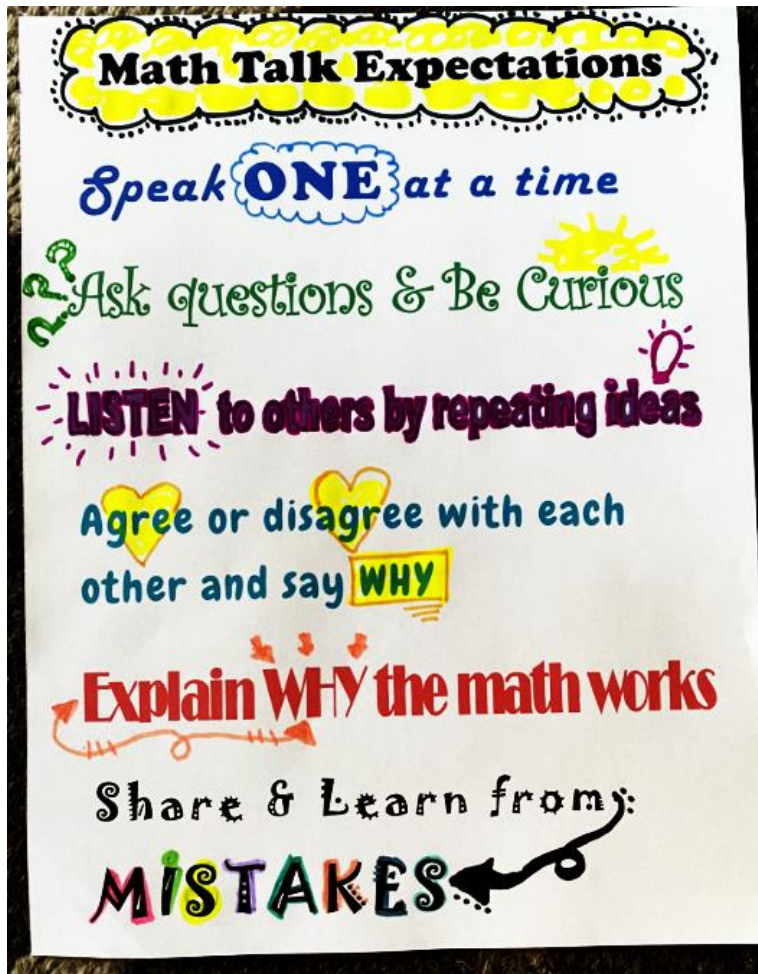
$$59 + 41 = 100$$

Math is... **Perseverance**

What is another way to think about the problem?



Unit 1: Math Is... Developing a Positive Learning Environment



Unit Structure

Openers:



STEM



Readiness Diagnostic

8-1: Equivalent Fractions

8-2: Generate Equivalent Fractions using Models

8-3: Generate Equivalent Fractions using Number Lines

8-4: Compare Fractions using Benchmarks

8-5: Other Ways to Compare Fractions

Math Probe



Reveal Math Difference

Collect and Assess Student Work

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

IF incorrect... THEN the student likely... Sample Misconceptions

- | IF incorrect... | THEN the student likely... | Sample Misconceptions |
|----------------------|---|---|
| 1. >
2. <
3. > | overgeneralizes from whole number comparisons by comparing the numerators and/or denominators and chooses the fraction that contains "larger" numbers as being the larger fraction. | <p>1. $\frac{3}{8} \square \frac{4}{7}$</p> <p>Circle the symbol that goes in the $\square$.</p> <p>> < =</p> <p>Explain or show why you chose that symbol.</p> <p>eight is greater than seven.</p> |

1. $\frac{3}{8} \square \frac{4}{7}$

Circle the symbol that goes in the $\square$.

> < =

Explain or show why you chose that symbol.

eight is greater than seven.

Unit 8

Comparing Fractions



Name _____

For each problem, use >, <, or = symbol to show how the fractions compare.

1. $\frac{3}{8} \square \frac{4}{7}$

Circle the symbol that goes in the $\square$.

> < =

Explain or show why you chose that symbol.

Explanations may vary.

2. $\frac{2}{3} \square \frac{4}{6}$

Circle the symbol that goes in the $\square$.

> < =

Explain or show why you chose that symbol.

Explanations may vary.

Take Action

Unit Structure

Openers:  STEM  Readiness Diagnostic	
8-1: Equivalent Fractions 8-2: Generate Equivalent Fractions using Models 8-3: Generate Equivalent Fractions using Number Lines 8-4: Compare Fractions using Benchmarks 8-5: Other Ways to Compare Fractions	
Math Probe 	Reveal Math Difference
Fluency Unit Review Performance Task Unit Assessment (2 Forms)	

Pacing: 9 Days

Suggested Pacing:

- 1 day per lesson
- Up to 4 Days for Openers, Review, & Assessment

Unit Structure

Build Fluency Objective Students practice using an algorithm to subtract without any regrouping.

Fluency Progression

Unit	Skill
1	Use Partial Sums (Within 1,000)
2	Decompose by Place Value to Subtract (Within 1,000)
3	Multiply by 2, 5, and 10
4	Multiply by 4 and 8
5	Multiply by 3 and 6
6	Multiply by 7 and 9
7	Use an Algorithm to Add (No Regrouping)
8	Use an Algorithm to Subtract (No Regrouping)
9	Use an Algorithm to Add (With Regrouping)
10	Use an Algorithm to Subtract (With Regrouping)
11	Choose a Strategy to Add
12	Choose a Strategy to Subtract

- ✓ Fluency Strategy
- ✓ Fluency Flash
- ✓ Fluency Check
- ✓ Fluency Talk

Fluency Expectations

Grade 3

- Add and subtract within 1,000.
- Multiply and divide within 100.

Grade 4

- Add and subtract within 1,000,000.

Grade 5

- Multiply multi-digit whole numbers.

Unit Structure

Unit Overview

Focus

Equivalence and Comparison of Fractions

In this unit, students use visual representations to recognize equivalent fractions, noticing the relationship between the number of the whole and the number of parts that represent each fraction. They notice this relationship to the numerical process of multiplying and dividing a fraction by the same non-zero whole number to generate an equivalent fraction.

Students work with a few strategies for comparing fractions. They use the benchmark numbers 0, $\frac{1}{2}$, or 1 to decide how the fraction compares to each other. Students can also generate equivalent fractions for both fractions so that the fractions have the same numerator or denominator.

Coherence

What Students Have Learned

- Students recognized and generated simple equivalent fractions using visual representations. They expressed whole numbers as fractions and recognized fractions that are equivalent to whole numbers. (Grade 3)
- Students compared two fractions with the same numerator or the same denominator by reasoning about their size. (Grade 3)

What Students Will Learn

- Students will use visual models to compare fractions.
- Students will use symbols to compare fractions.

Rigor

Conceptual Understanding

Students develop understanding of:

- the numerical process of multiplying and dividing a fraction by the same non-zero whole number results in an equivalent fraction;
- how benchmark numbers, such as 0, $\frac{1}{2}$, and 1, can be used to compare the sizes of two fractions;

Procedural Skill

- Students will recognize equivalent fractions.
- Students will compare fractions and different fractions.



Effective Teaching Practices

Support Productive Struggle in Learning Mathematics

Struggle is part of learning. This is especially true in mathematics. Teachers might believe they do students a favor by taking out the struggle. Productive struggle promotes the deep learning we seek for students because it forces a more thorough, active kind of engagement. The teacher provides support for students and performs the following actions:

- Anticipates struggles students may have during the lesson and has a plan to help students work productively through their struggle
- Asks questions that help students reason through a task
- Creates a culture in which mistakes and errors are viewed as a part of the learning process

The student is engaged in problem solving and performs the following actions:

- Asks questions that help them understand the task and continue to work towards a solution
- Demonstrates perseverance by continuing to try when they are unsure about how to proceed
- Recognizes struggles in their classmates and provides support without giving away a solution or a solution method



Math Practices and Processes

Use Appropriate Tools Strategically

When mathematically proficient students look at a problem, they can decide which tools they will use to represent the problem and find a solution. Students are flexible with their choices and know the benefits of one tool versus another and of combining tools to better understand problems and justify solutions.

During the course of a lesson, the teacher should let students explore a problem on their own or in pairs using tools and approaches of their own choosing.

A goal in teaching is to have students be able to switch between tools and/or transition from one tool to another—for example, from concrete manipulatives to equations. This flexibility is an indication that a student

In this unit, a goal is for students to be able to represent problems using fraction models, number lines, and paper strips and to be able to manipulate these using their knowledge of fractions and the concepts of fraction equivalence and comparison.

Further, students should be able to apply these representations to write equations or other symbolic/numeric constructions, work with them symbolically, and understand the connections between their work with these and all other representations.

Unit Structure

Unit Routines

Number Routines

Build Fluency The number routines found at the beginning of each lesson help students build number sense and operational fluency. They also help students develop important skills that are important for proficiency.

Where Does It Fit?

Purpose: Build estimating skills.

Overview: Students partition a number line to find endpoints and justify the target number may be.

About How Much?

Purpose: Build estimating skills.

Sense-Making Routines

Notice & Wonder: How are they the same? How are they different?

(Lesson 8-1) Students are presented with half of a pineapple slice cut into equal pieces in different ways. The purpose of this routine is to get students thinking about how the same amount can be shown using a different number of parts and different-sized parts.

Which doesn't belong? (Lesson 8-2) In this lesson, students make sense of the multiplicative relationship between the numerators and denominators of equivalent fractions. The purpose of this routine is to get students thinking about how the same amount can be shown using a different number of parts and different-sized parts. **Mathematical goal is to understand equivalent fractions.**

Notice & Wonder: What do notice? What do you wonder?

(Lesson 8-3) Students are presented with rulers whose units are partitioned in different ways. The purpose of this routine is to get students thinking about how marks on a ruler can represent fractions with different denominators and connect this with a number line representation in the lesson.

Notice & Wonder: What do you see? (Lesson 8-4) Students are presented with a number line and asked to identify the fraction represented by the mark.

Math Language Routines

The Mathematical Language Routines used in this unit give teachers a structured, yet adaptable format for amplifying and developing students' social and academic language. For more information on the Math Language Routines, see the Appendix.

- Unit 8-1 – In order to optimize output, students participate in MLR7: Compare and Connect so that their meta-awareness is fostered as they compare and contrast using fraction strips or number lines to determine the same amounts.
- Unit 8-2 – In order to support sense-making, students participate in MLR2: Collect and Display.

- Unit 8-3 – In order to maximize meta-language, students participate in MLR5: Co-Craft Questions and Problems.
- Unit 8-4 – In order to support sense-making, students participate in MLR8: Discussion Supports.
- Unit 8-5 – In order to cultivate conversation, students participate in MLR3: Critique, Correct, and Clarify.

Professional Learning Library

Making the Most of... Ignites



What are Ignite! Activities?
Description: In this video, contributing author Raj Shah, Ph.D., explains what an Ignite! activity is, versus what an Ignite! activity is not.

Video

Assign

Add to presentation ☒



Introduction to Ignite! Activities
Description: In this video, contributing author Raj Shah, Ph.D., explains the purpose, structure, and design of Ignite! activities in Reveal Math.

Video

Assign

Add to presentation ☒



The Purpose of Ignite! Activities
Description: In this video, contributing author Raj Shah, Ph.D., and participants from the hands-on workshop reflect on the purpose of Ignite! Activities.

Video

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Ignite! Activities: Best Practices
Description: In this video, contributing author Raj Shah, Ph.D., explains three best practices for implementing Ignite! activities in the classroom: spark curiosity, allow for productive struggle, and promote meaningful mathematical discussions.

Video

Assign

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Ignite! Activities: Flexibility
Description: In this video, contributing author Raj Shah, Ph.D., explains the flexibility of the Ignite! Activities.

Video

Assign

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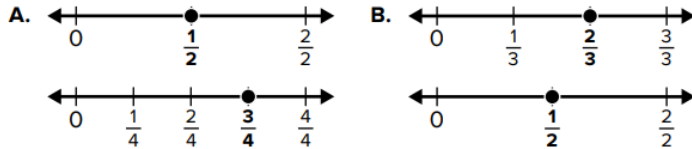


Readiness Diagnostic Assessments

How Ready Am I?

Name _____

1. Which representation shows equivalent fractions?

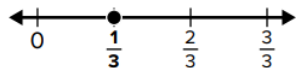


2. Which fraction represents the shaded part of the rectangle?



- A. $\frac{2}{4}$ B. $\frac{3}{4}$
C. $\frac{4}{4}$ D. $\frac{1}{4}$

3. Which fraction is equivalent to the given point?



- A. $\frac{2}{6}$ B. $\frac{1}{6}$
C. $\frac{3}{6}$ D. $\frac{4}{6}$

4. Which fraction is equivalent to $\frac{6}{8}$?

- A. $\frac{3}{4}$ B. $\frac{1}{4}$
C. $\frac{4}{4}$ D. $\frac{2}{4}$

5. Which comparison is true?

- A. $\frac{1}{4} < \frac{2}{4}$ B. $\frac{2}{4} > \frac{3}{4}$
C. $\frac{2}{4} = \frac{2}{6}$ D. $\frac{2}{3} < \frac{2}{4}$

Targeted Intervention

 Use Guided Support intervention lessons available in the Digital Teacher Center to provide targeted intervention.

Item Analysis

Item	DOK	Skill	Guided Support Intervention Lesson	Standard
1	1	Equivalent fractions with fraction models and number lines	Equivalent Fractions with Models	3.NR.2.5
2	1	Identify the fraction from a fraction model	Understand Unit Fractions	3.NR.2.1
3	1	Identify an equivalent fraction for a given point on a number line	Equivalent Fractions Using Number Lines	3.NR.2.5
4	1	Find an equivalent fraction	Equivalent Fractions with Models	3.NR.2.5
5	1	Find a true fraction comparison	Compare Fractions	3.NR.2.6
6	1	Equivalent fractions with fraction models and number lines	Equivalent Fractions with Models	3.NR.2.5
7	1	Find a true fraction comparison	Compare Common-Denominator Fractions	3.NR.2.6
8	1	Determine which fraction model represents equivalent fractions	Equivalent Fractions with Models	3.NR.2.5
9	1	Identify a fraction to complete a comparison	Compare Fractions	3.NR.2.6
10	1	Identify the fraction from a fraction model	Understand Unit Fractions	3.NR.2.1



Assign the digital Readiness Diagnostic to students or download and print PDFs from the Digital Teacher Center.



Built-in Remediation

Targeted Intervention

 Use Guided Support intervention lessons available in the Digital Teacher Center to provide targeted intervention.

Item Analysis

Item	DOK	Skill	Guided Support Intervention Lesson	Standard
1	1	Equivalent fractions with fraction models and number lines	Equivalent Fractions with Models	3.NR.2.5
2	1	Identify the fraction from a fraction model	Understand Unit Fractions	3.NR.2.1
3	1	Identify an equivalent fraction for a given point on a number line	Equivalent Fractions Using Number Lines	3.NR.2.5
4	1	Find an equivalent fraction	Equivalent Fractions with Models	3.NR.2.5
5	1	Find a true fraction comparison	Compare Fractions	3.NR.2.6

Built-in Remediation Activities

Guided Support

Materials

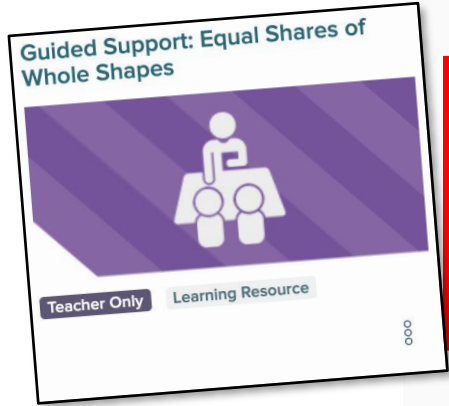
- Same-sized rectangular strips of paper (3 per student, 3 per instructor)

Begin the Activity

Remind students that **equivalent fractions** are fractions that represent the same amount of the whole. Distribute three same-sized rectangular strips of paper to each student. As the instructor, make sure you have three strips of paper to complete the activity with students. Explain to students that they will use strips of paper to model different fractions. Then, they will compare the models they constructed to test for equivalence.

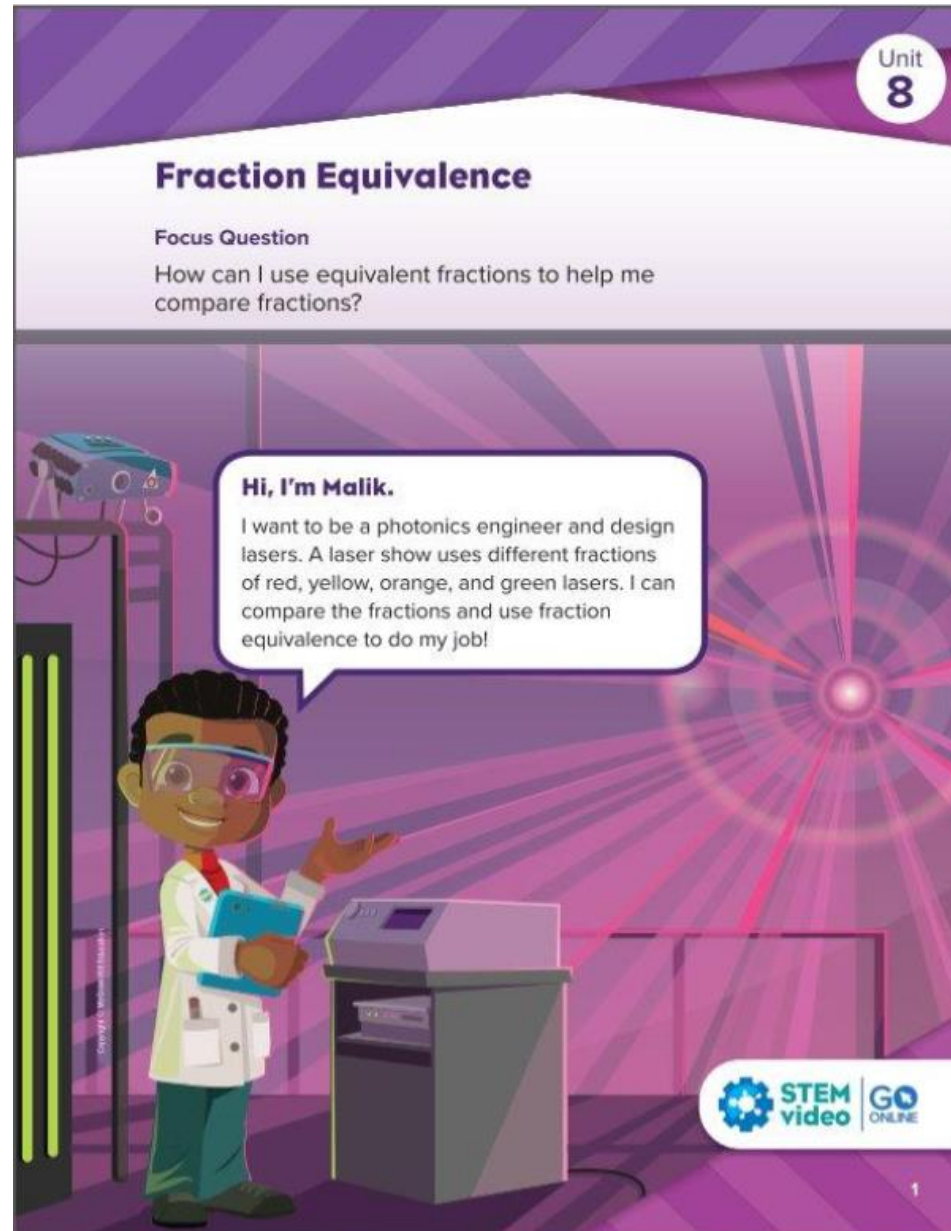
Have students complete the following:

- Take one strip of paper, and fold it in half lengthwise.
- Label each part of the strip $\frac{1}{2}$.
- Take the second strip of paper, and fold it in half lengthwise. (Emphasize accuracy, so that the folds on both strips o



Grade 4

Unit 8



Focus Question:

How can I use Equivalent Fractions to help me compare fractions ?

STEM Focus – Real World Application



Focus Question:

How can I use Equivalent Fractions to help me compare fractions ?

STEM Career Kids



Poppy – Park Ranger



Kayla – Landscape Architect



Hiro – Ocean Engineer



Grace – Computer Programmer



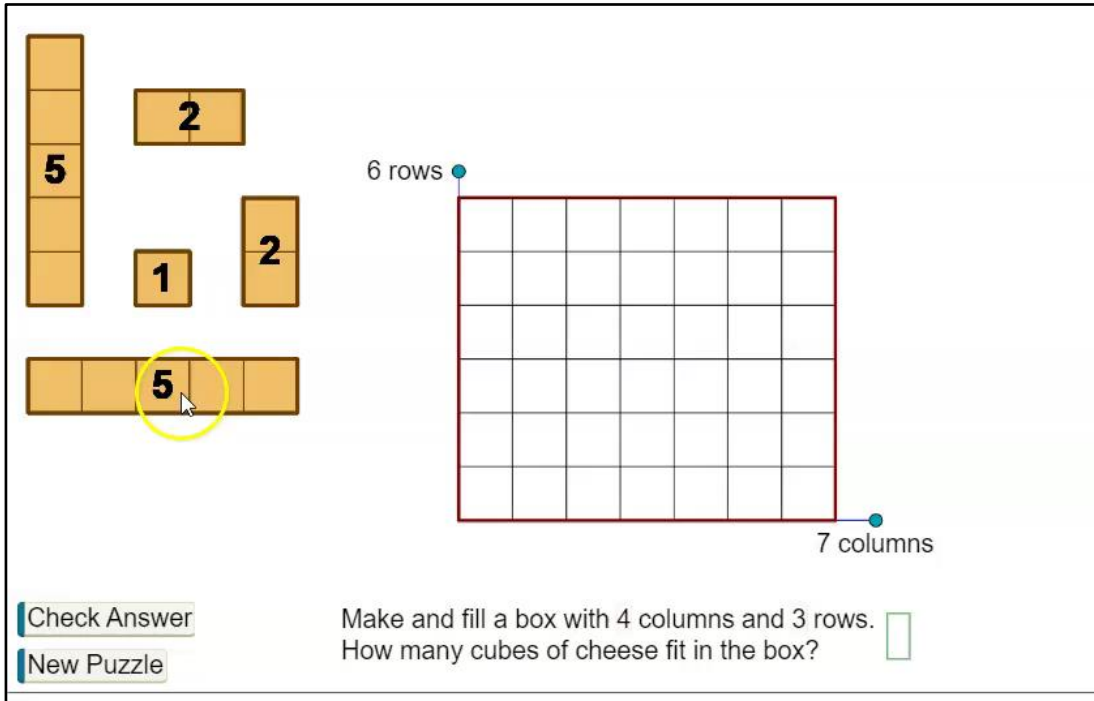
Hugo - Meteorologist



Sam - Architect



STEM Adventures and Projects



Check Answer

New Puzzle

Make and fill a box with 4 columns and 3 rows.
How many cubes of cheese fit in the box?

Use a Laser to Cut Metal



Help Malik use a laser to cut metal rods for bike parts.
Use your fraction skills to help find equivalent fractions and then compare them.

Start

Application Station Cards

Real-World



STEM



Cross-Curricular



Plan to Save and Spend

Sally earns money each month for baby sitting. She makes a plan for the fraction of her earnings she will save and the fraction she will spend.

How can you compare her spending and her saving? Make a plan, then creatively represent this comparison.

How did you compare the fractions with different denominators? How did your representation help you analyze Sally's plan? What comparison statements can you make about Sally's spending and savings plan? Do you agree with the way Sally has divided her earnings? Explain.

Next, make a spending and saving plan for yourself. Compare your spending and savings and creatively represent them. Share your plan with the class.

How did you decide the fraction of your earnings to spend and save?

1. How is your spending and savings plan the same and different from Sally's plan?
2. What is the importance of making a saving and spending plan?

Create Color Mixtures

Paint can be a complex material. Paints are used not only to decorate, but to extend the life of the material it covers. Research to learn about the job of a paint chemist.

Imagine you are a paint chemist. Choose 3 colors of paints to use. Choose a different total of drops, 3, 4, or 6, to use for each mixture. Write a fraction for the number of drops of each color used. Compare the fractions in each row using $>$, $<$, or $=$.

Once the colors are mixed, how does the greater amount of each color used affect the final mixture color? What about when the least amount of color was used? How do you think the two different color mixtures will affect the material they are painted on?

Mixture #1	Mixture #2
blue $\frac{2}{6}$	blue $\frac{1}{4}$
yellow $\frac{1}{6}$	yellow $\frac{2}{4}$
red $\frac{3}{6}$	red $\frac{1}{4}$

How Does That Measure Up?

Salsa is a tasty food and is made with healthy ingredients.

Look at the recipe. Discuss with your group which of the first four ingredients are the greater and lesser amounts and how you know. What models can you use to justify your answer? Repeat the discussion with ingredients 6–9.

Create a poster that illustrates and compares the first four ingredients that are measured in fractions of a cup. What models might you use to show the comparisons? Rewrite the fractions so they share a common denominator.

Repeat the activity with the four ingredients that are measured in fractions of a teaspoon (tsp).

1. Why can't you compare the amount of each ingredient measured in teaspoons with the amount of each ingredient measured in cups?
2. How did you decide what denominator to use?
3. What strategy did you use to find equivalent fractions?
4. Explain the importance of fractions in recipes.

Spicy Salsa

- $\frac{3}{4}$ cup chopped tomatoes
- $\frac{1}{4}$ cup green onions
- $\frac{1}{3}$ cup red onion
- $\frac{2}{6}$ cup fresh cilantro
- 1 jalapeno pepper, seeded
- 5 tsp lemon juice
- $\frac{1}{2}$ tsp chili powder
- $\frac{1}{4}$ tsp cumin
- $\frac{5}{8}$ tsp garlic powder
- Salt and pepper to taste



Directions: Combine ingredients and chop in a food processor, pulsing until finely chopped.

IGNITE! Activities

"Let's bring curiosity, wonder, and joy back into the classroom and make math irresistible for kids."

- Dr. Raj Shah

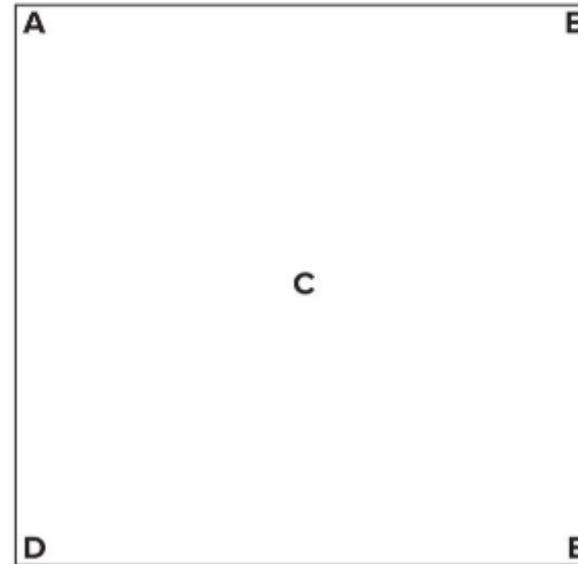


Folds and Fractions

Directions

Take a large square piece of paper. Label the square as shown in the figure below.

- Fold edge AB to edge DE. Make a crease, then open it up again.
- Fold edge AD to edge BE. Make a crease, then open it up again.
- Fold corner A diagonally to corner E. Make a crease, then open it up again.
- Fold corner D diagonally to corner B. Make a crease, then open it up again.
- Fold corners A, B, D, and E to center C. Make creases, then open it up again.

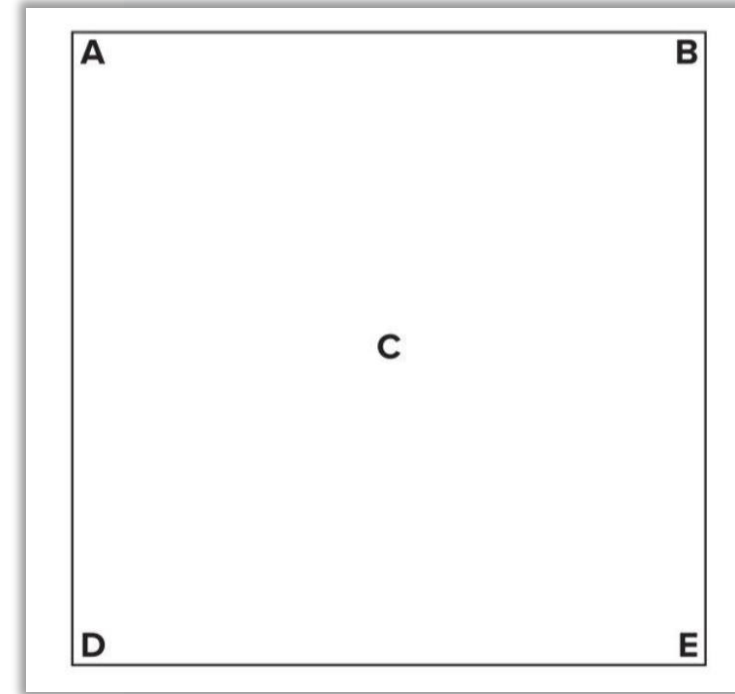


Folds and Fractions

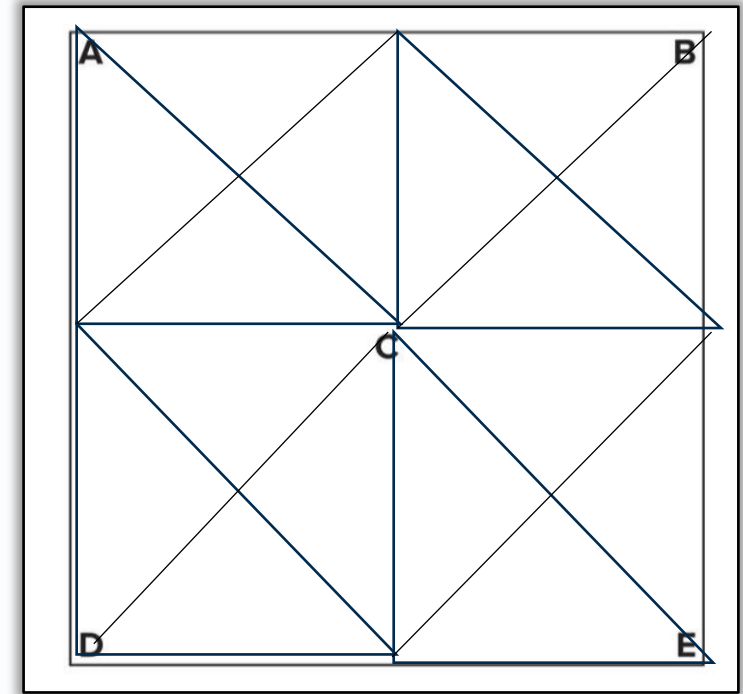
Directions

Take a large square piece of paper. Label the square as shown in the figure below.

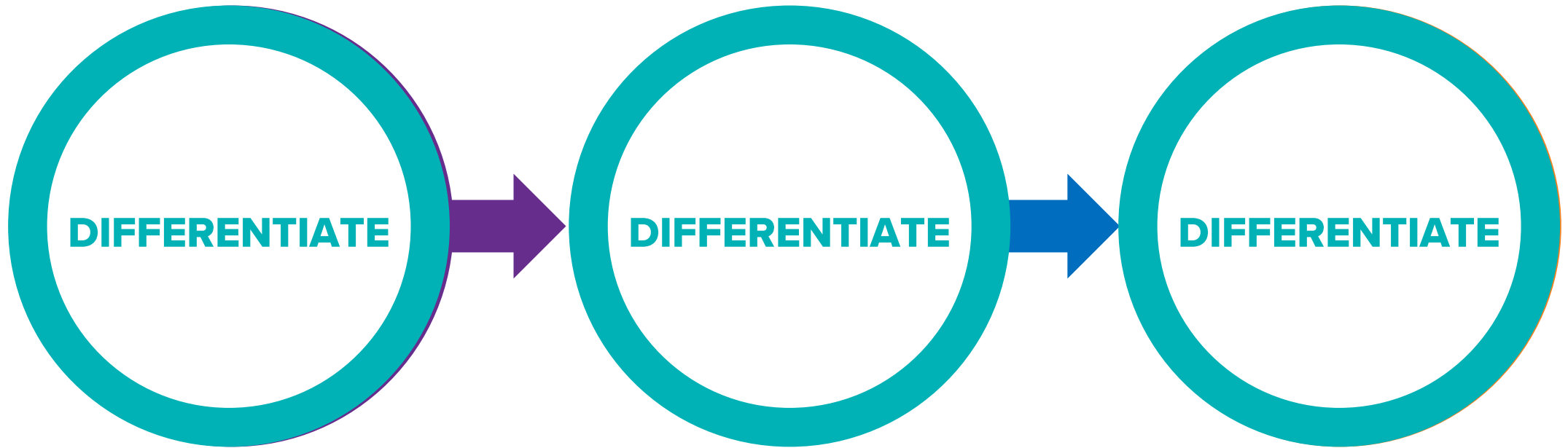
- a. Fold edge AB to edge DE. Make a crease, then open it up again.
- b. Fold edge AD to edge BE. Make a crease, then open it up again.
- c. Fold corner A diagonally to corner E. Make a crease, then open it up again.
- d. Fold corner D diagonally to corner B. Make a crease, then open it up again.
- e. Fold corners A, B, D, and E to center C. Make creases, then open it up again.



- How many small triangles are there?
- Are all the small triangles the same size and shape? Explain your thinking.
- Collaborate:
Find as many ways as possible to shade in $\frac{1}{4}$ of the square.



K – 5 Flexible Lesson Structure



LAUNCH



Daily Sense Making and Number Sense Routines

$38 + 19$

$40 + 17$

$37 + 20$

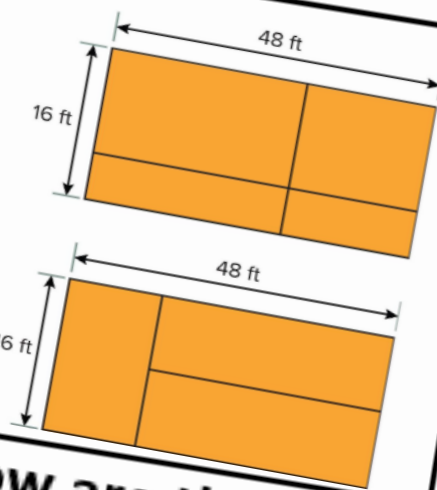
Which One Below



**What do you Notice?
Wonder?**

**Decompose 85
in 3 ways.**

Decompose



**How are they the
same? Different?**



John SanGiovanni



Annie Fetter

Optimize Reasoning, Math Talk, Fact Fluency and Math Practices and Processes!



Daily Number Sense Routine

Number Routine

About How Much?

Estimate each product.

$$61 \times 3$$

$$9 \times 22$$



John SanGiovanni



Daily Sense Making Routine

Be Curious

Which Doesn't Belong?



Annie Fetter

Lesson 8-2
Generate Equivalent Fractions
Using Models



Be Curious

Which Doesn't Belong?

$$\frac{1}{4}$$

$$\frac{3}{12}$$

$$\frac{2}{5}$$

$$\frac{2}{8}$$

$$\frac{1}{4}$$

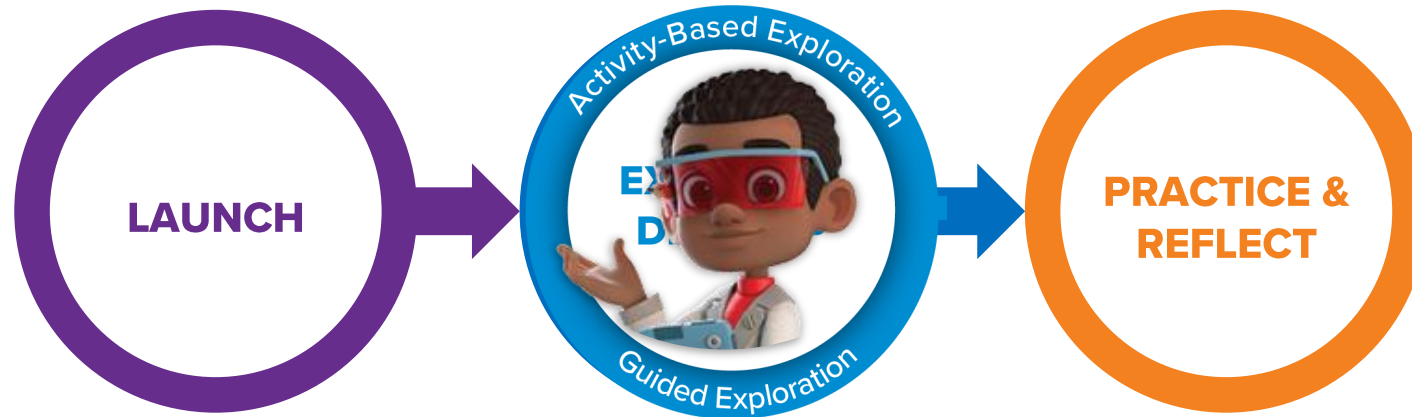
$$\frac{3}{12}$$

$$\frac{2}{5}$$

$$\frac{2}{8}$$



EXPLORE & DEVELOP



Develop the Math

1. Pose the Problem

Alexa and Sari got pizzas that are the same size. Alexa cut her pizza into 6 equal-sized pieces and ate $\frac{4}{6}$ of her pizza. Sari ate the same amount of her pizza, but cut her pizza into smaller equal-sized pieces. What fraction of her pizza could Sari have eaten?



1

ACTIVITY-BASED EXPLORATION



- Explore Concepts
- Develop & Test Hypothesis
- Productive Struggle

2

GUIDED EXPLORATION

Learn
Alexa and Sari got pizzas that are the same size. Alexa cut her pizza into 6 equal-sized pieces and ate $\frac{4}{6}$ of her pizza. Sari ate the same amount of her pizza, but cut her pizza into smaller equal-sized pieces. What fraction of her pizza could Sari have eaten?
You can find fractions that are equivalent to $\frac{4}{6}$.

One Way Use fraction models.
Alexa Sari
 6 equal parts. 12 equal parts.
4 are shaded. 8 are shaded.
Sari could have eaten $\frac{8}{12}$ of her pizza.

Another Way Rewrite $\frac{4}{6}$ with a different denominator.
To generate an equivalent fraction, multiply the numerator and denominator by a fraction equal to 1.
 $\frac{4 \times 2}{6 \times 2} = \frac{8}{12}$
 $\frac{4 \times 3}{6 \times 3} = \frac{12}{18}$
Sari could have eaten $\frac{12}{18}$ of her pizza.

Math Skills Modeling
What other operations could you use to generate equivalent fractions?

Work Together
What fraction is missing from the pattern? Explain how you can find the equivalent fraction.
 $\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{12}{16}$

Lesson 3 • Generate Equivalent Fractions Using Models

- Teacher Guided
- Question/Answer Format Reinforce Vocabulary
- Promotes Rich Discourse

Explore and Develop the Math

1. Pose the Problem

Alexa and Sari got pizzas that are the same size. Alexa cut her pizza into 6 equal-sized pieces and ate $\frac{4}{6}$ of her pizza. Sari ate the same amount of her pizza, but cut her pizza into smaller equal-sized pieces. What fraction of her pizza could Sari have eaten?



Interactive
Presentation

Launch Presentation



Explore and Develop the Math

2. Develop the Math

Exploration

Use a fraction model to determine the missing numerator or denominator in the equivalent fraction. Record your findings in the equations.

$$\frac{3}{5} = \frac{\square}{10}$$

$$\frac{2}{3} = \frac{\square}{12}$$

$$\frac{2}{6} = \frac{1}{\square}$$

$$\frac{9}{12} = \frac{3}{\square}$$



What patterns do you see in the equivalent fractions?

Effective Teaching Practices

Exploration

Use a fraction model to determine the missing numerator or denominator in the equivalent fraction. Record your findings in the equations.



Implement Tasks That Promote Reasoning and Problem Solving

- How did you use your representation to find the missing number in the equation?
- How did you determine the size of the parts or the number of parts you needed to represent the equivalent fraction?
- What relationships do you notice between the parts that represent the equivalent fractions?

$$\frac{2}{3} = \frac{\square}{12}$$

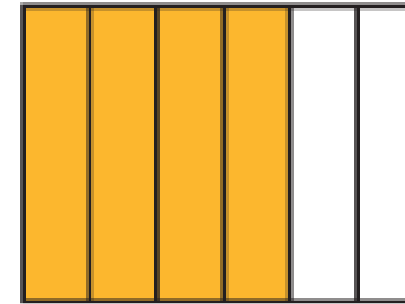
$$\frac{9}{12} = \frac{3}{\square}$$

in the equivalent fractions?

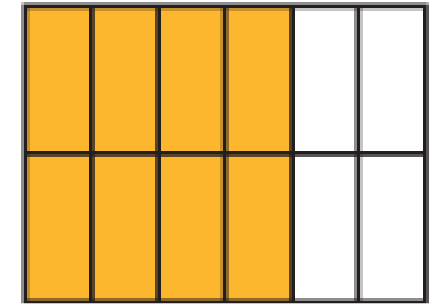
Explore and Develop the Math

3. Bring It Together

Alexa and Sari got pizzas that are the same size. Alexa cut her pizza into 6 equal-sized pieces and ate $\frac{4}{6}$ of her pizza. Sari ate the same amount of her pizza but cut her pizza into smaller equal-sized pieces. What fraction of her pizza could Sari have eaten?



Alexa



Sari

Explore and Develop the Math

3. Bring It Together

You can multiply the numerator and denominator by a fraction equal to 1 to find an equivalent fraction.

$$\frac{4 \times 2}{6 \times 2} = \frac{8}{12}$$


$$\frac{2}{2} = 1$$

$$\frac{4 \times 3}{6 \times 3} = \frac{12}{18}$$


$$\frac{3}{3} = 1$$

3. Bring It Together

Work Together

What fraction is missing from the pattern? Explain how you can find the equivalent fraction.

$$\frac{3}{4} = \frac{6}{8} = \frac{?}{?} = \frac{12}{16}$$

PRACTICE & REFLECT





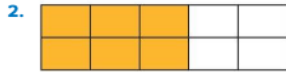
Practice and Reflect



On My Own

Name _____

Use the representation to find an equivalent fraction.



$$\frac{2}{3} = \frac{\square}{\square}$$

$$\frac{6}{10} = \frac{\square}{\square}$$



$$\frac{3}{4} = \frac{\square}{\square}$$

$$\frac{4}{5} = \frac{\square}{\square}$$

Find the missing number in the equivalent fraction.
Explain how you determined the number.

5. $\frac{1}{5} = \frac{2}{\square}$

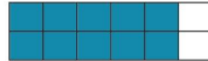
6. $\frac{3}{4} = \frac{75}{\square}$

7. $\frac{14}{12} = \frac{\square}{6}$

8. $\frac{12}{9} = \frac{\square}{3}$

on of green tea. He pours all the tea
ch glass has the same amount. How
ch glass? Explain your thinking.

are represented by
reasoning.



ys $\frac{2}{4}$ and $\frac{4}{6}$ are equivalent fractions.
to Theo?

Are the fractions $\frac{6}{4}$ and $\frac{9}{6}$ equivalent?

equivalent fractions help you solve problems

Complete Assignments Online
eTool Kit of Manipulatives

4 Pages of Practice for Each Lesson!

Math Replay



Exit Ticket...



Lesson 7-2

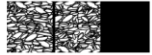
Exit Ticket

Name _____

1. What unit fraction is represented by each part of the figure?



2. Eli is eating a granola bar. The solid black portion represents the equal part of the granola bar that has been eaten.



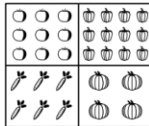
- a. Write a fraction to represent the portion of the granola bar that was eaten.
- b. Write a fraction to represent the portion of the granola bar that has not been eaten.

3. Lily partitioned her garden into equal parts. She planted vegetables in each part.

What fraction of the garden has carrots planted in it?

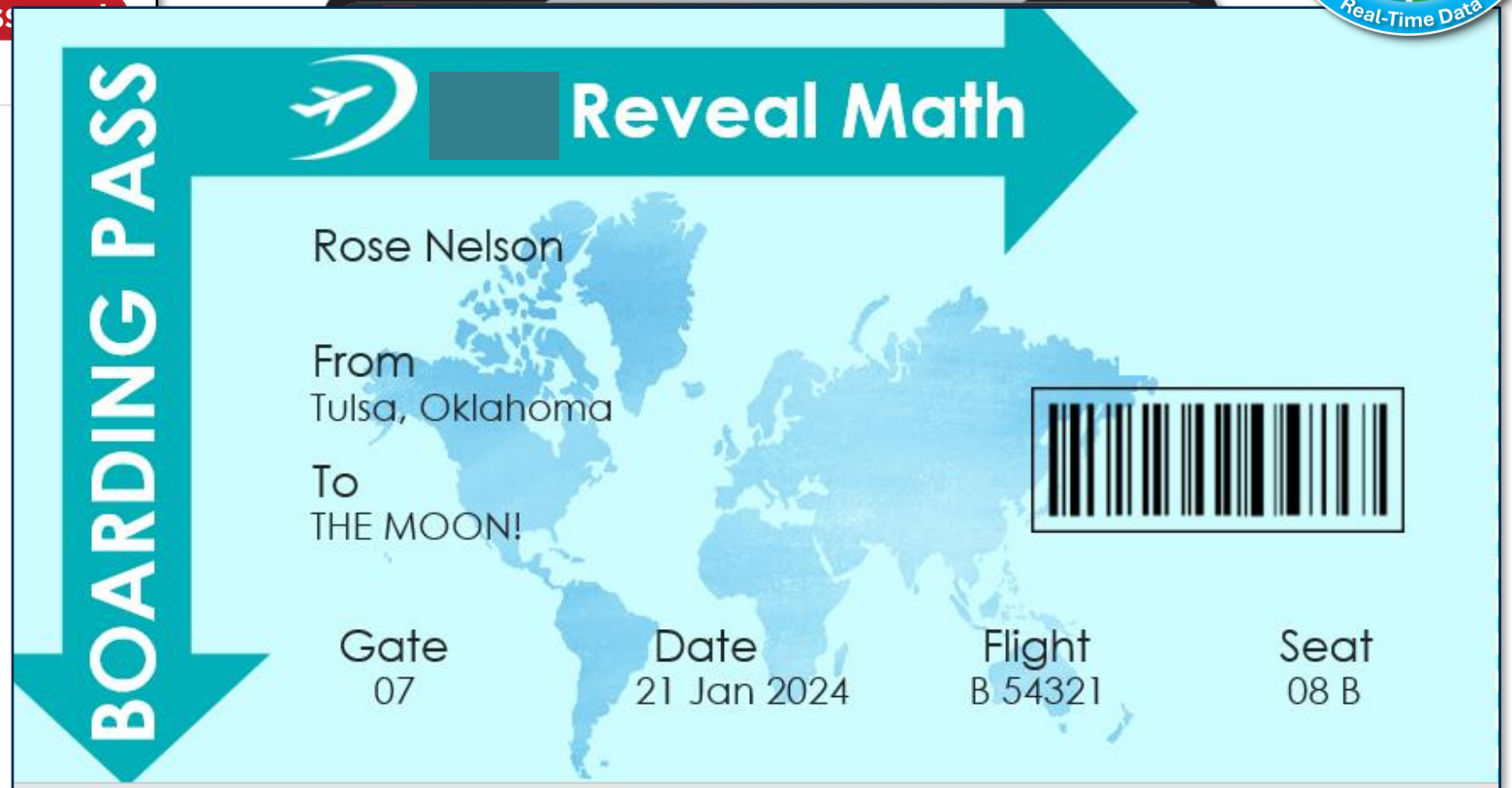
- A. $\frac{1}{2}$
C. $\frac{1}{6}$

- B. $\frac{1}{4}$
D. $\frac{1}{8}$



Reflect On Your Learning

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



Recommendations for Personalized Support



Personalized Learning Powered by McGraw Hill Plus™



Assess



Differentiate



ish Edition and Resources



vers



Supporting Targeted Small Group Instruction

Prerequisite

This mini lesson revisits skills not mastered and necessary for success in the current standard.

Reinforce / On-Lesson

This mini lesson reinforces skills in the current standard.

Postrequisite

This mini lesson introduces a related standard in the next grade level.

Teacher
Led
Mini-
lessons

LESSON
Compare Shapes

Goal: Students will identify defining attributes of shapes such as vertices and sides.

Guided Support 15 MINUTES

Materials

- Attribute blocks (circles, triangles, squares, hexagons; 1 set per student)
- Large whiteboard or large sheet of paper (1 per student)
- Dry-erase markers and eraser

Begin the Activity

Have students close their eyes. Give each student a yellow circle attribute block and tell them that they are holding a circle. Guide students to trace the shape of the block and describe what they feel. Have students open their eyes and describe the way the circle looks. If necessary, ask the following questions: Is it flat or solid? flat Is it open or closed? closed Is it round or straight? round How many sides does it have? 0 sides How many vertices does it have? 0 vertices. What color is it? yellow Is it big or small? Sample answer: small List the words students use to describe the circle on the board. Which of these words help us name this shape as a circle? Sample answers: flat, closed, round, 0 sides, 0 vertices Which of these words do not help us name this shape as a circle? Sample answers: yellow, small

Have students compare all the circle blocks. Explain that although these shapes are different colors and sizes, they are still circles. Why are all of these shapes called circles? Sample answer: They are circles because they are flat, closed, round shapes that have 0 sides and 0 vertices.

Repeat the process with triangle, square, and hexagon attribute blocks.

Conclude the Activity

Draw a vertical line to divide a whiteboard in half. Title the left half 0 sides and the right half 3 sides. Give students all of the circle and triangle blocks and have them place each block in the correct half of the board. Question students to identify how the shapes in each group are different and how they are the same. Students should then use those shared features to identify and name each group of shapes. Repeat for other pairs of shapes and other compared attributes (number of vertices and number of equal sides).

Prerequisite

Standard: [6.RP.A.1](#)

Skill: Equivalent ratio word problems (basic)

Chan, Ethan | Geldt, Lincoln | Vaccaro, Nolan | Zhiqiang, Liu

Lesson: Recognize Open and Closed Shapes

Students will describe attributes of rectangles, squares, and circles to include the terms open and closed.

Teacher Only PDF Add to Presentation

Reinforce / On-Lesson

Standard: [6.RP.A.1](#)

Agarwal, Chiranjivi | Bator, Mira | Conrotto, Camille | Herwitz, Haylie | Lu, Kiera | Mwanajuma, Okilo

Lesson: Compose 2-D Shapes

Students will create specific two-dimensional shapes.

Teacher Only PDF Add to Presentation

Extension

Standard: [6.RP.A.1](#)

Burke, Roman | Carroll, Kristi | Collins, Xavier | Fitzgerald, Roderick | Gilbert, Woodrow | Hunt, Issa

Lesson: Compare Shapes

Students will identify defining attributes of shapes such as vertices and sides.

Teacher Only PDF Add to Presentation

Reinforce Understanding



Arizona Reveal
MATH

Part 1: Learn

Part 2: Apply

Part 3: Assess

McGraw Hill Education

Take Another Look: Understand Unit Fractions

Save and Exit

Question 1 of 5

Question 1

Choose the correct unit fraction for the image shown.



☐ A) $\frac{1}{6}$

☐ B) $\frac{1}{2}$

☒ C) $\frac{1}{8}$

☐ D) $\frac{1}{4}$

Question 2

Choose the correct unit fraction for the image shown.



☐ A) $\frac{1}{2}$

☐ B) $\frac{1}{4}$

☐ C) $\frac{1}{3}$

☐ D) $\frac{1}{6}$

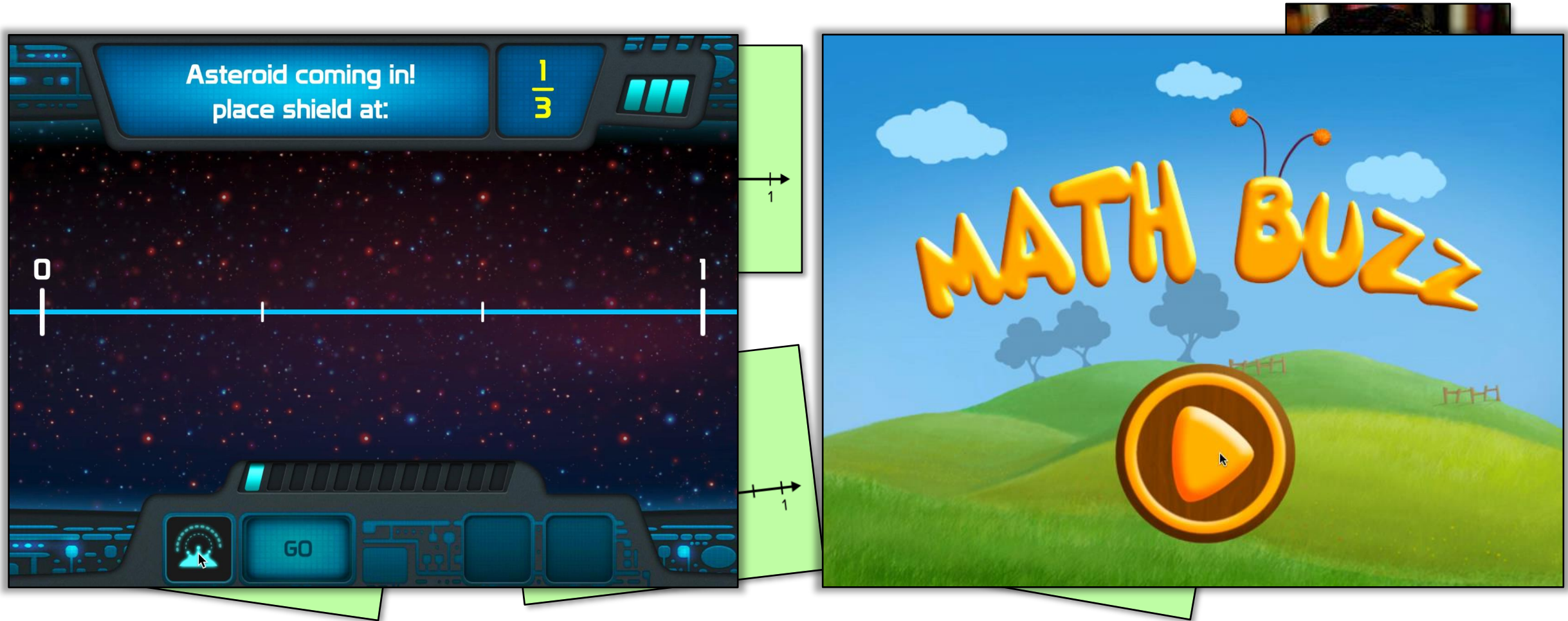
Next Question

Done and Review



Take Another Look Reteaching Mini-Lessons

Build Proficiency – Support Fluency



Build Proficiency – Support Fluency

QuickTables: Revisits Known Facts and While Introducing New Facts 😊



Type the answer and select
Enter or the space bar.

3 × 7 =

Progress: 60%

×	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

Needs Practice

Almost There

Mastered!

Daily Spiral Review

Question 1

Choose the correct answer.

Which is the standard form of five thousand, eight hundred two?

- ☐ A) 5, 820
- ☐ B) 5, 802
- ☐ C) 582
- ☐ D) 528



Get a Hint



View: "eToolkit"



View: "Glossary"



Need help with this question?

Lesson 7-3

Spiral Review

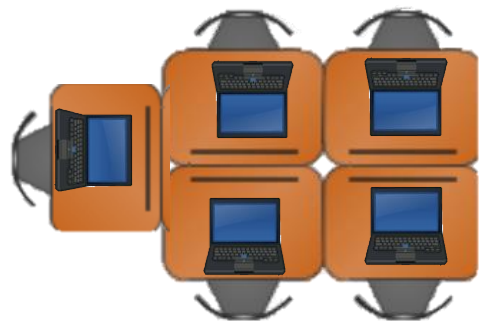
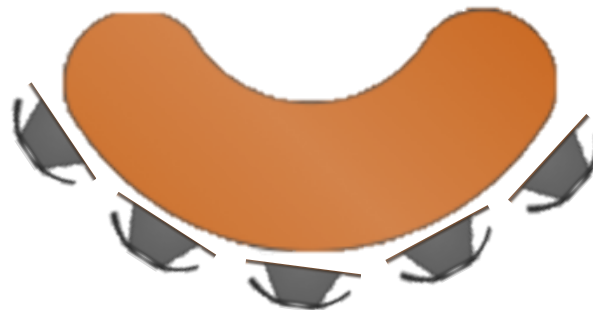
Name _____

1. What is the standard form of five thousand, eight hundred two?
A. 5,820 B. 5,802
C. 582 D. 528
2. Which of the following represent the number 3,460? Select all that apply.
A. 300 + 40 + 6
B. 3,000 + 400 + 6
C. three hundred forty-six
D. 3,000 + 400 + 60
E. three thousand, four hundred sixty
F. three thousand, four hundred six
3. What is the word form for 8,098?
A. eight hundred eighty-nine
B. eight hundred ninety-eight
C. eight thousand, ninety-eight
D. eight thousand, nine hundred eight
4. What is the standard form of $4000 + 50 + 7$?

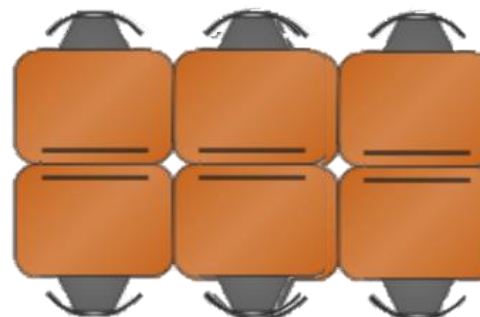
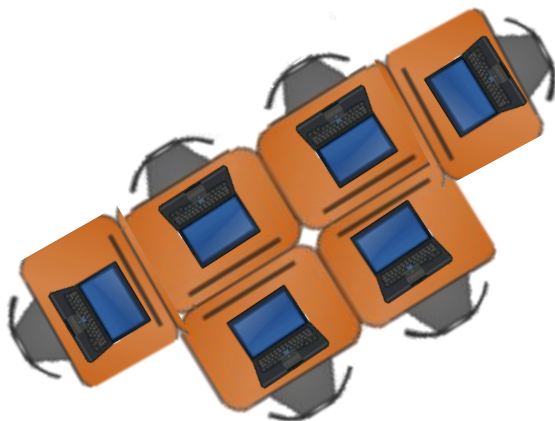
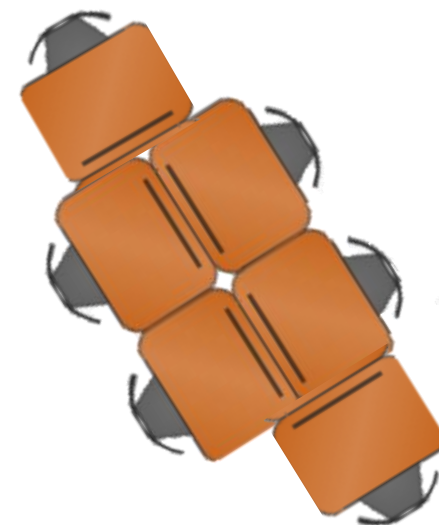
5. What is the expanded form for six thousand, seven hundred forty?
A. $600 + 40 + 7$
B. $600 + 70 + 4$
C. $6,000 + 700 + 4$
D. $6,000 + 700 + 40$
6. What is the word form for $2000 + 70 + 5$?
A. two thousand, seventy-five
B. two thousand, seven hundred five
C. two hundred seventy-five
D. two hundred fifty-seven
7. What is the expanded form for 7,039?

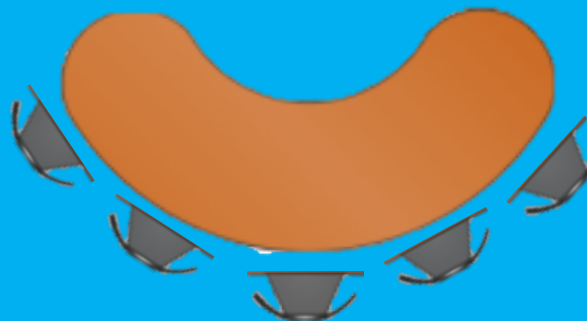
8. What is the standard form for one thousand, six hundred eighty?

Spiral Review

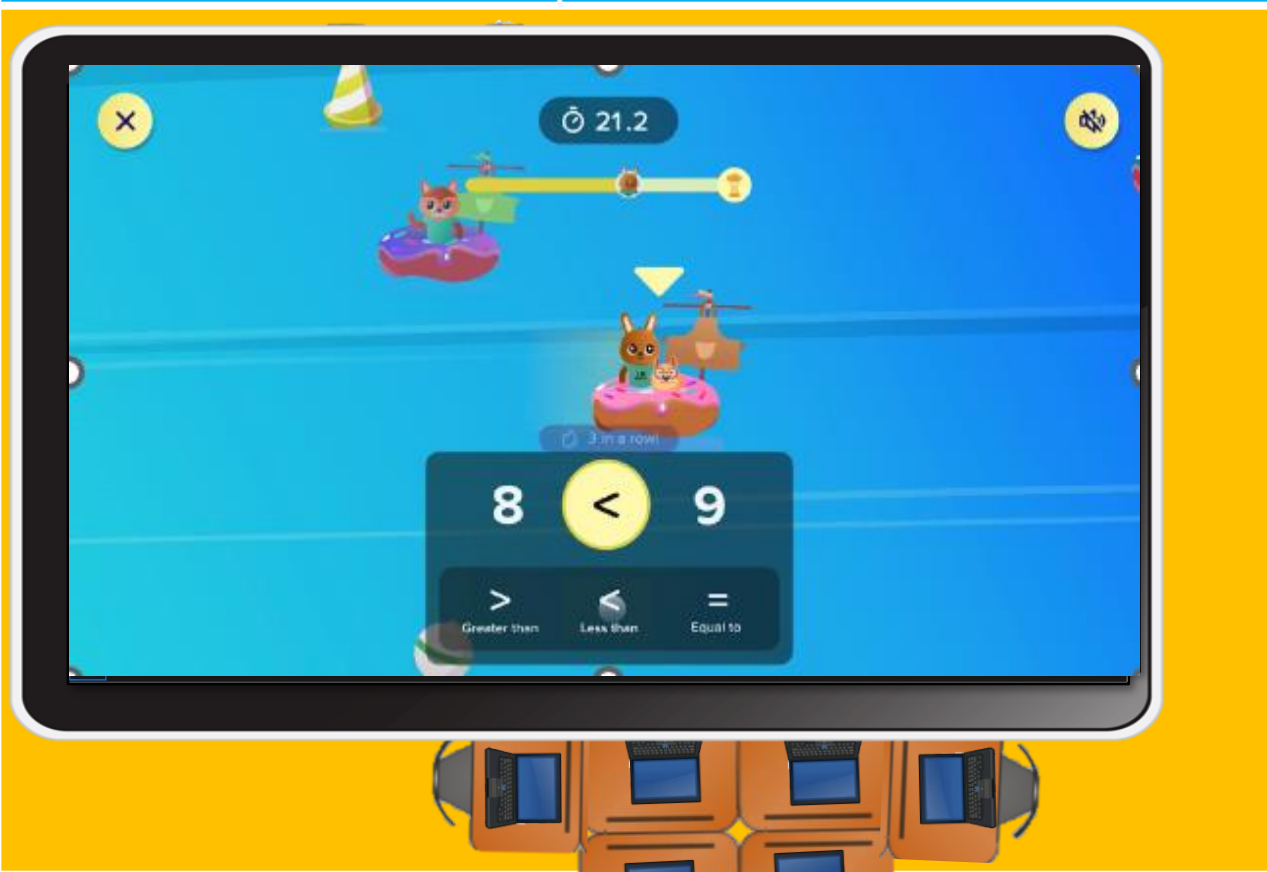


**So how could this look
in my classroom?**

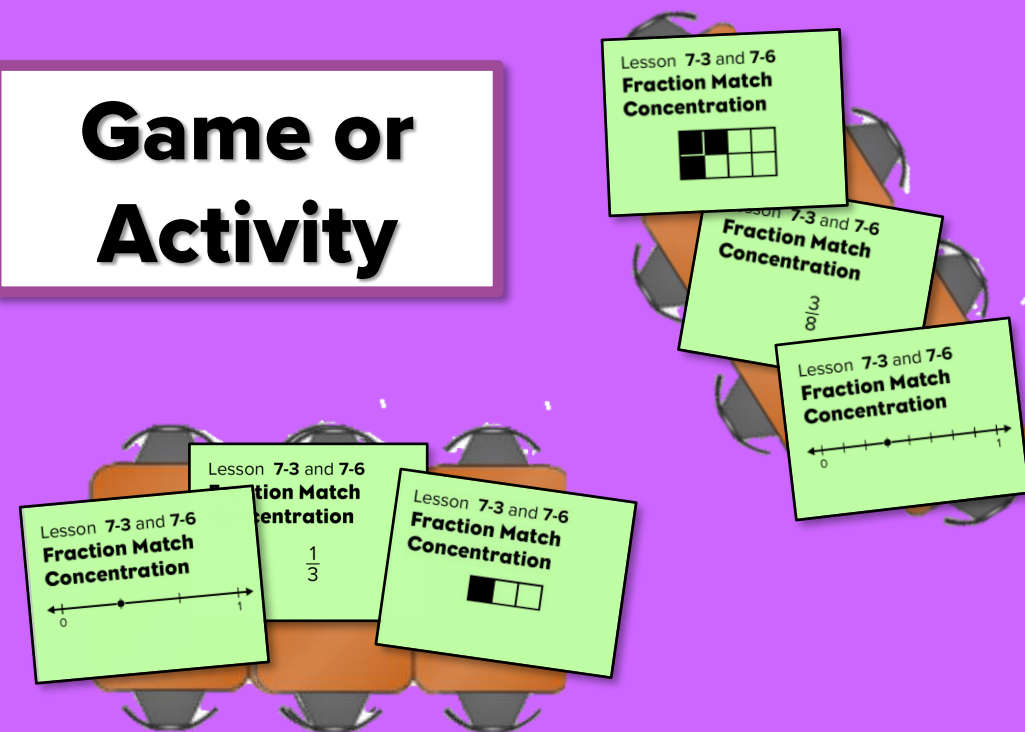




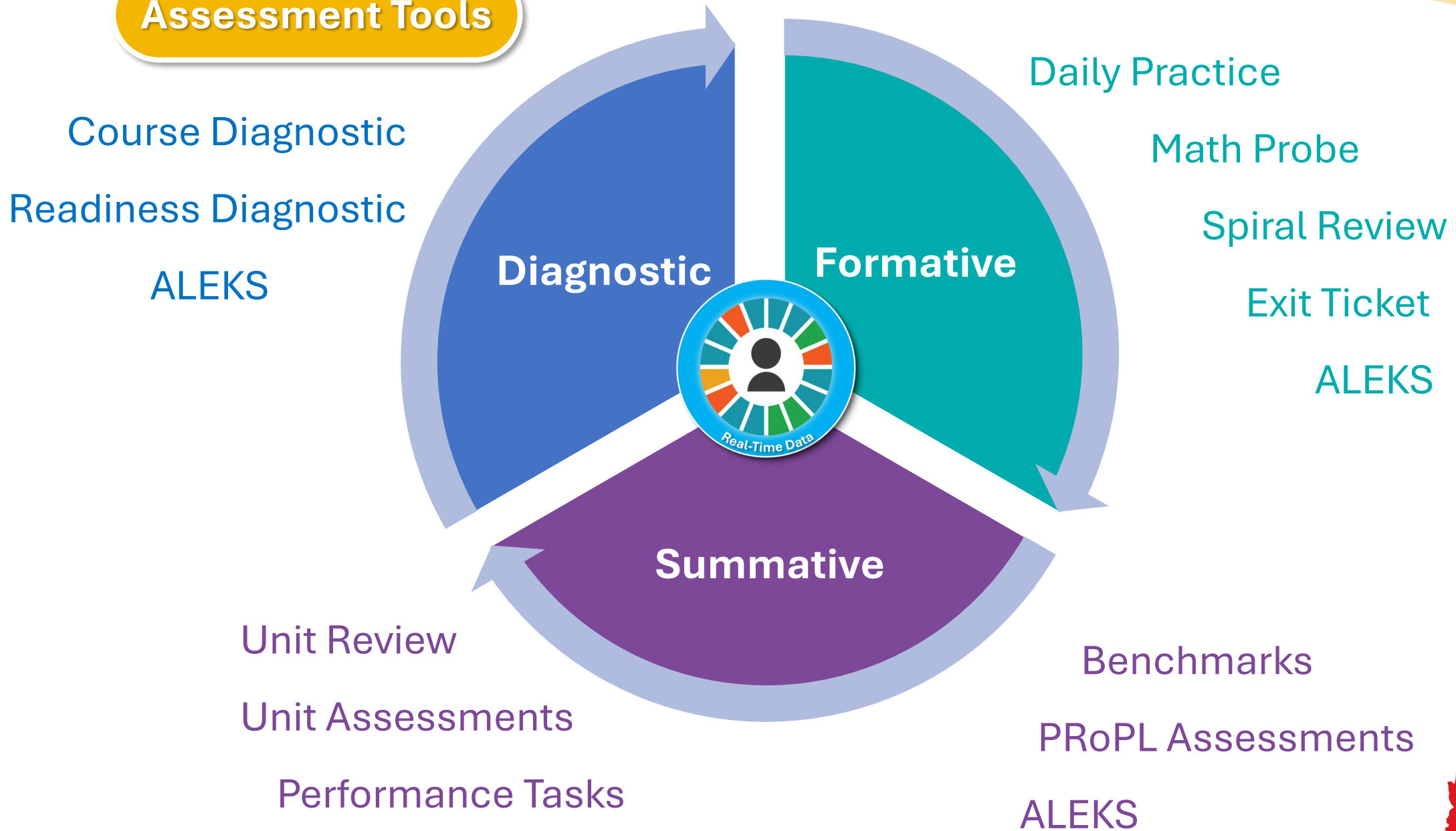
Teacher Table Mini Lessons



Game or Activity



Assessment Tools



Assessments

Print and Digital
Audio Support
Customizable
Online Test Generator
Auto-Graded

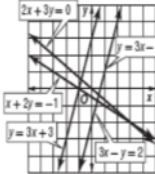


Question 1 | Form 2A (Chapter Resource Master)

Text to Speech Calculator Highlighter Notepad Line Reader <<

Questions <

Use the graph to answer the following questions.



Determine how many solutions exist for each system of equations.

$$y = 3x + 3$$

$$3x - y = 2$$

☐ A) no solution

☐ B) one solution

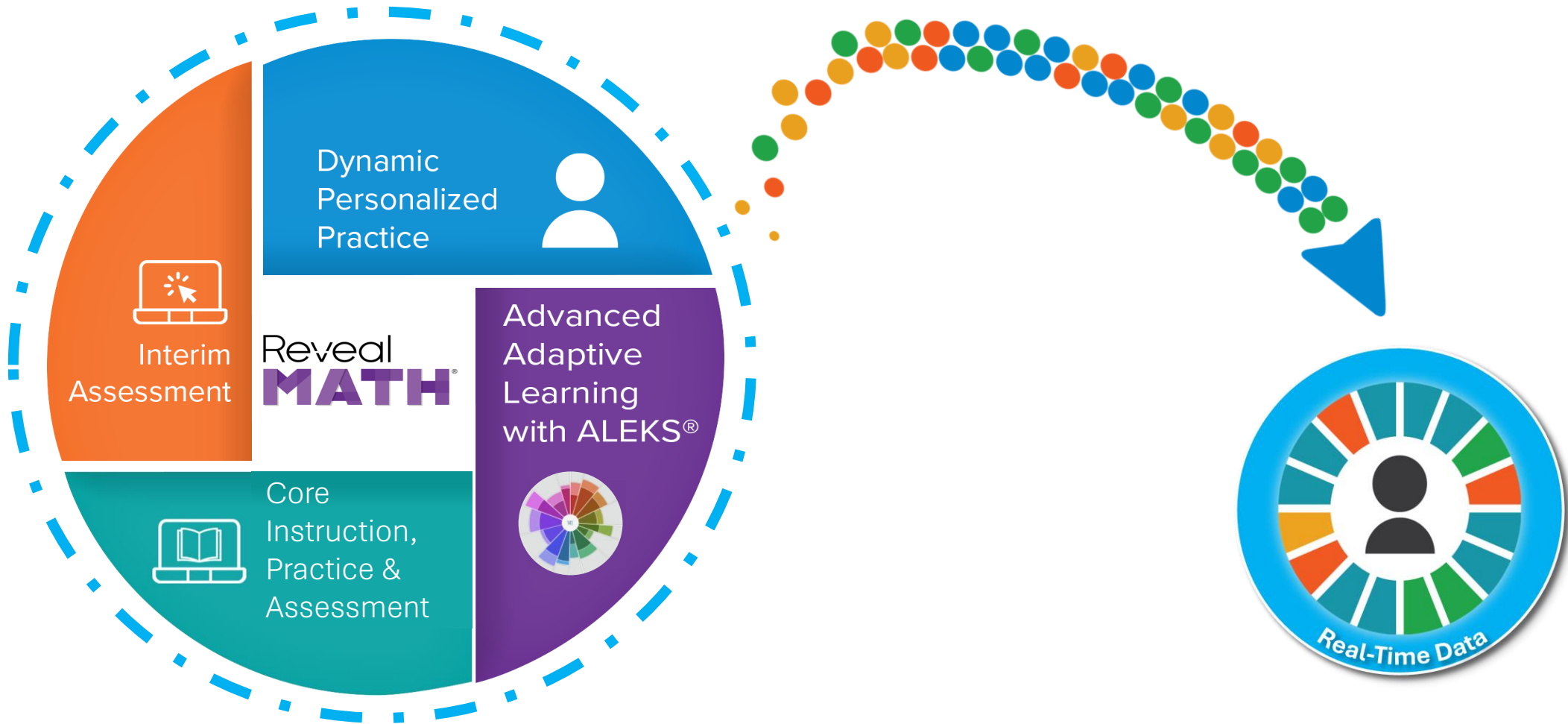
☐ C) infinitely many solutions

☐ D) cannot be determined

← Previous Skip Question Check Answer

Question Types

- **Multiple Choice**
- **Cloze**
- **Multi-Select**
- **Essay**
- **Short Answer**
- **True/False**
- **Matching**
- **Drawing**
- **Image Labeling**
- **Number Lines**
- **Equation Entry**
- **Choice Matrix**
- **Bucketing**
- **Fill-in-the-Blank**
- **Grid-In**
- **Ordering**
- **Select Text**
- **Audio Recording**
- **Instructions**
- **Graphing**
- **Hot Spot**
- **Drag and Drop**



Overall Proficiency



Projected State Assessment Proficiency



- Multiple Data Sources Pulled Into One Location – Including Interim Assessment Data
- Standards **& Skills** Graph
- Clear Picture of Class & Student Learning
 - In the Moment
 - Over Time
 - Year to Year



- Targeted Recommendations:
 - Available up to 5 Levels:
 - Prerequisite – 2+ Years Below Grade Level
 - Reinforce
 - On Level
 - Extension
 - Post-requisite – Beyond Grade Level

Reinforce

Pearson, Robin **Robbins, Scott** **Snyder, Thomas** **Watters, Sharri**

Skill: Generate equivalent fractions by using a model



Take Another Look: Equivalent Fractions Using Number Lines

Assign ...

Collier, Claton **Hailey, Felicity** **Hernandez, Winifred** **Walton, Leigh**

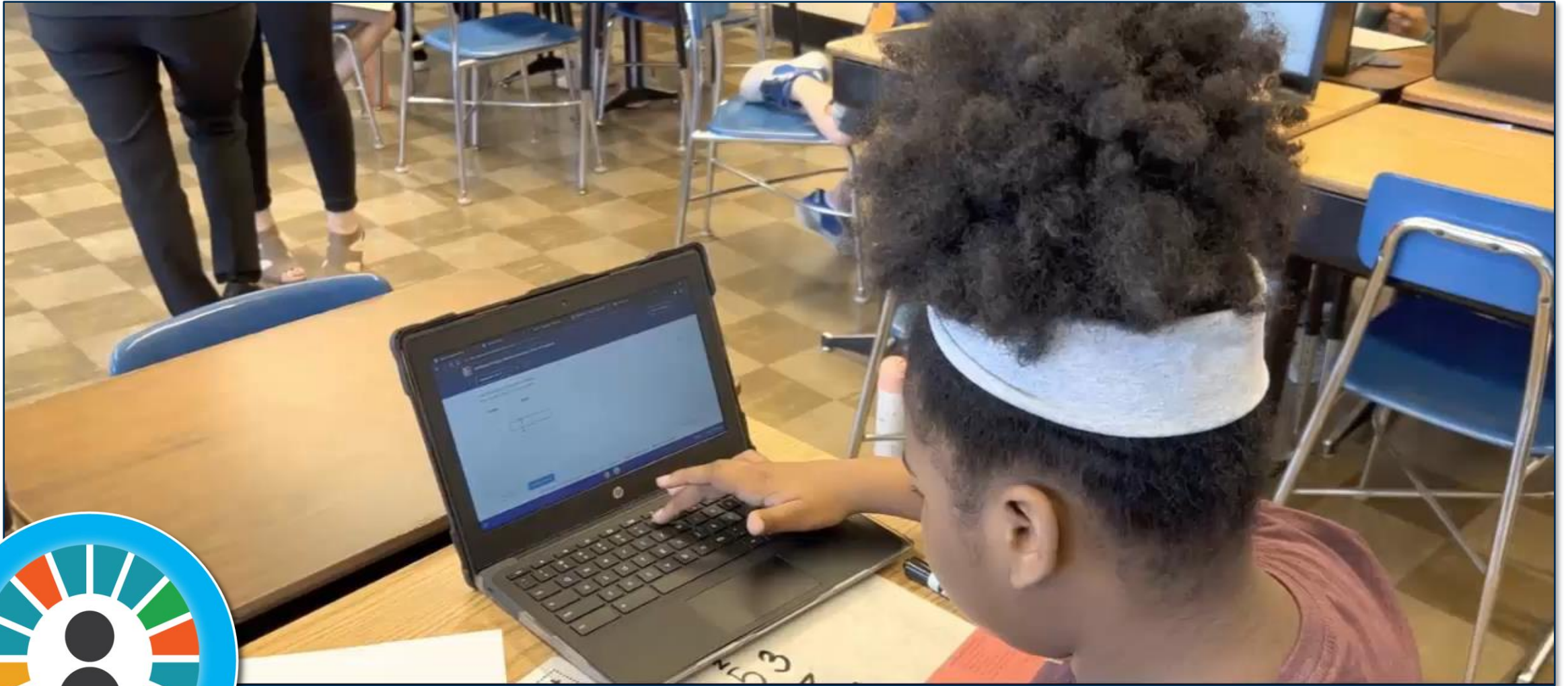
Skill: Know that two fractions are equivalent if they are the same size



Take Another Look: Equivalent Fractions with Models

Assign ...

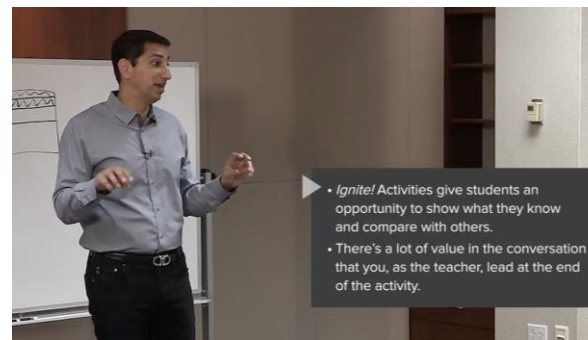
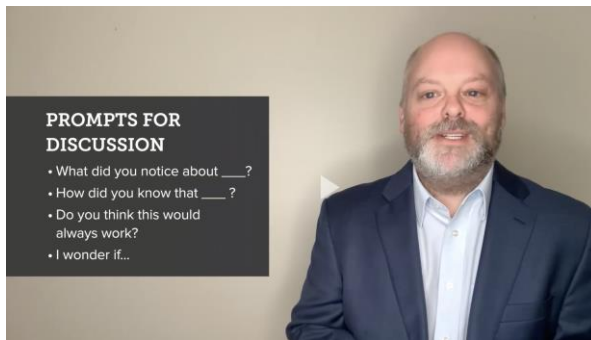
Personalizing Math in a Primary Classroom





Professional Development

We deliver professional development through learning experiences and resources that meet you where you are.



CLASSROOM-BASED
LEARNING



BLENDED
LEARNING



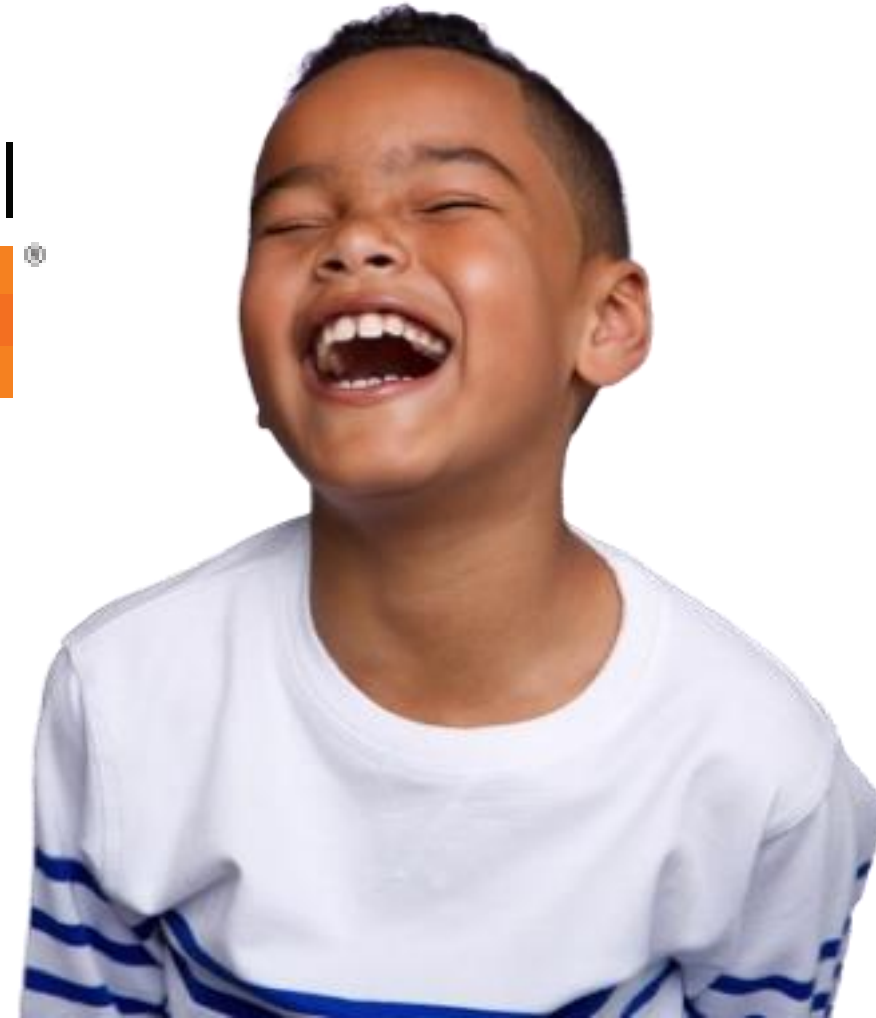
REMOTE/VIRTUAL
LEARNING

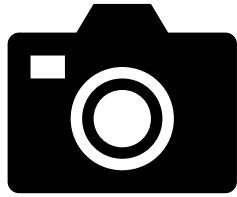




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Reveal the full potential in
every learner!





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Arizona Reveal
MATH



Comprehensive Learning Solution

