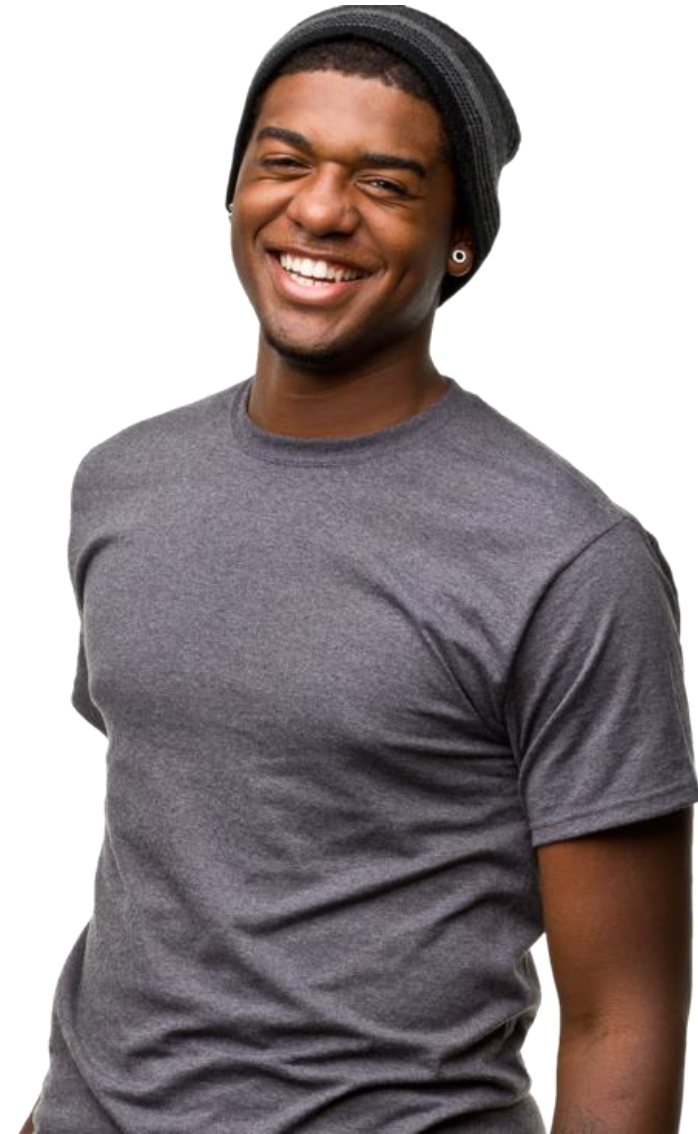




Arizona Reveal
MATH®

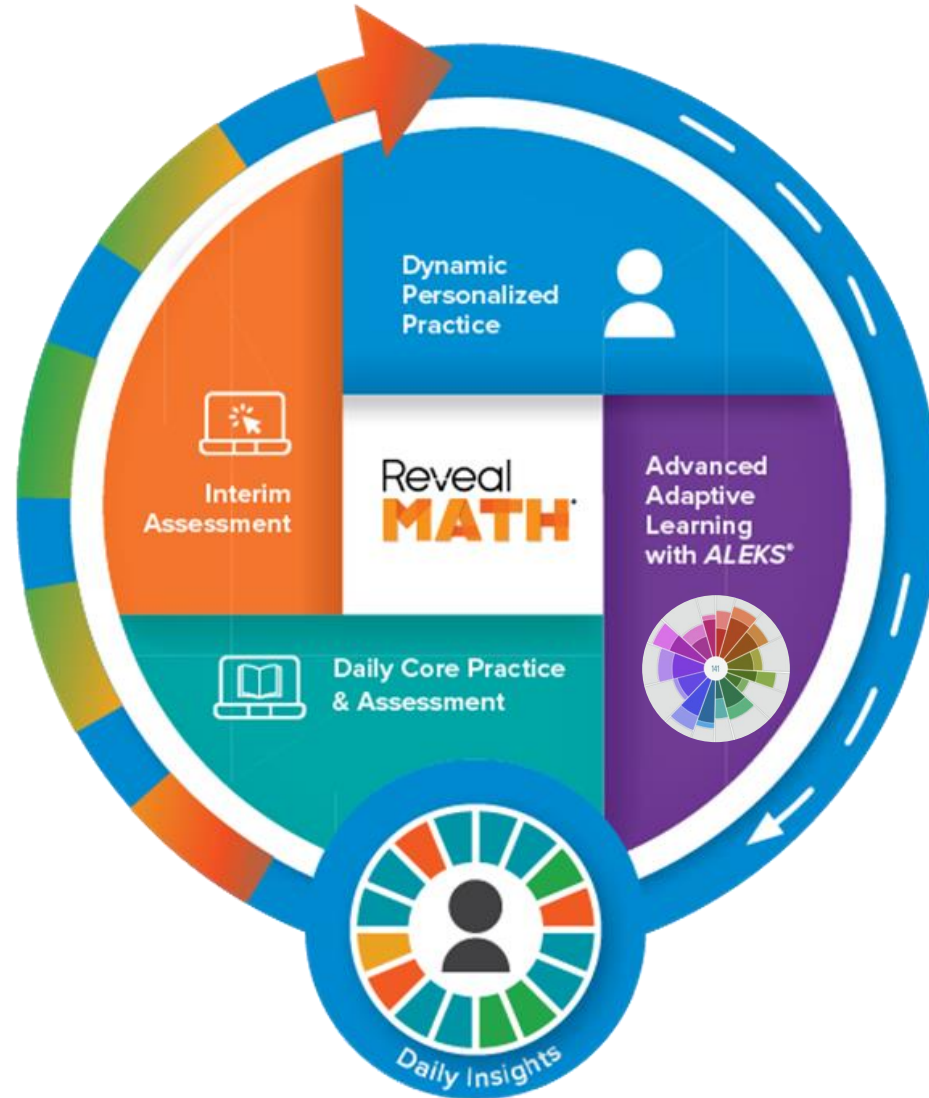
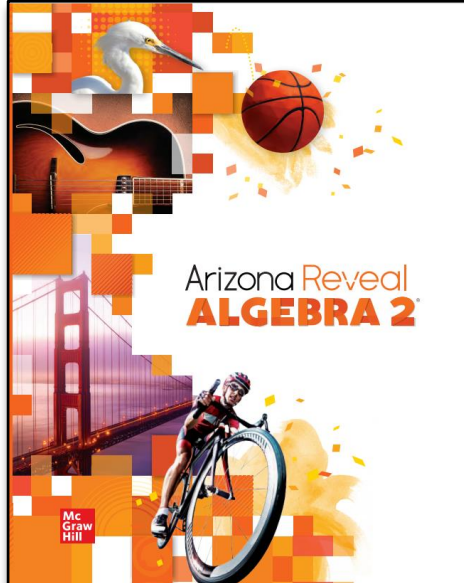
Reveal the full potential in
every learner!



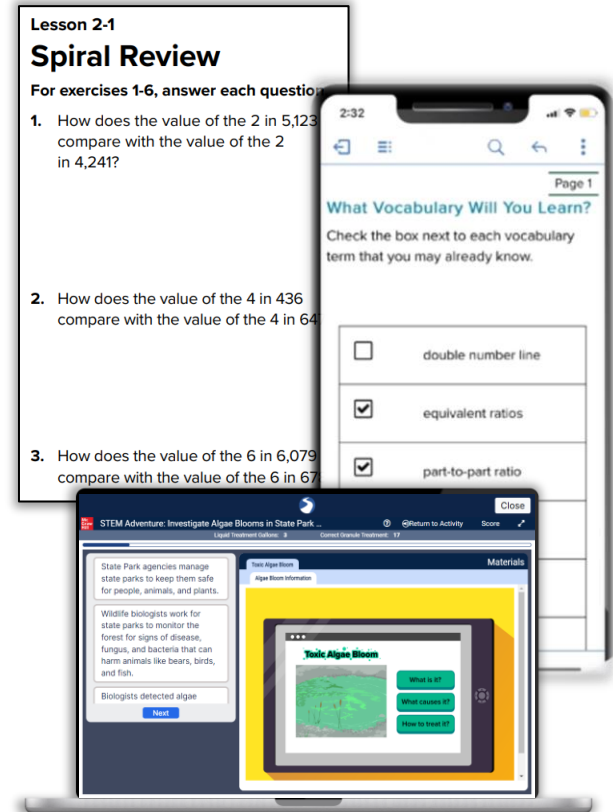
What do you notice? What do you wonder?



Comprehensive Learning Solution

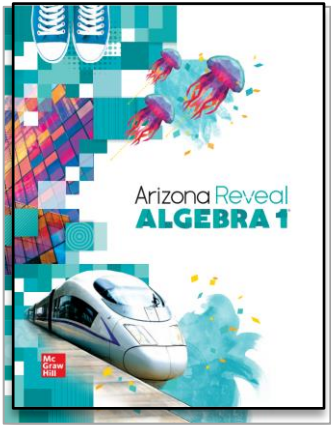


ALEKS®

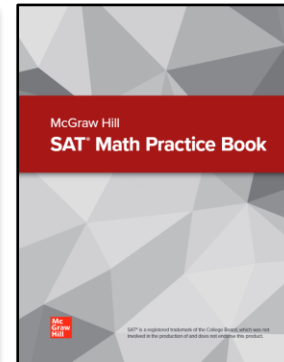
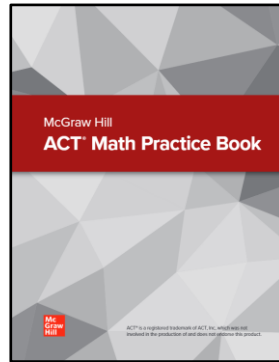


Arizona Reveal
MATH™

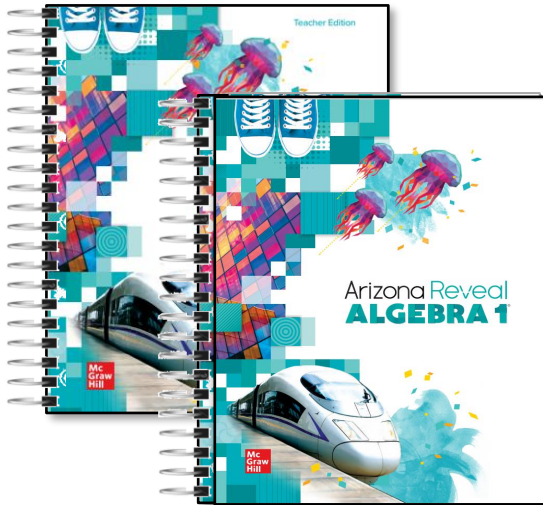
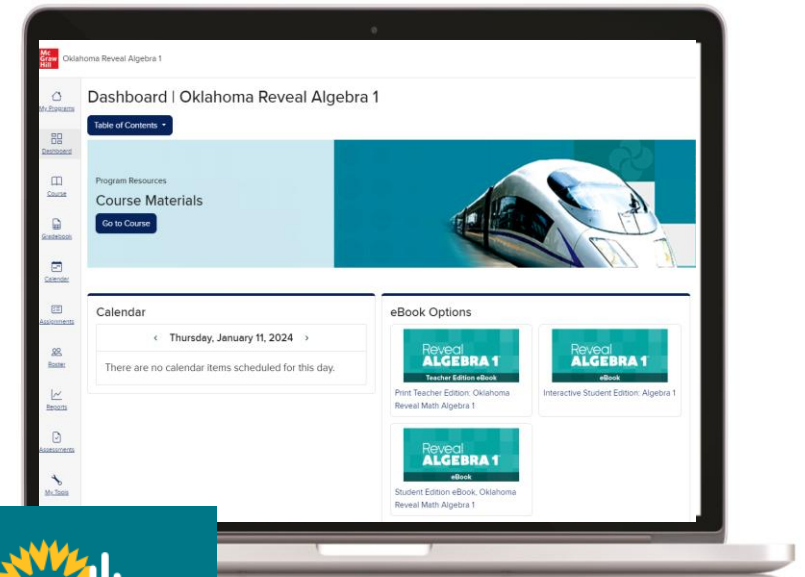
Robust Print and Digital Experience



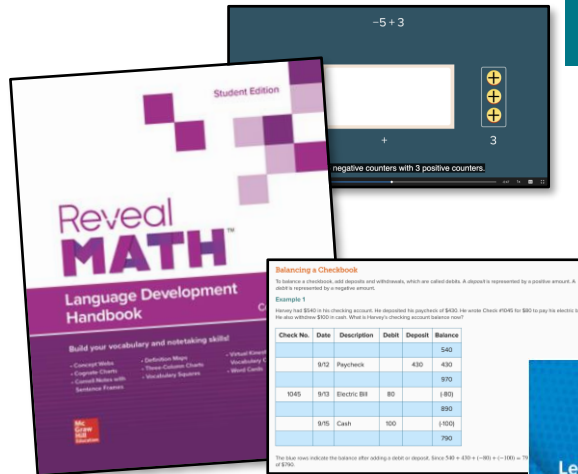
Interactive Volumes
Student Edition



Assessments &
ACT/SAT Prep



2 Volume
Teacher Edition

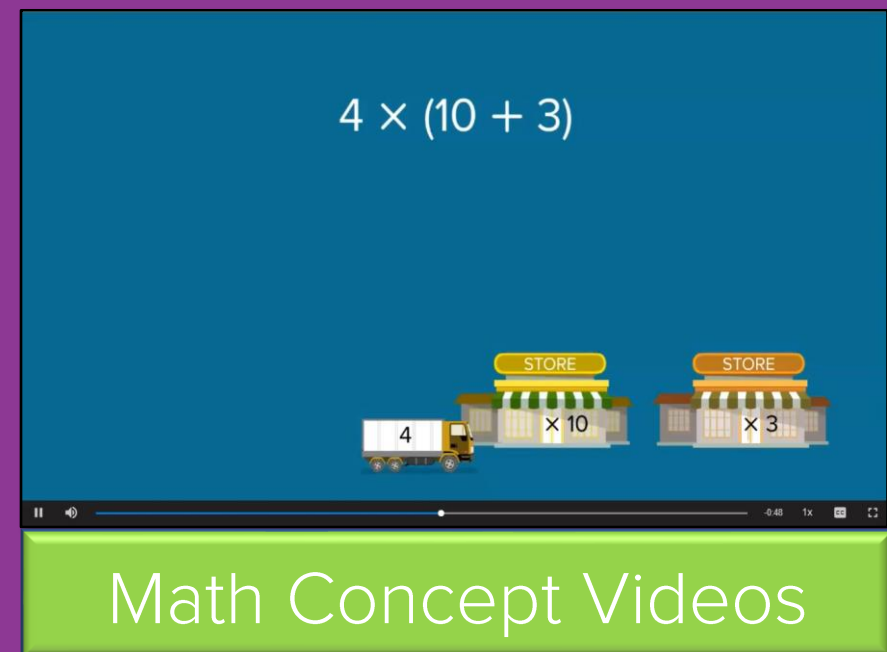
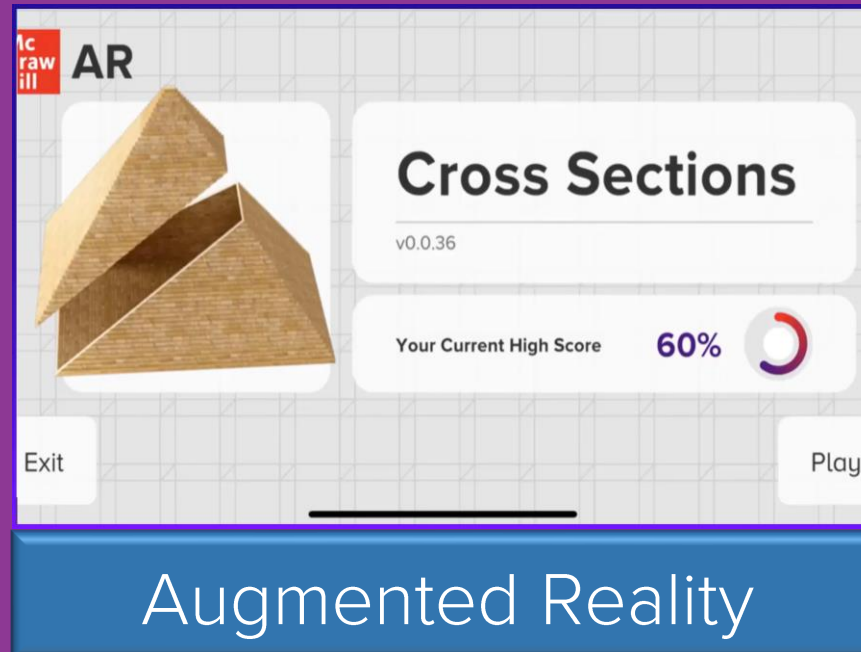
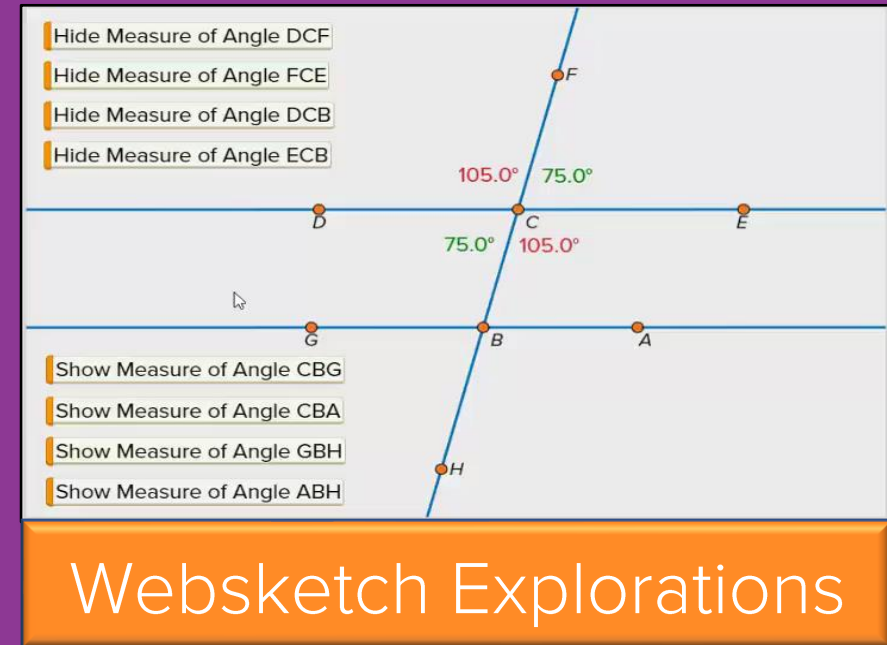
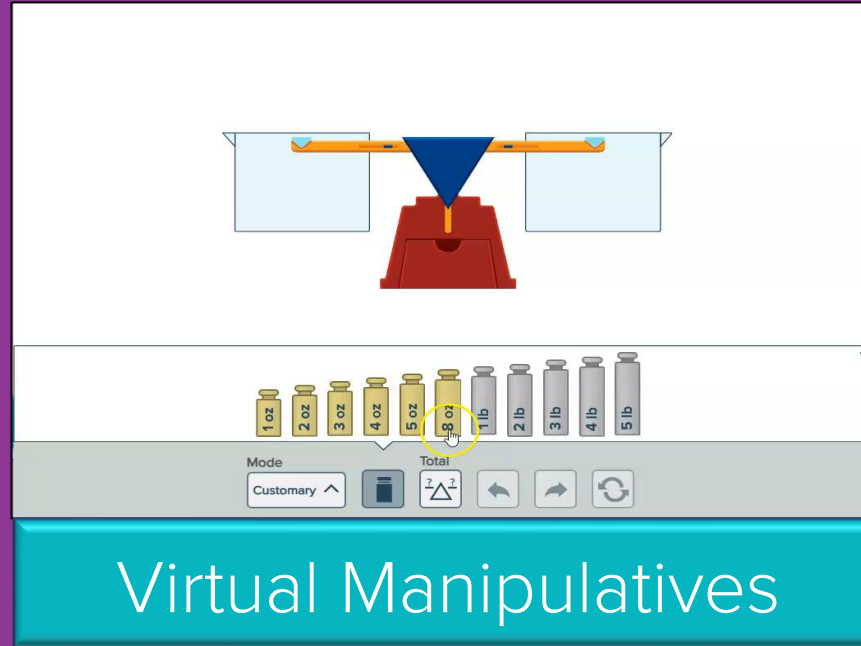
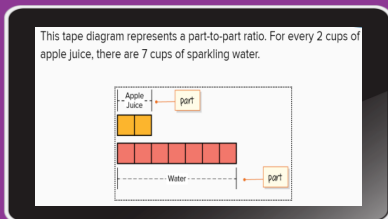


Support for 243 Languages+

Ready Made Daily Differentiation

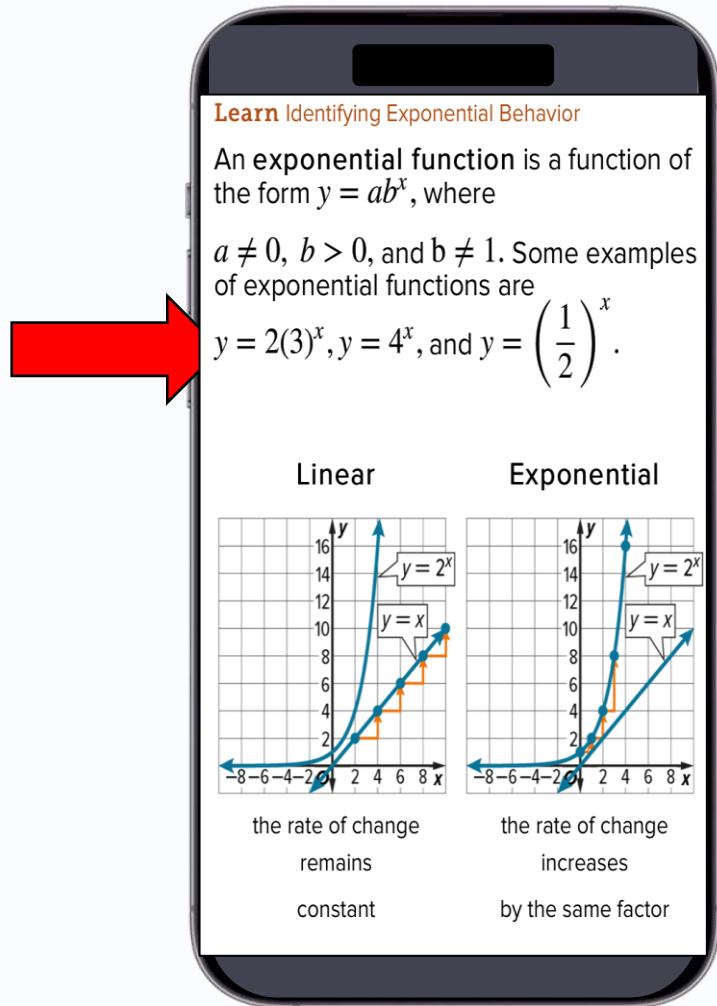


Hands-on learning with digital tools helps make content more digestible!



Yes! There's an app for that!

Anytime – No Internet Connection Needed!



McGraw Hill
K-12 Portal App
Offline Access



Phone, iPad, Chromebook, or Tablet



Google Classroom

Clever



IMS GLOBAL®



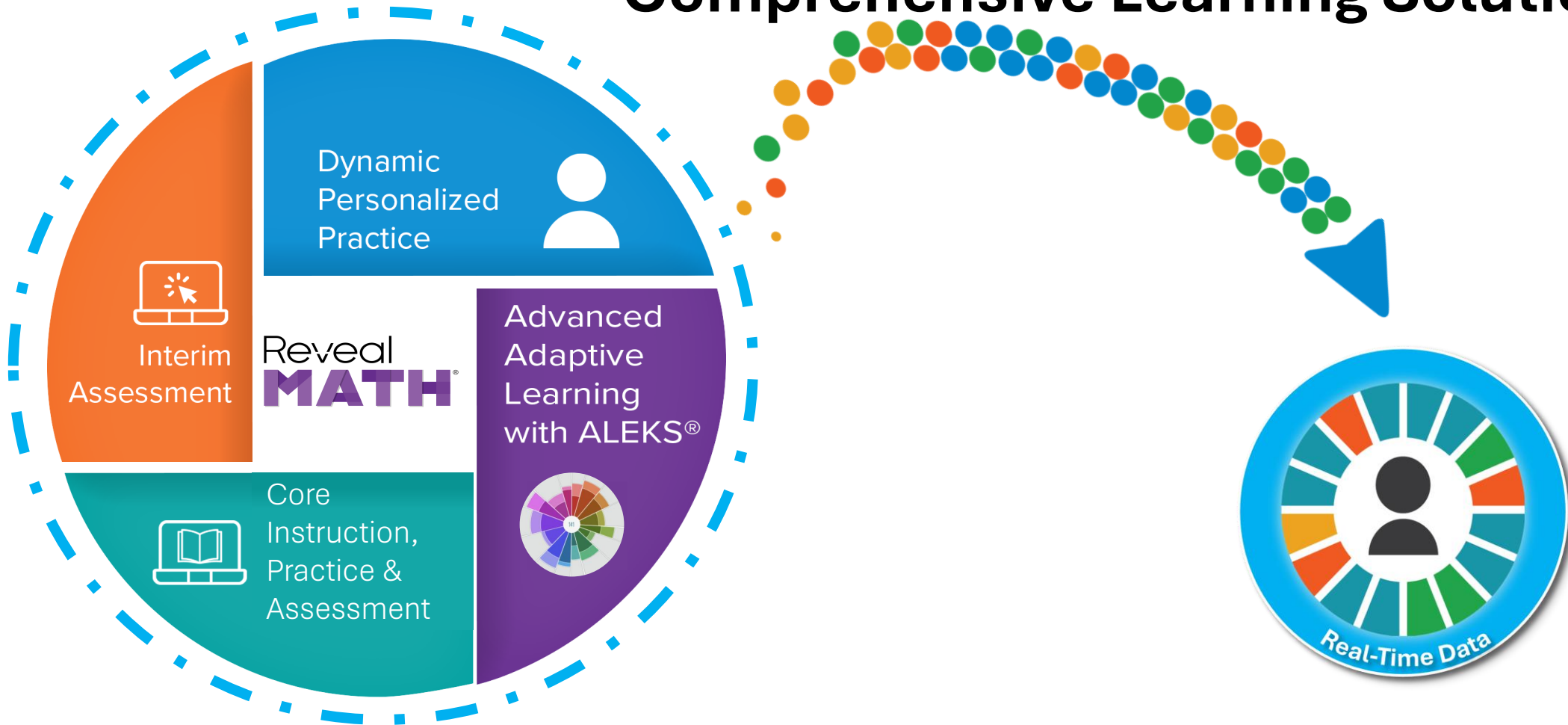
SSO Integration
LMS Integration

- Assignment Sync
- Grade Passback

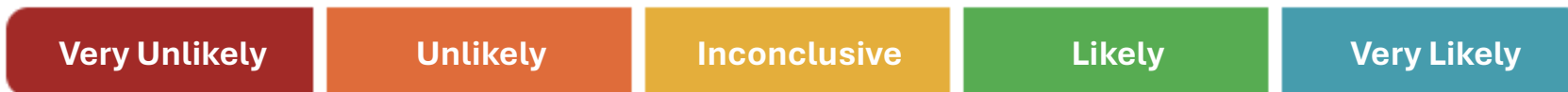


canvas

Comprehensive Learning Solution



Overall Proficiency



Projected State Assessment Proficiency

Building Student Agency in Algebra 1

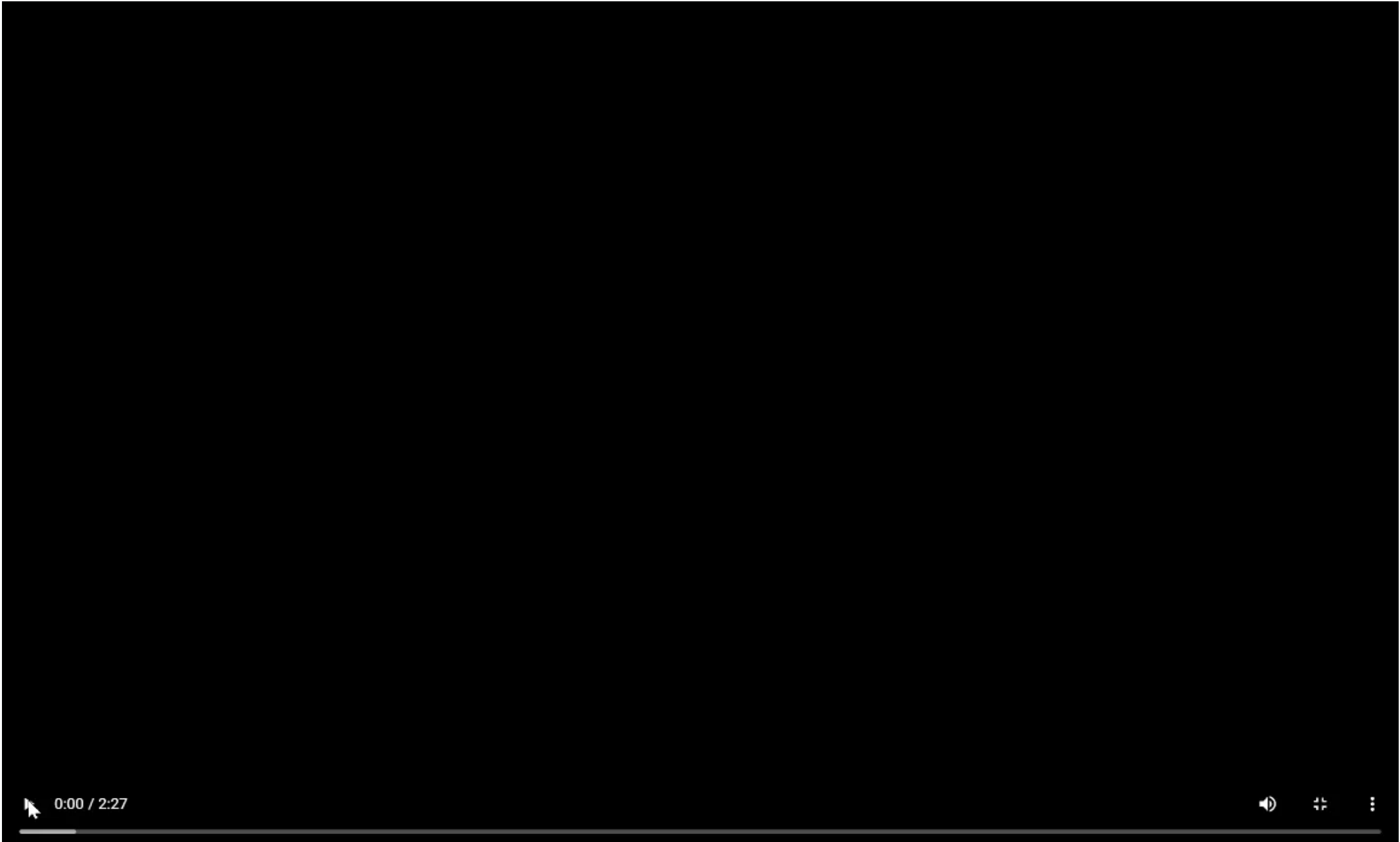


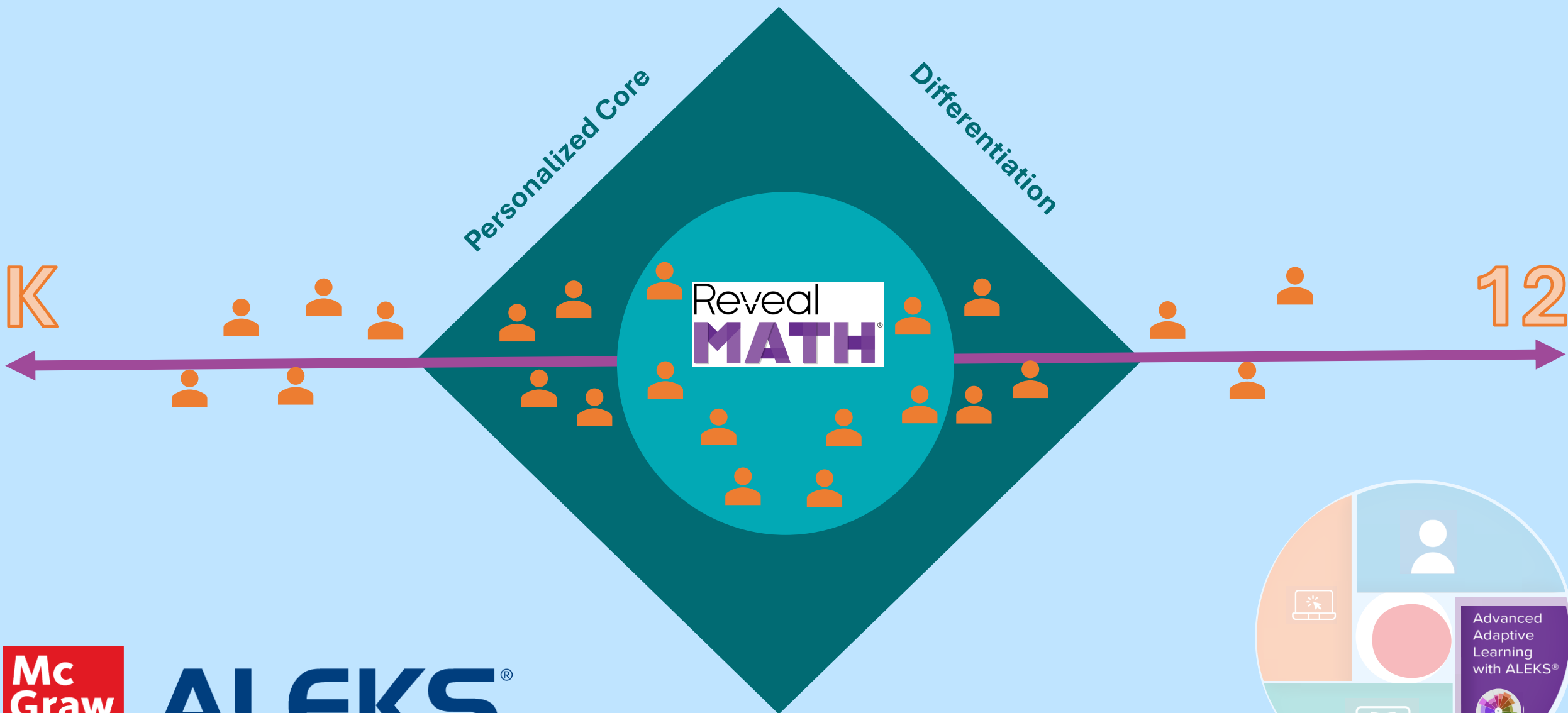
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Building Student Agency in Algebra 1





Adaptive, Personalized Learning Solution



ALEKS[®]

- **Grades K through Calculus**
- Personalized & Adaptive
- Provides Instruction AND Practice
- Acceleration or Remediation
- Special Education
- Gifted
- **English & Spanish**

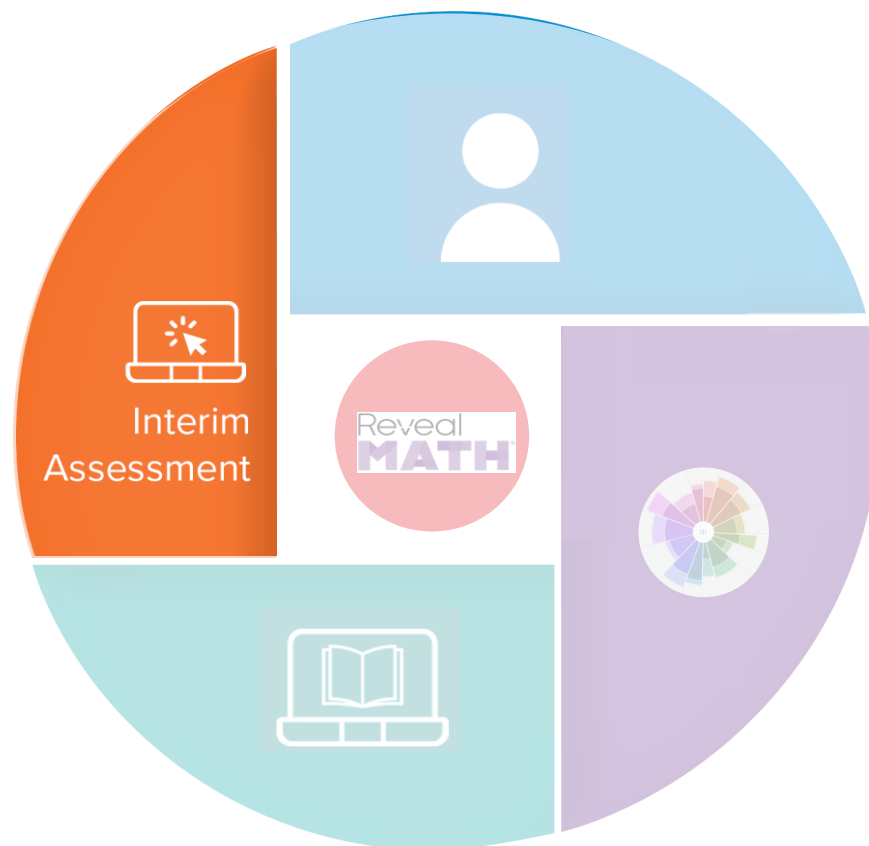




PRoPL

Math Interim Assessment Suite

Pearson Review of Progress and Learning

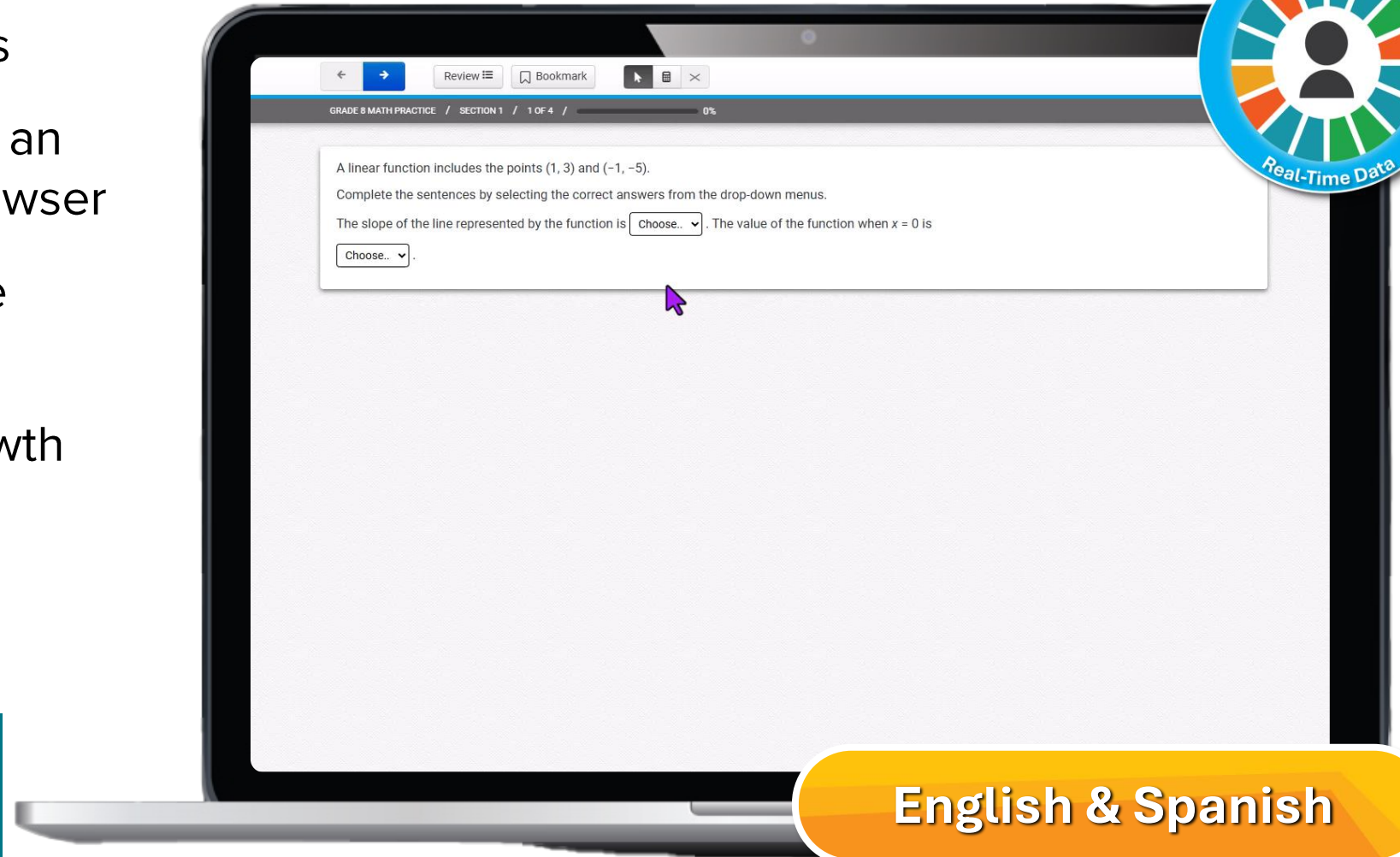


- ✓ Aligned to the Standards
- ✓ Benchmark Progress with Norm-Referenced Interims
- ✓ Ensures test integrity with an Embedded Lockdown Browser
- ✓ Adapts in Real Time at the Item Level
- ✓ Surfaces Strengths & Growth Areas in just 30 Minutes
- ✓ Confidently Predicts State Assessment Performance



PROPL

Math Interim Assessment Suite



Proficiency Graph

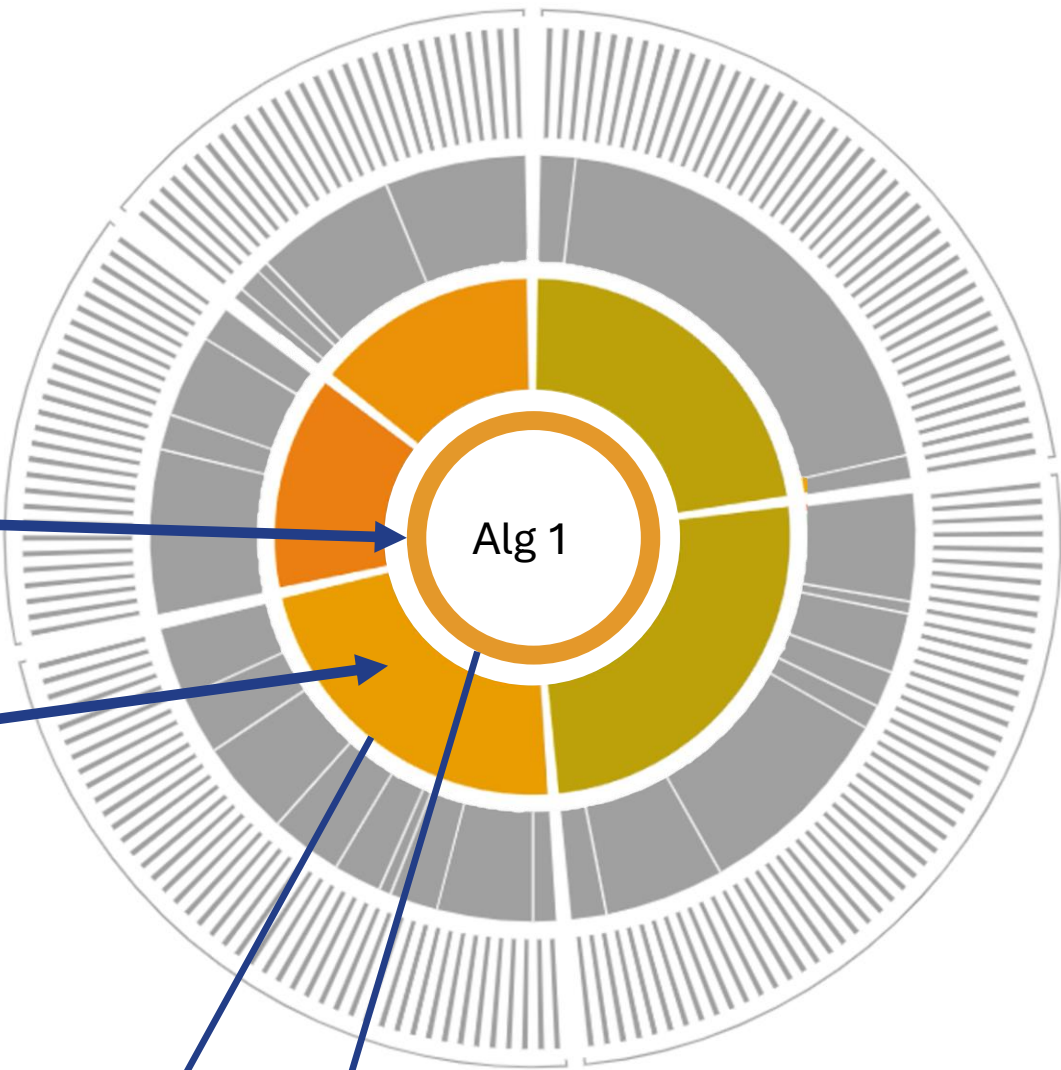
Multiple Data Sources Pulled Into One Location
Clear Picture of Class & Student Learning

Overall

3 times a year, Interim Assessment

Domain

3 times a year, Interim Assessment



Proficiency Graph

Multiple Data Sources Pulled Into One Location

Clear Picture of Class & Student Learning

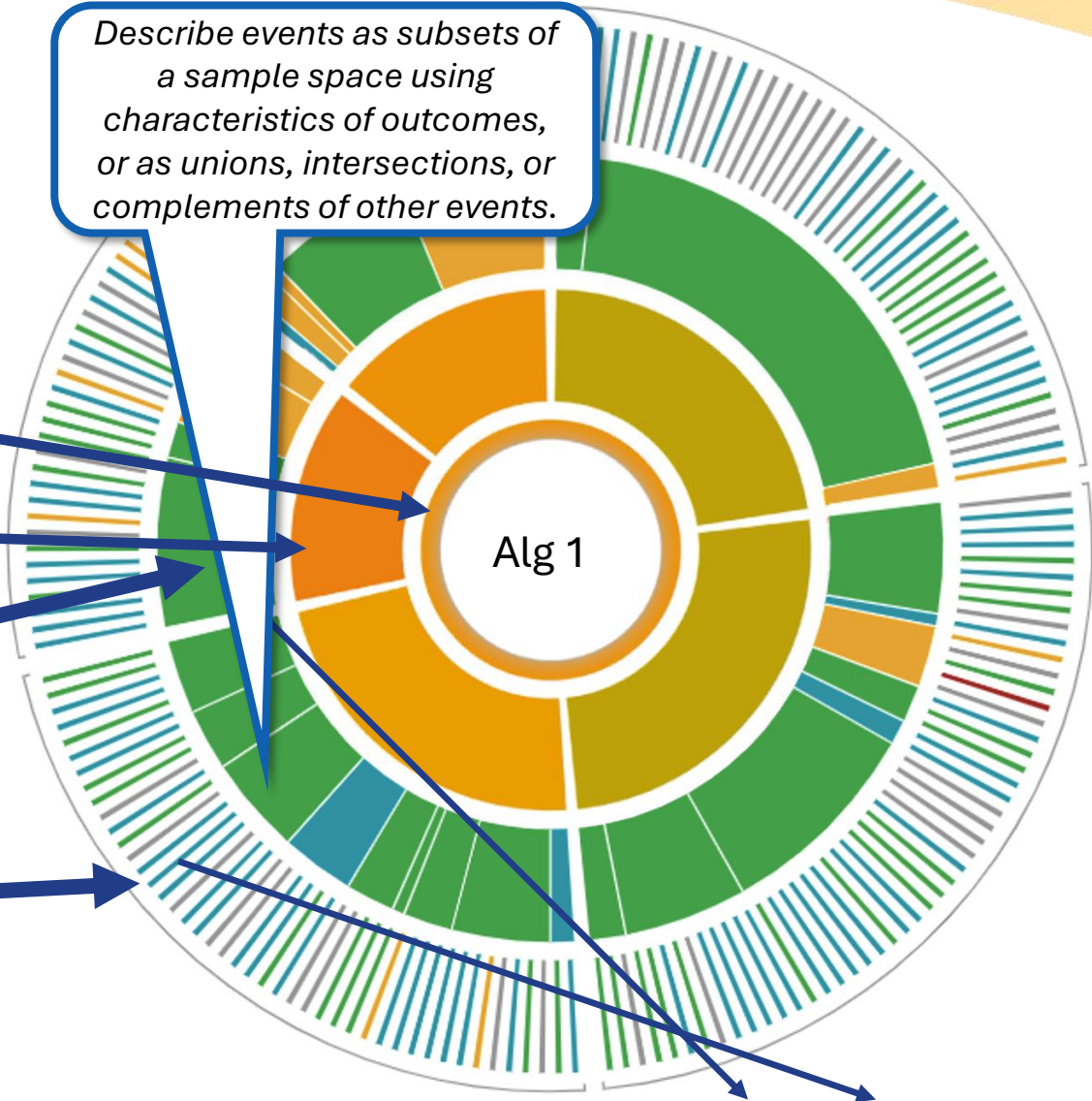
Overall

Domain

Standard
Daily, Core Practice & Assessment, ALEKS

Skill
Daily, Core Practice & Assessment, ALEKS

Describe events as subsets of a sample space using characteristics of outcomes, or as unions, intersections, or complements of other events.



Proficiency Scale - Percentile

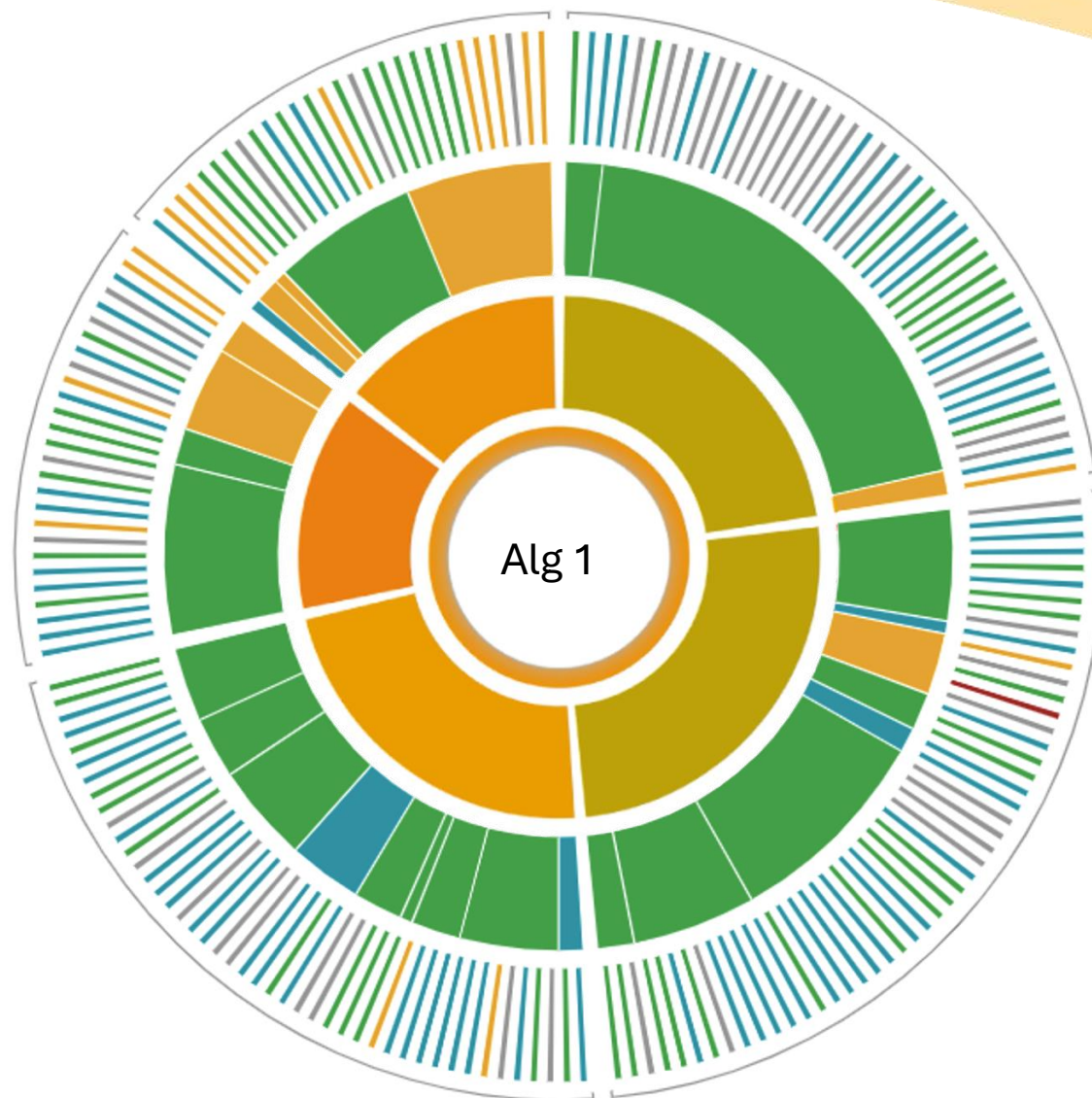


Proficiency Graph

Multiple Data Sources Pulled Into One Location

Clear Picture of Class & Student Learning

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





Arizona Reveal
MATH[®]



Arizona Reveal **ALGEBRA 1**[®]

CONTENTS

- MODULE 1** EXPRESSIONS
- MODULE 2** EQUATIONS IN ONE VARIABLE
- MODULE 3** RELATIONS AND FUNCTIONS
- MODULE 4** LINEAR AND NONLINEAR FUNCTIONS
- MODULE 5** CREATING LINEAR EQUATIONS
- MODULE 6** LINEAR INEQUALITIES
- MODULE 7** SYSTEMS OF LINEAR EQUATIONS AND INEQUALITIES
- MODULE 8** EXPONENTS AND ROOTS
- MODULE 9** EXPONENTIAL FUNCTIONS
- MODULE 10** POLYNOMIALS
- MODULE 11** QUADRATIC FUNCTIONS
- MODULE 12** STATISTICS



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Module Structure



Launch



Lessons



Close



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Module Structure

Module Structure & Suggested Pacing



Lessons		Standards	45-min classes	90-min classes
Module Pretest and Launch the Module Video			1	0.5
4-1	Graphing Linear Functions	A1.A.1.1, A1.A.4.1, A1.F.3.1	1	0.5
4-2	Rate of Change and Slope	A1.A.4.1, A1.A.4.2	1	0.5
4-3	Slope-Intercept Form	A1.A.4.3, A1.A.4.4, A1.A.4.5, A1.F.3.1	2	1
4-3	Expand Linear Growth Patterns	A1.A.4.3, A1.A.4.4, A1.A.4.5, A1.F.3.1	1	0.5
4-4	Transformations of Linear Functions	A1.F.2.2	2	1
4-5	Piecewise and Step Functions	A1.F.1.2, A1.F.1.4, A1.F.2.1	1	0.5
4-6	Absolute Value Functions		2	1
Put It All Together: Lessons 4-5 through 4-6			1	0.5
Module Review			1	0.5
Module Assessment 5			1	0.5
Total Days			14	7.0



Formative Math Probes: Target Common Misconceptions



Cheryl Tobey

NAME _____ DATE _____ PERIOD _____

Cheryl Tobey Math Probe
Absolute Value Functions

Determine which graph, if any, could represent each function.

Graph A

Graph B

Graph C

Graph D

Circle your choice.	Explain your choice.
1. $y = x + 4 $ A. Graph A B. Graph B C. Graph C D. Graph D E. Need more information	
2. $y = x + 4$ A. Graph A B. Graph B C. Graph C D. Graph D E. Need more information	
3. $y = x - 4 $ A. Graph A B. Graph B C. Graph C D. Graph D E. Need more information	
4. $y = x - 4$ A. Graph A B. Graph B C. Graph C D. Graph D E. Need more information	
5. $y - 4 = x $ A. Graph A B. Graph B C. Graph C D. Graph D E. Need more information	

Cheryl Tobey Math Probe • Absolute Value Functions

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1

Analyze the Probe

Review the probe prior to assigning it to your students.

In this probe, students will determine which graph matches the correct function and explain their choices.

Targeted Concepts Certain modifications to the parent function of an absolute value function will result in predictable transformations of the graph.

Targeted Misconceptions

- Students may not recognize a horizontal transformation and/or predict an incorrect direction of a horizontal transformation.
- Students may not recognize a vertical transformation and/or predict an incorrect direction of a vertical transformation.

Use the Probe after Lesson 4-7.

CHERYL TOBEY MATH PROBES Formative Assessment Math Probe
Absolute Value Functions

Analyze the Probe
Review the probe prior to assigning it to your students.

Take Action
After the Probe Design a plan to address any possible misconceptions. You may wish to assign the following resources.

- **ALEKS** Absolute Value Functions
- Lesson 4-7, all Learns, all Examples

Revisit the probe at the end of the module to be sure that your students no longer carry these misconceptions.

Module Resource

Cheryl Tobey Math Probe
Absolute Value Functions

Directions: Review each graph. If you think it could represent the function, write the letter of the graph in the box next to the function.

Function	Graph A	Graph B	Graph C	Graph D
1. $y = x + 4 $				
2. $y = x + 4$				
3. $y = x - 4 $				
4. $y = x - 4$				
5. $y - 4 = x $				

Collect and Assess Student Work & Take Action

2

Collect and Assess Student Answers	
If the student selects these responses...	Then the student likely...
1. D 3. B	recognizes the horizontal shift but fails to use the opposite value of the number associated with x to determine the direction of the shift. Example: For Item 1, the student recognizes that positive 4 is associated with the x -value (horizontal shift) but moves the graph to the right.
2. A 4. C	recognizes the horizontal shift but fails to use the opposite value of the number associated with x to determine the direction of the shift. Example: For Item 2, the student recognizes that positive 4 is associated with the x -value (horizontal shift) but moves the graph to the right.
5. A	recognizes the horizontal shift but fails to use the opposite value of the number associated with x to determine the direction of the shift. Example: For Item 5, the student recognizes that positive 4 is associated with the x -value (horizontal shift) but moves the graph to the right.
1. A 2. D 3. C 4. B	confuses a horizontal shift with a vertical shift Example: For Item 3, the student incorrectly moves the graph up 4 units instead of to the right 4 units.

4. A 5. C

3

Take Action

After the Probe Design a plan to address any possible misconceptions. You may wish to assign the following resources.

-  **ALEKS**® Absolute Value Functions
- Lesson 4-7, all Learns, all Examples

Revisit the probe at the end of the module to be sure that your students no longer carry these misconceptions.

Readiness Diagnostic

Student Name: _____ Date: _____

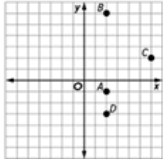
Module Pretest (RA1 M4)

7) Solve $6x + 2y = 26$ for y .

☐ $y = -3x - 13$
☐ $y = 3x - 13$
☐ $y = -3x + 13$
☐ $y = 3x + 13$

8) Evaluate $\frac{a-b}{c}$, when $a = 3$, $b = -8$, $c = 5$, and

9) What is the ordered pair for point C?



☐ (2, 6)
☐ (6, 2)
☐ (2, -3)
☐ (2, -1)

10) Fill in the blanks using the available answer choices.
 A reflection is a transformation where an object is

Blank 1 options

- enlarged
- flipped
- slid

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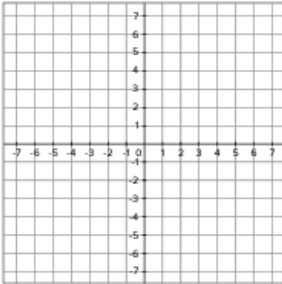
Student Name: _____ Date: _____

Module Pretest (RA1 M4)

1) Evaluate $3m - 2 + 8k$, when $m = 7$ and $k = -2$.

☐ 3
☐ 35
☐ 7
☐ 19

2) Plot $(2, 0)$, $(-5, -2)$, $(-5, 4)$, and $(3, -1)$.



3) True or false: $|8| = 8$

☐ True
☐ False

4) Evaluate $|x - 4| + 2x$, when $x = -1$.

5) Amelia has y marbles. She gives Greta 5 and is left with 9 for herself. Write an equation that shows this relationship.

6) Solve $3 + y = 18$ for y .

$y =$ _____

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1/2

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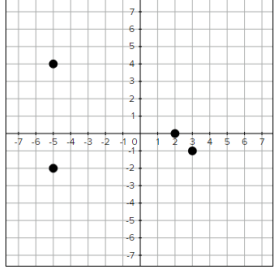
Module Pretest (RA1 M4)

Question 2 of 10

Question 2

Plot $(2, 0)$, $(-5, -2)$, $(-5, 4)$, and $(3, -1)$.

Point Clear Undo



Next Question Done and Review



NAME _____ DATE _____ PERIOD _____

IGNITE! Mathematical Modeling
What's in Your Piggy Bank?

Lola is saving to buy a new scooter. Each day, she saves her quarters in a jar. The total number of quarters in the jar each day is shown. Study the pattern.



What do you notice?	What questions can you ask?

Talk About It! Share your observations and questions with a partner.

You will work with your partner to answer this question: **How many quarters are in the jar after 20 days? What about after 100 days?**

Analyze the Problem

1. What assumptions are you making? Why are you making these assumptions?
2. What constraints, if any, need to be considered? How might they affect the solution?

Lola is saving to buy a new scooter. Each day, she saves her quarters in a jar. The total number of quarters in the jar each is shown. Study the pattern.



What do you notice?

What questions can you ask?

IGNITE! Activities

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

- Dr. Raj Shah



What assumptions are you making?
Why are you making these assumptions?

Share your observations and questions
with a partner.

NAME _____ DATE _____ PERIOD _____

IGNITE! Mathematical Modeling
What's in Your Piggy Bank?

Lola is saving to buy a new scooter. Each day, she saves her quarters in a jar. The total number of quarters in the jar each day is shown. Study the pattern.



What do you notice?	What questions can you ask?

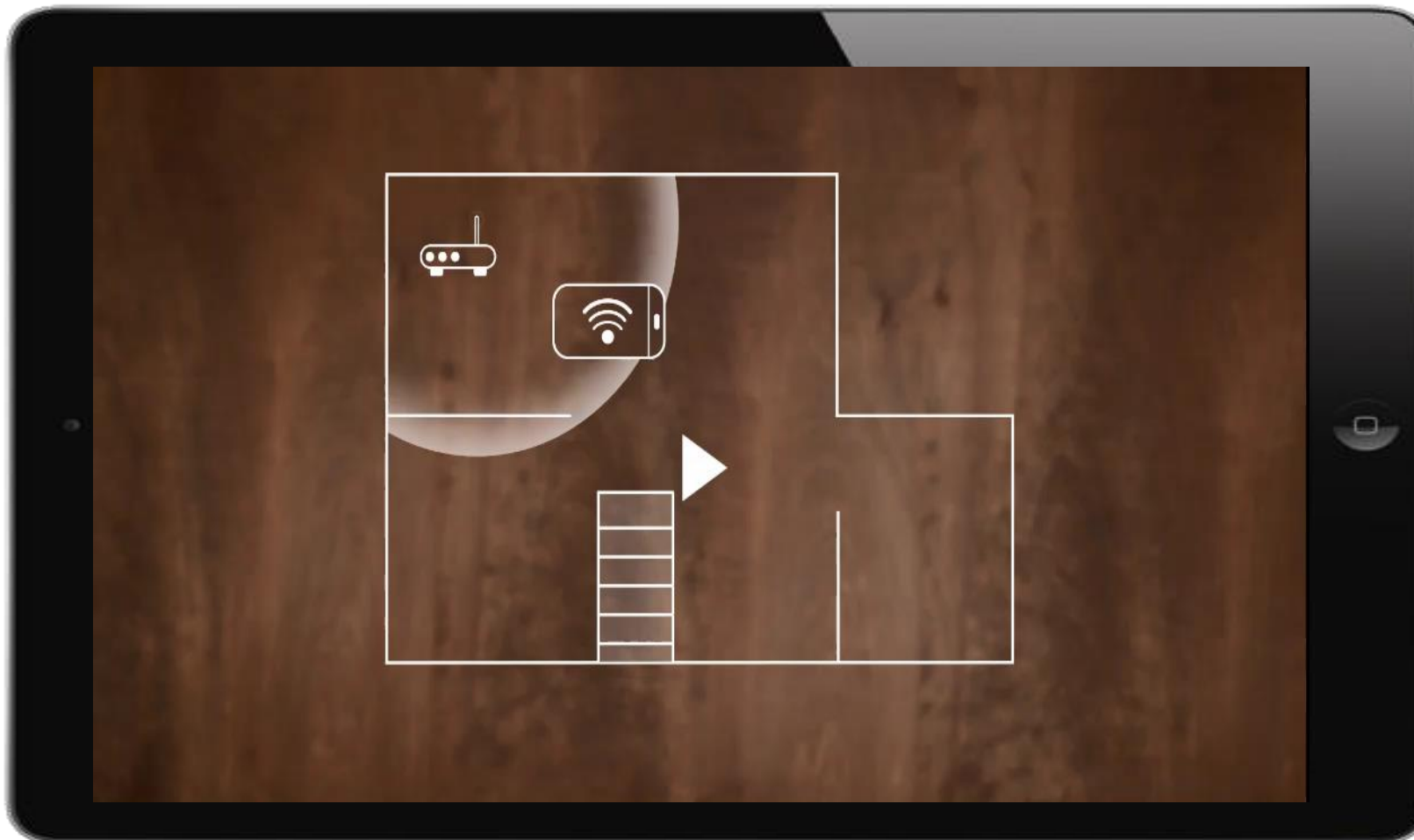
Analyze the Problem

Ignite - What's in Your Piggy Bank? © McGraw-Hill Education

Math in Action Videos – Real World Application

What can a function tell you about the relationship that it represents?

 **Essential Question**





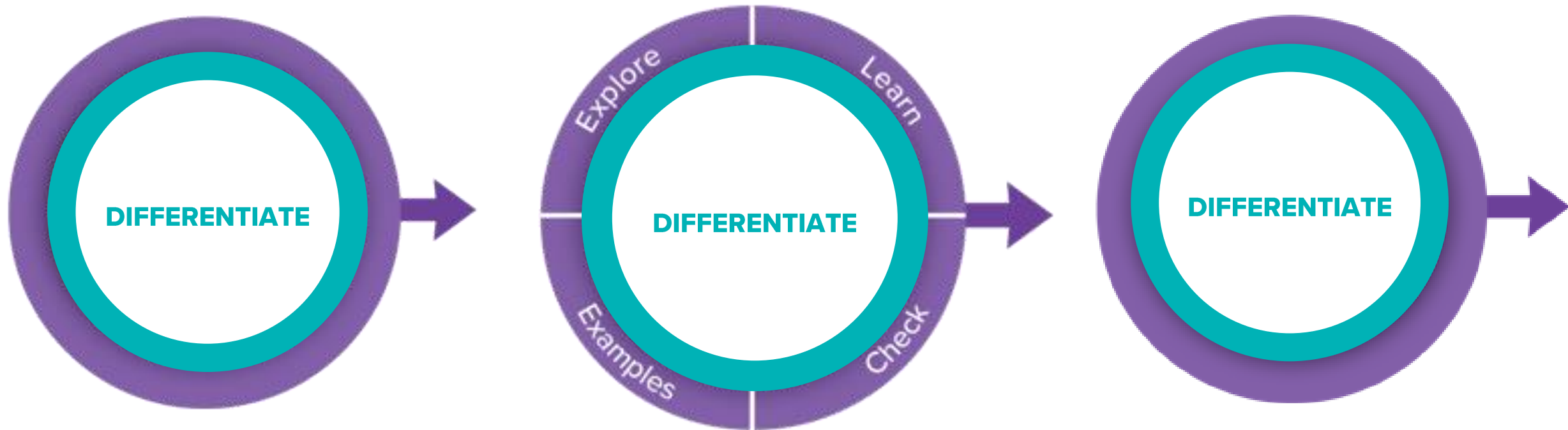
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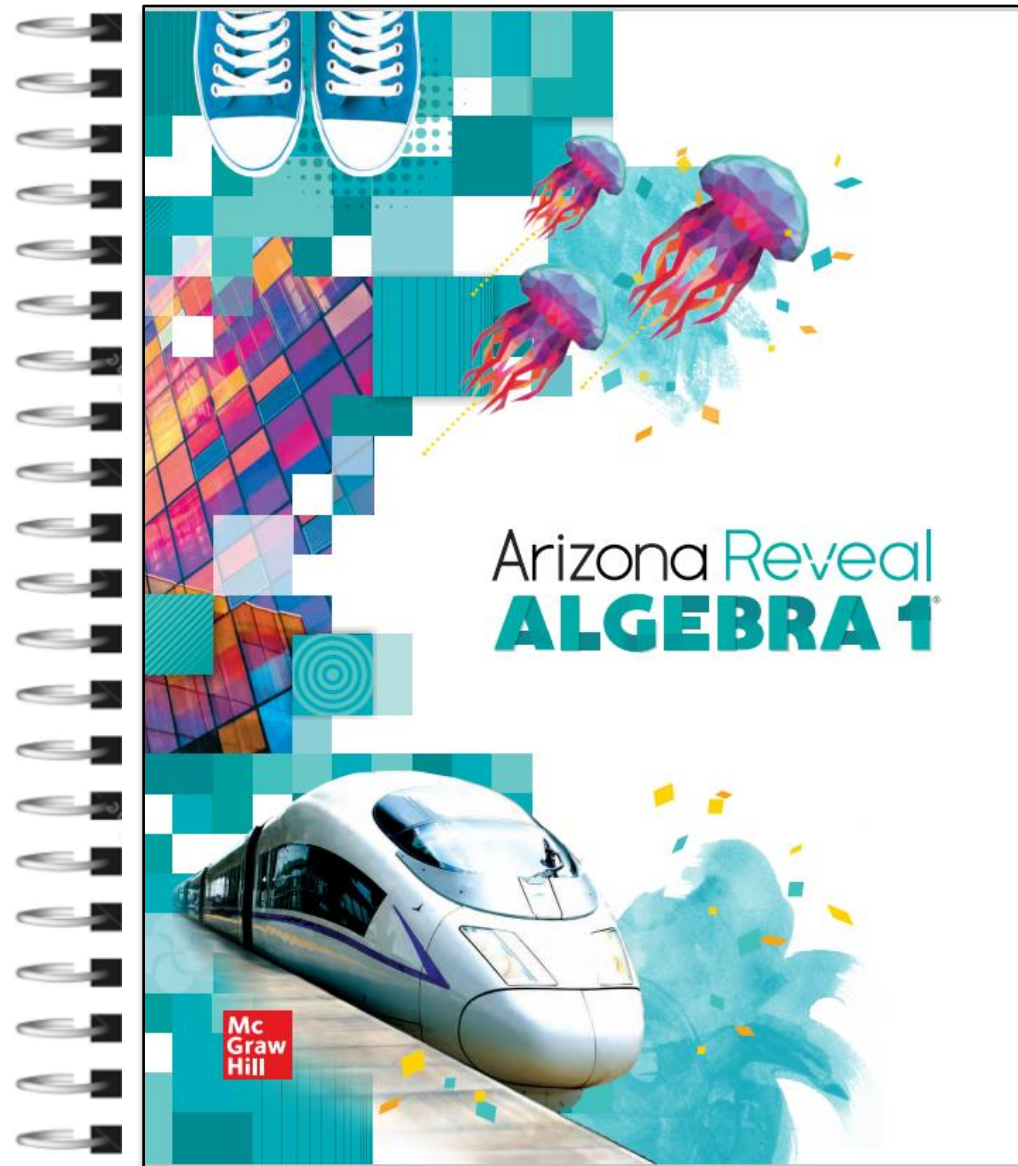
Lessons

Lesson Structure

Flexible Lesson Structure



Explore Algebra 1 – Lesson 4 - 3:
Slope-Intercept Form



Print Teacher Edition

1 LAUNCH



Launch the lesson with a **Warm Up** and an introduction.

2 EXPLORE AND DEVELOP



Develop:

Writing Linear Equations in Slope-Intercept Form

- Write Linear Equations in Slope-Intercept Form
- Rewrite Linear Equations in Slope-Intercept Form
- Write Linear Equations

DIFFERENTIATE



View reports of student progress on the **Checks** after each example.

Resources

Remediation: Slope of a Line

Extension: Pencils of Lines

AL

OL

BL

ELL



Language Development Handbook

Assign page 22 of the *Language Development Handbook* to help your students build mathematical language related to equations in slope-intercept form.

ELL You can use the tips and suggestions on page T22 of the handbook to support students who are building English proficiency.



Rigor

The Three Pillars of Rigor

1 CONCEPTUAL UNDERSTANDING

2 FLUENCY

3 APPLICATION



Conceptual Bridge In this lesson, students extend their understanding of slope. They build fluency by rewriting equations in slope-intercept form to find the slope and y-intercept. They apply their understanding by solving real-world problems involving slope and y-intercept.

- Graph Constant Functions
- Use Graphs of Linear Functions



You may want your students to complete the **Checks** online.

PREVIOUS

Students found and interpreted the rate of change and slopes of lines.
PAA.2.1, A1.F.3, A1.D.1

Mathematical Background

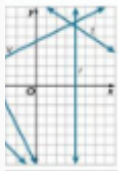
The slope-intercept form of a linear equation is $y = mx + b$, where m is the slope, and b is the y-intercept. Writing a linear equation in this form is helpful when you want to graph the function. There are two methods that can be used. The first is to select two values of x , substitute those values into the equation to calculate the corresponding values of y , plot the resulting ordered pairs, and draw the line that passes through the points. The second method is to plot the y-intercept, use it as a starting point, and then use the slope to determine another point on the line. The line can then be drawn through the two points.

1 LAUNCH

Interactive Presentation

Solve each problem

- Ella scored 17 points in her first basketball game and 22 points in her second game. How many points did Ella score in the games combined?
- Brent walked 6 blocks north, then 8 blocks east. How many blocks did Brent walk in all?
- A theater sold 85 tickets to one movie and 62 tickets to another movie. How many tickets did the theater sell to the two movies altogether?



Launch the Lesson

The minimum salary of a Major League Baseball player increased by an average of \$20,000 each year for ten years since 2004. In 2004, the minimum salary was \$300,000. We can use these data to predict the minimum salary of a Major League Baseball player many years into the future.



Launch the Lesson

Vocabulary

- parameter**
A value in the equation of a function that can be varied to obtain a family of functions.
- constant function**
A linear function of the form $y = c$.
- slope**
The constant rate of change in the equation of a line.

Today's Vocabulary

Warm Up

Prerequisite Skills

The Warm Up exercises address the following prerequisite skill for this lesson:

- identifying slopes

Answers:

- undefined
- 1
- $-\frac{2}{3}$
- $\frac{1}{2}$
- 2

Launch the Lesson

Teaching the Mathematical Actions and Processes:

Explain Correspondences Encourage students to explain the relationships between the verbal description and graphs representing the minimum salary for a Major League Baseball player.

Go Online to find additional teaching notes and questions to promote classroom discourse.

Today's Standards

Tell students that they will address these content and practice standards in this lesson. You may wish to have a student volunteer read aloud *How can I meet these standards?* and *How can I use these practices?*, and connect these to the standards.

See the Interactive Presentation for I Can statements that align with the standards covered in this lesson.

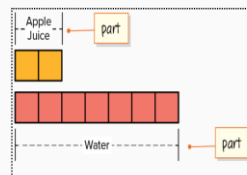
Today's Vocabulary

Tell students that they will use these vocabulary terms in this lesson. You can expand each row if you wish to share the questions below with the class.

Mathematical Background

The slope-intercept form of a linear equation is the slope, and b is the y -intercept. Writing a line is helpful when you want to graph the function that can be used. The first is to select two values into the equation to calculate the corresponding ordered pairs, and draw the line through the points. The second method is to plot the y -intercept, and then use the slope to determine another point on the line. The

This tape diagram represents a part-to-part ratio. For every 2 cups of apple juice, there are 7 cups of sparkling water.



2 EXPLORE AND DEVELOP

Explore Graphing Linear Functions by Using the Slope-Intercept Form

Objective

Students use a sketch to explore how changing the slope and y -intercept changes the graph of the line.

Teaching the Mathematical Actions and Processes:

Use Mathematical Tools Point out that to solve the problem in the Explore, students will need to use a sketch. Work with students to explore and deepen their understanding of slope-intercept form of a linear equation.

Ideas for Use

Recommended Use Present the Inquiry Question, or have a student volunteer read it aloud. Have students work in pairs to complete the Explore activity on their devices. Pairs should discuss each of the questions. Monitor student progress during the activity. Upon completion of the Explore activity, have student volunteers share their responses to the Inquiry Question.

What if my students don't have devices? You may choose to project the activity on a whiteboard. A printable worksheet for each Explore is available online. You may choose to print the worksheet so that individuals or pairs of students can use it to record their observations.

Summary of the Activity

Students will complete guiding exercises throughout the Explore activity. Students will use the sketch to explore how changing the value of m and b in the equation of a line affects the graph of the function. They will use sliders and animations to change the values of m and/or b in a linear equation, and observe the change in orientation of the related line. Then, students will answer the Inquiry Question.

(continued on the next page)

Interactive Presentation

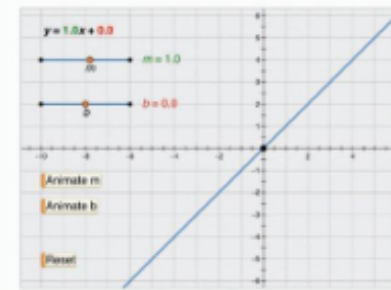
Graphing Linear Equations by Using the Slope-Intercept Form

Inquiry How do the quantities m and b affect the graph of a linear equation in slope-intercept form?

The slope-intercept form of a linear equation is $y = mx + b$, where m represents the slope and b represents the y -intercept. You can use the sketch to explore how changing the slope and the y -intercept changes the graph of the line and then complete the exercises.

Explore

The slope-intercept form of a linear equation is $y = mx + b$, where m represents the slope and b represents the y -intercept. You can use the sketch to explore how changing the slope and the y -intercept changes the graph of the line and then complete the exercises.



Explore

WEB SKETCHPAD



Students use a sketch to graph a line by changing the slope and y -intercept.

TYPE



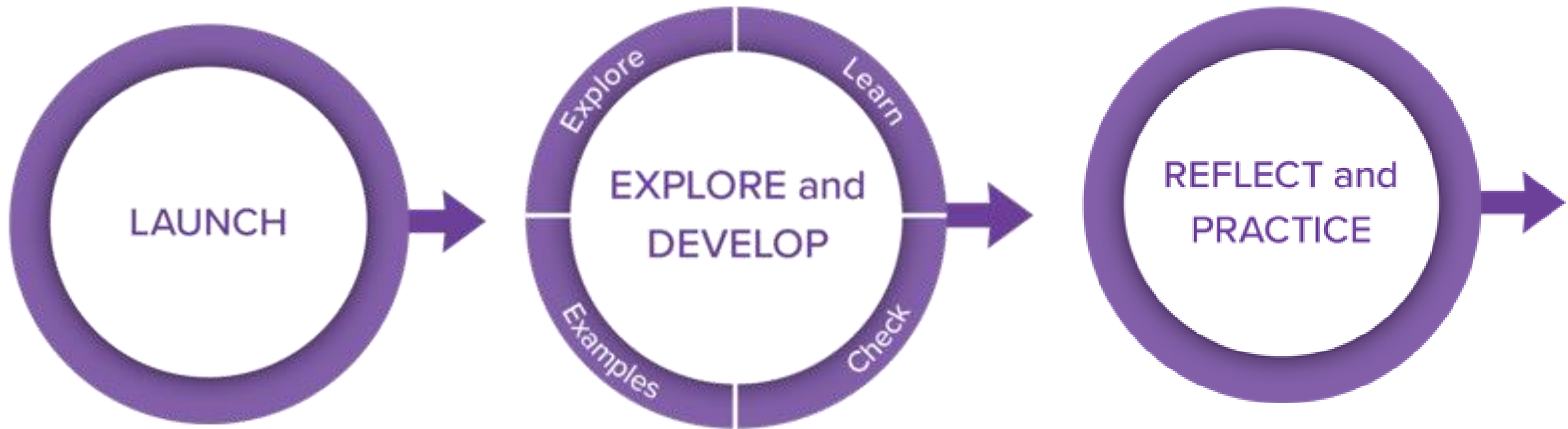
Students answer questions about changing the parameters in the slope-intercept form of a line.



Lesson Presentation

Lesson Structure

LAUNCH

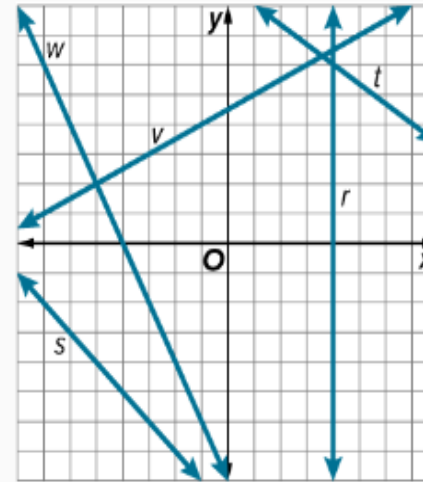


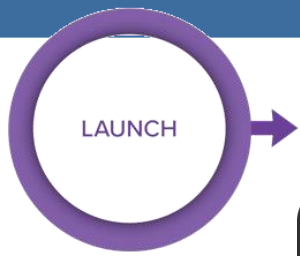
Warm Up

Warm Up

Use $\frac{\text{rise}}{\text{run}}$ to identify the slope of each line.

1. line r
2. line s
3. line t
4. line v
5. line w





Launch the Lesson

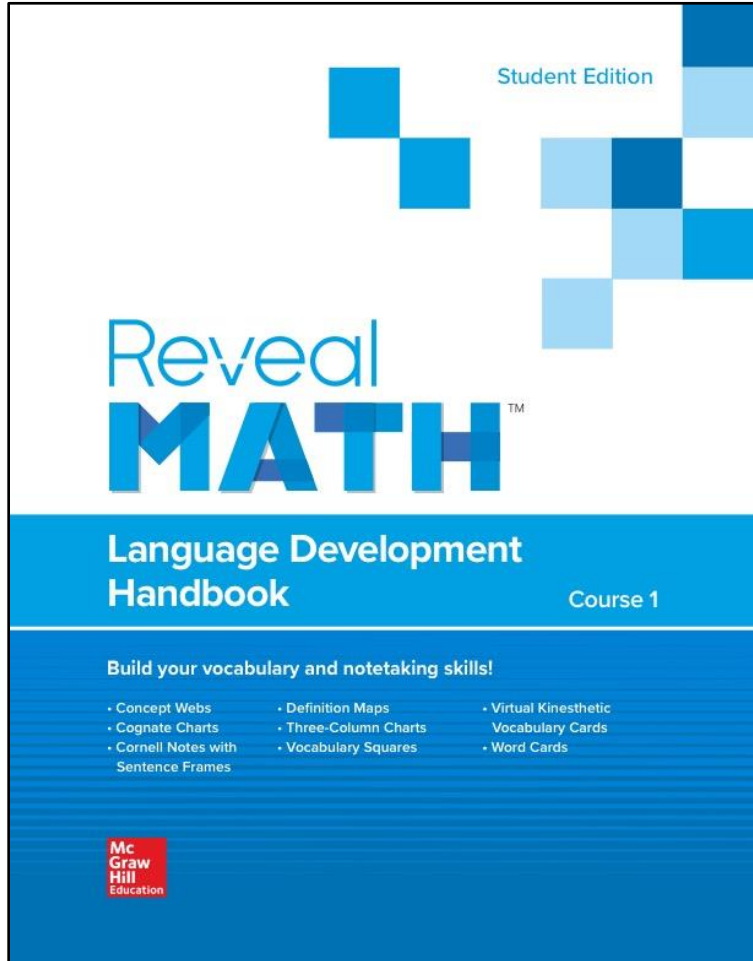
Vocabulary

Expand All

- > parameter
- > constant function
- > interval

1. What is the *parameter* in the linear function $y = ax$?
2. How do you know that the graph of a *constant function* is not a vertical line?

Language Development Handbook – Multilingual Learner Support for Each Lesson!



Slope-Intercept Form

English Learner Instructional Strategy

Vocabulary Support: Activate Prior Knowledge/Think-Pair-Share

Give students two minutes to write down everything they remember about equations. Then, ask students to call out what they remember and create a list on the board. Students should add any words their classmates share that they missed. Under the list on the board, add the vocabulary terms *slope-intercept form*, *parameter*, *constant function*, and *interval*, and emphasize and label the parts *slope* and *y-intercept* on the slope-intercept form of an equation. Distribute highlighters so students can emphasize this content. Point out the root word in *linear* to help students identify the characteristics of lines. Revisit the root word while graphing equations.

Three Reads

Ensure comprehension of the Check problem in the Student Book.

1st Read: Make sure students understand that they are being asked to create an equation that represents the number of people using a certain social media site since 2012.

2nd Read: Support comprehension of the terms: (first) quarter, users, increased by an average of, per year, and since. Make sure students understand that there are four quarters in a year.

3rd Read: Brainstorm ways to create the representative equation.

English Language Development Leveled Activities

Beginning Level	Intermediate Level	Advanced Level
Word Knowledge Ensure that students comprehend the meaning of the term <i>linear</i> . Distribute pieces of yarn to students, and ask them to manipulate the string to represent a linear relationship. Use words such as <i>steep</i> , <i>flat</i> , or <i>gradual</i> to prepare them for descriptions of the slope of the line. Have students draw their depictions and write the words in their notebooks.	Sentence Frames Ask students to write this sentence frame in their journals: When the slopes of two linear equations are the same, I think the lines will be _____ because _____. Circulate while students think through this, and offer suggestions if students seem stuck. Then, as a class, discuss how to complete the sentence.	Making Connections Write ten equations on index cards, some in slope-intercept form and some not. Ask small groups of students to sort the cards into those categories. Then, direct students to select the stack of equations that are not in slope-intercept form and rewrite them so that they are.

Multicultural Teacher Tip

English language learners may have difficulty describing the slope of a line due to a lack of academic language. Words like *steep* may not be learned until a student reaches a more advanced level. Expect students to use terms like *higher* and *lower* or *flatter*, and, if necessary, allow them to use bilingual dictionaries to describe the slope of a line when interpreting a graph.

NAME _____ DATE _____ PERIOD _____

Vocabulary

Slope-Intercept Form

Use the three-column chart to organize the vocabulary in this lesson. Write the word in your native language. Then write the definition of each word.

Three-Column Chart		
English	Native Language	Definition
slope-intercept form		
parameter		
constant function		
interval		

Language Development Handbook – Multilingual Learner Support for Each Lesson!

Slope-Intercept Form

English Learner Instructional Strategy

Vocabulary

Give students
ask students
add any words
vocabulary
emphasize
equation,
word in /in/
graphing

Vocabulary Support: Make Connections

Take students to different sets of staircases inside or outside of the school. Distribute tape measures to pairs of students and ask them to measure the height and depth of two steps from each staircase. Upon returning to class, connect the height of the steps to the term rise

Three Reads

English Language Development Leveled Activities

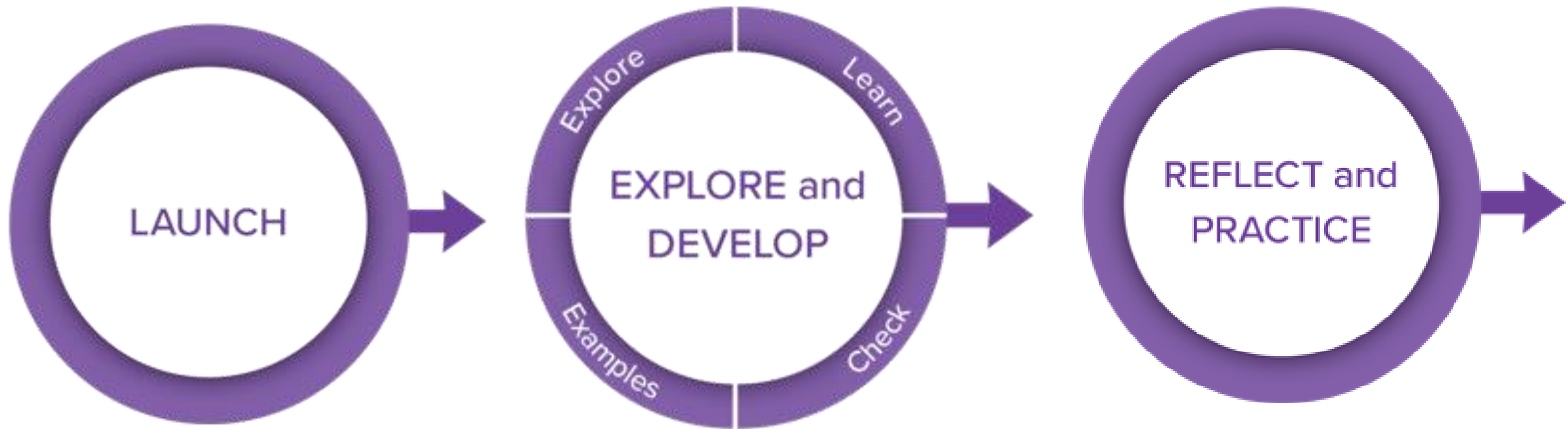
Beginning Level	Intermediate Level	Advanced Level
Word Knowledge The word <i>change</i> has many meanings in English. Ask students, <i>How many different ways can you think of to use the word change?</i> Allow students to work in pairs and create a list of meanings. Ask each pair to draw one or two of their meanings and share them with the class.	Show What You Know Distribute whiteboards and markers to students. Describe various slopes, such as positive, negative, zero, and no slope. Ask students to sketch a line representing each slope on the white board. Call on individual students to explain their drawings.	Listen and Write Ask students to write one or two sentences in response to each of the following prompts. <i>Describe a line with a positive slope.</i> <i>Describe a line with a negative slope.</i> <i>Describe a line with a slope of zero.</i>

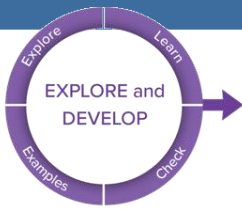
Teacher & Student Support for EVERY lesson that includes:

- Variety of Instructional Strategies
- Stanford Language Routines
- Scaffolds at 3 Language Acquisition Levels

Lesson Structure

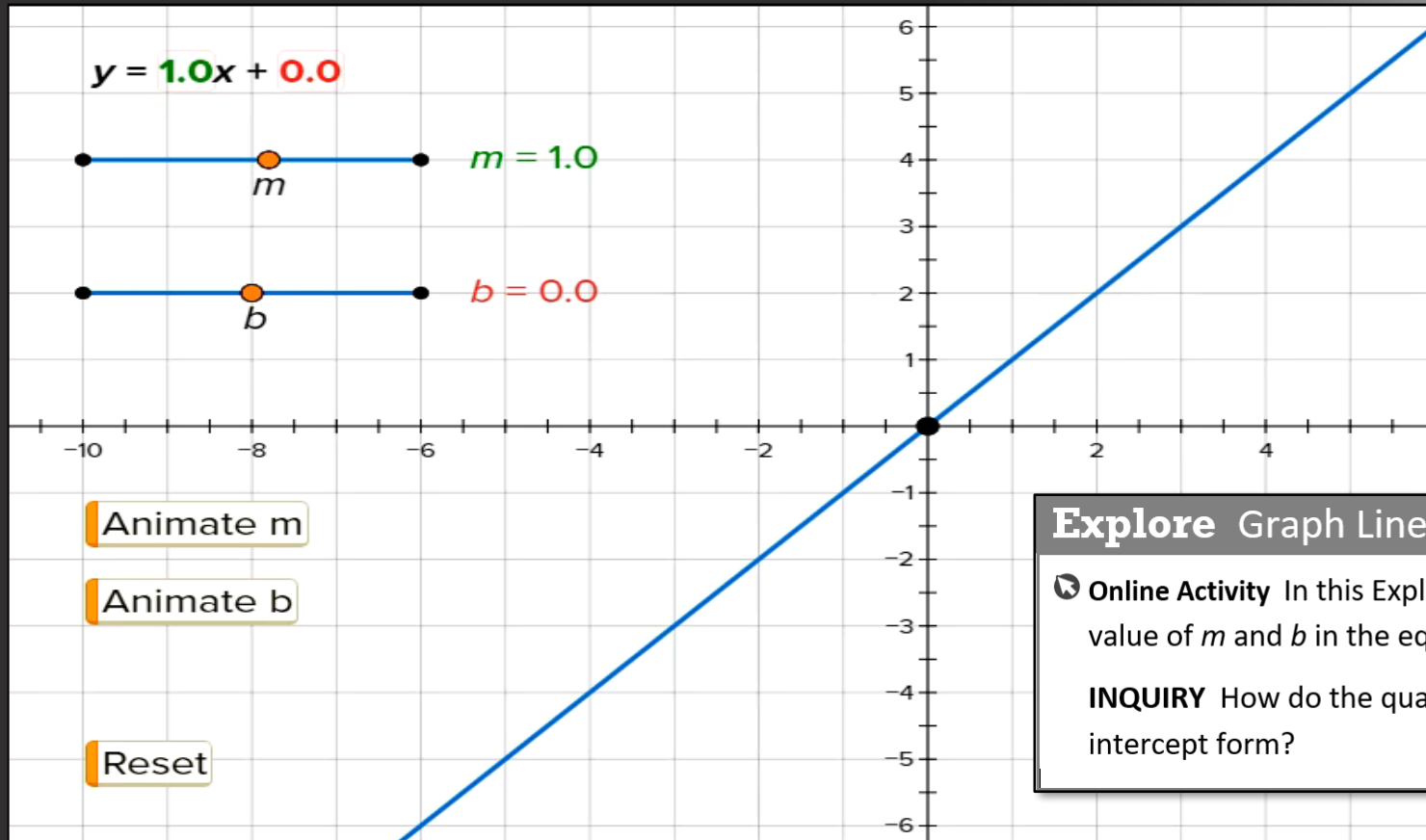
EXPLORE & DEVELOP





Explore & Develop

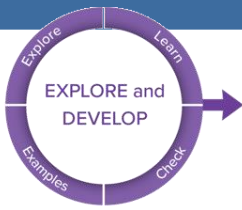
Explore Graphing Linear Functions by Using the Slope-Intercept Form



Explore Graph Linear Functions by Using the Slope-Intercept Form

Online Activity In this Explore, you will use a sketch to investigate how changing the value of m and b in the equation of a line affect its graph.

INQUIRY How do the quantities m and b affect the graph of a linear function in slope-intercept form?



Explore & Develop

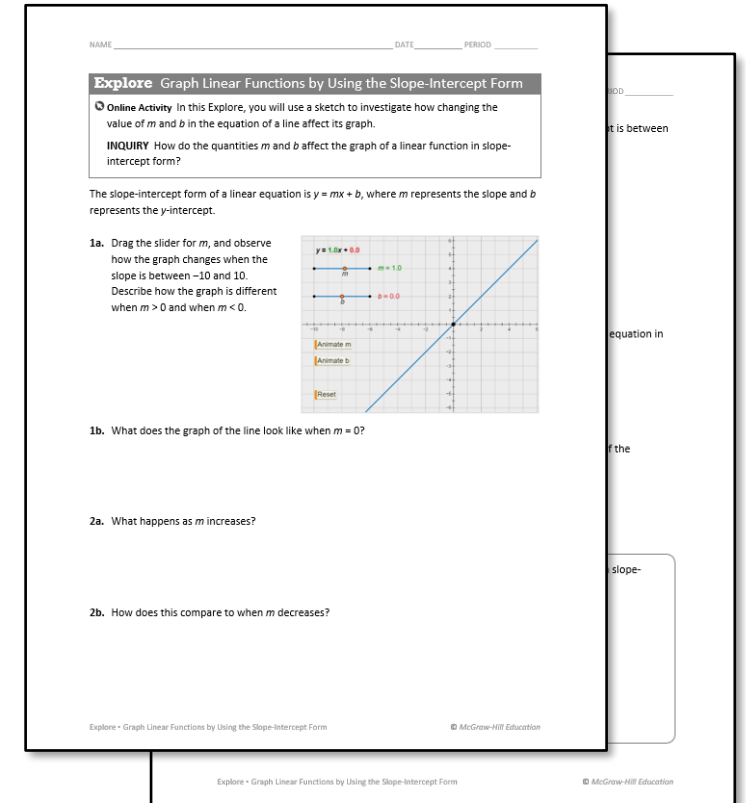
Drag the slide for m , and observe how the graph changes when the slope is between -10 and 10. Describe how the graph is different when $m > 0$ and when $m < 0$.

What does the graph of the line look like when $m = 0$?

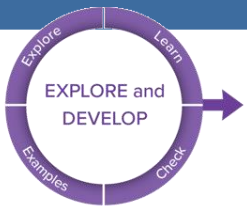
What happens as m increase?

How does this compare to when m decreases?

Explore Graphing Linear Functions by Using the Slope-Intercept Form



Print and Digital
Options



Chunking Lesson Content by Skill

Learn:

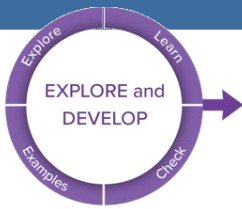
Students are introduced to key lesson concepts

Examples:

Students work through examples related to the lesson concepts

Check:

Check for understanding



Explore & Develop

Learn Writing Linear Equations in Slope-Intercept Form

Example 1 Write Linear Equations in Slope-Intercept Form

Write an equation in slope-intercept form for the line with a slope of $\frac{4}{7}$ and a y -intercept of 5.

Write the equation in slope-intercept form.

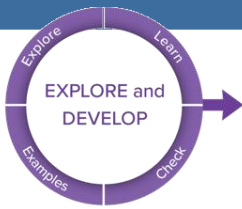
$$y = mx + b \quad \text{Slope-intercept form.}$$

$$y = (\text{---})x + 5 \quad m = \frac{4}{7} \quad b = 5$$

$$y = \text{---}$$

Questions for Mathematical Discourse

- AL** What is the y -intercept? x -intercept? **2; There is no x -intercept.**
- OL** Why is the graph a horizontal line? **Sample answer: Because the slope is 0, the graph will not rise, but can run left to right any amount.**
- BL** What is the domain of this function? the range? **$D = \text{all real numbers}; R = 2$**



Explore & Develop

Write Linear Equations in Slope-Intercept Form

Which is the equation in slope-intercept form for the line with a slope of $\frac{5}{8}$ and a y-intercept of 3?

- ☐ A $y = 3x + \frac{5}{8}$
- ☐ B $y = \frac{5}{8}x + 3$
- ☐ C $y = 5x + 8$
- ☐ D $y = 8x + 5$

Extra
Example

2 EXPLORE AND DEVELOP

ALACED A.2, MA.8.EE.5, MF.F.C.7, MF.F.C.9, MF.IE.B.3

1 CONCEPTUAL UNDERSTANDING 2 FLUENCY 3 APPLICATION

Example 5 Graph Linear Functions

Teaching the Mathematical Practices

1 Seek Information Mathematically proficient students must be able to transform algebraic expressions to reach solutions. Point out that gaining fluency in this skill is as important as learning their math facts was in the elementary grades.

Go Online

- Find additional teaching notes.
- View performance reports of the Checks.
- Assign or present an Extra Example.

DIFFERENTIATE

Reteaching Activity

IF students have difficulty distinguishing between the variables and the parameters in the equation, THEN write several different equations on the board, each in slope-intercept form. Point out that in each case, the equation contains numbers where m and b , which are fixed values, would be the parameters while the variables x and y , which vary in value, represent the coordinates of the solutions of the equation. Examining several equations side by side helps to strengthen understanding of the concept.

Example 5

TIP Students move through the steps to graph a linear function.

TYPE Students explain why it is useful to write an equation in slope-intercept form before graphing.



Explore & Develop

Check

Write an equation for the line with a slope of -5 and a y -intercept of 12 . _____

Lesson 4-3

Slope-Intercept Form

Today's Goals

- Rewrite linear equations in slope-intercept form.
- Graph and interpret linear functions.

y -intercept, is written in slope-intercept form. When an equation is not in slope-intercept form, it might be easier to rewrite it before graphing.

Check

What is the slope intercept form of $-16x - 4y = -56$? _____

Example 1 Write Linear Equations in Slope-Intercept Form

Explain why the y -intercept of a linear equation can be

Check

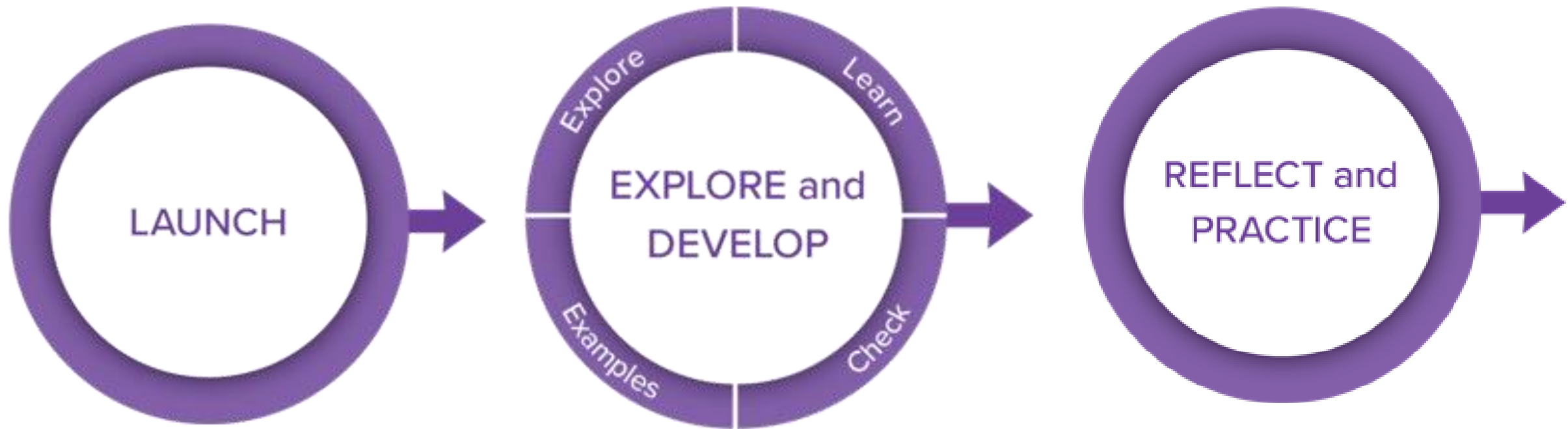
SOCIAL MEDIA In the first quarter of 2012, there were 183 million users of a popular social media site in North America. The number of users increased by an average of 9 million per year since 2012. Write an equation that represents the number of users in millions of the social media site in North America after 2012.

Check • Graphing Linear Functions in Slope-Intercept Form



Lesson Structure

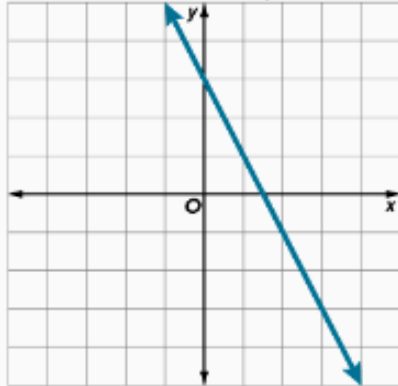
REFLECT & PRACTICE



Exit Ticket

Exit Ticket

1. Write an equation in slope-intercept form of a line with a slope of $\frac{1}{2}$ and a y-intercept of 5.
2. Write an equation in slope-intercept form for the graph.



3. Given $y = 4x$, identify the slope and y-intercept. Then graph the equation.

Exit Ticket • Slope-Intercept Form



Practice

43. STRUCTURE Jazmin is participating in a walk-a-thon. She walks at a rate of 4.25 km per hour. Write an equation in slope-intercept form for the remaining distance y in kilometers of walking for x hours.

a. Write an equation in slope-intercept form for the remaining distance y in kilometers of walking for x hours.

b. Graph the function.

c. What do the x - and y -intercepts represent in this situation?

d. After Jazmin has walked 17 kilometers, how much longer will it take her to complete the walk? Use your graph to answer the question.

For Exercises 44 and 45, refer to the equation $y = -\frac{4}{5}x + \frac{2}{5}$.

44. ANALYZE Complete the table to help you understand the interval. Identify any values of x where the function is zero.

x	$-\frac{4}{5}x + \frac{2}{5}$	y
-2		
0		
5		

45. WRITE A student says you can find the x -intercept of a line by setting $y = 0$. Do you agree? Explain your reasoning. Write your response.

46. PERSEVERE Consider three points that lie on a line: $(9, p)$. Find the value of p and explain your reasoning.

47. CREATE Linear equations are useful in modeling real-world situations. Write an equation that models a real-world situation.

Name _____

40. MOVIES MovieMania, an online movie rental service, charges \$6.85 and \$2.99 per movie rental. Write an equation in slope-intercept form for the remaining cost y in dollars of renting x movies.

a. Write an equation that represents the remaining cost y in dollars of renting x movies.

b. Graph the function.

c. Explain how to use the graph to find the remaining cost of renting 10 movies.

d. SuperFlix has no sign-up fee. It charges the same amount per movie as MovieMania. Write an equation in slope-intercept form for the remaining cost y in dollars of renting x movies from SuperFlix. Round to the nearest cent.

e. Write an equation that represents the remaining cost y in dollars of renting x movies from SuperFlix. Round to the nearest cent.

41. FACTORY A factory uses a heating process to heat a product. The heating process cannot be heated to a temperature below 80°F. Write an equation in slope-intercept form for the temperature T in degrees Fahrenheit of the heating process.

a. The heater is digitally controlled. The temperature is kept constant at 80°F. Write an equation in slope-intercept form for the temperature T in degrees Fahrenheit of the heating process.

b. Graph the function.

c. The heating process takes 10 minutes to reach 80°F. Write an equation in slope-intercept form for the temperature T in degrees Fahrenheit of the heating process.

d. After the heater reaches 80°F, the temperature is kept constant. Write an equation in slope-intercept form for the temperature T in degrees Fahrenheit of the heating process.

42. SAVINGS When Santo was born, his uncle saved an amount of money for him. Write an equation in slope-intercept form for the amount of money y in dollars that Santo has after x years.

a. Write an equation that represents the amount of money y in dollars that Santo has after x years.

b. Graph the function.

c. Santo starts shopping for clothes when he is 18 years old. He spends \$6000. Does he have any money left? Explain.

Examples 5 and 6

Graph each function.

23. $5x + 2y = 8$

24. $4x - 3y = 12$

26. $y = -\frac{2}{3}x + 4$

27. $21x - 7y = 14$

Example 7

29. STREAMING An online company charges a basic plan. They offer premium channels for an additional \$8 per month. Write an equation in slope-intercept form for the monthly cost y in dollars of the basic plan with p premium channels.

a. Write an equation in slope-intercept form for the monthly cost y in dollars of the basic plan with p premium channels.

b. Graph the function.

c. What would the monthly cost be for 5 premium channels?

30. CAR CARE Suppose regular gasoline costs \$3.50 per gallon. You can purchase a car wash at the same time for \$10. Write an equation in slope-intercept form for the total cost y in dollars of purchasing a car wash and x gallons of gasoline.

a. Write an equation in slope-intercept form for the total cost y in dollars of purchasing a car wash and x gallons of gasoline.

b. Graph the function.

c. Find the cost of purchasing a car wash and 10 gallons of gasoline.

Mixed Exercises

Write an equation of a line in slope-intercept form for each line.

31. slope: $\frac{1}{2}$, y -intercept: -3

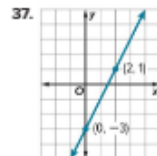
Graph a function with the given slope and y -intercept.

33. slope: 3 , y -intercept: -4

Graph each function.

35. $-3x + y = 6$

Write an equation in slope-intercept form for each line.



Name _____ Period _____ Date _____

Practice

[Go Online](#) You can complete your homework online.

Example 1

Write an equation of a line in slope-intercept form with the given slope and y -intercept.

1. slope: 5 , y -intercept: -3

2. slope: -2 , y -intercept: 7

3. slope: -6 , y -intercept: -2

4. slope: 7 , y -intercept: 1

5. slope: 3 , y -intercept: 2

6. slope: -4 , y -intercept: -9

7. slope: 1 , y -intercept: -12

8. slope: 0 , y -intercept: 8

Example 2

Write each equation in slope-intercept form.

9. $-10x + 2y = 12$

10. $4y + 12x = 16$

11. $-5x + 15y = -30$

12. $6x - 3y = -18$

13. $-2x - 8y = 24$

14. $-4x - 10y = -7$

Example 3

15. SAVINGS Wade's grandmother gave him \$100 for his birthday. Wade wants to save his money to buy a portable game console. Each month, he adds \$25 to his savings. Write an equation in slope-intercept form to represent Wade's savings y after x months.

16. FITNESS CLASSES Toshelle wants to take strength training classes at the community center. She has to pay a one-time enrollment fee of \$25 to join the community center, and then \$45 for each class she wants to take. Write an equation in slope-intercept form for the cost of taking x classes.

17. EARNINGS Macario works part time at a clothing store in the mall. He is paid \$9 per hour plus 12% commission on the items he sells in the store. Write an equation in slope-intercept form to represent Macario's hourly wage y .

18. ENERGY From 2002 to 2005, U.S. consumption of renewable energy increased an average of 0.17 quadrillion BTUs per year. About 6.07 quadrillion BTUs of renewable power were produced in the year 2002. Write an equation in slope-intercept form to find the amount of renewable power P in quadrillion BTUs produced in year y between 2002 and 2005.

Example 4

Graph a linear function with the given slope and y -intercept.

19. slope: 5 , y -intercept: 8

20. slope: 3 , y -intercept: 10

21. slope: -4 , y -intercept: 6

22. slope: -2 , y -intercept: 8

CONSTRUCT AN ARGUMENT

ASSESS REASONABLENESS

MODEL WITH MATHEMATICS

USE REPRESENTATIONS

BUILD PERSEVERANCE

FIND THE ERROR

USE STRUCTURE

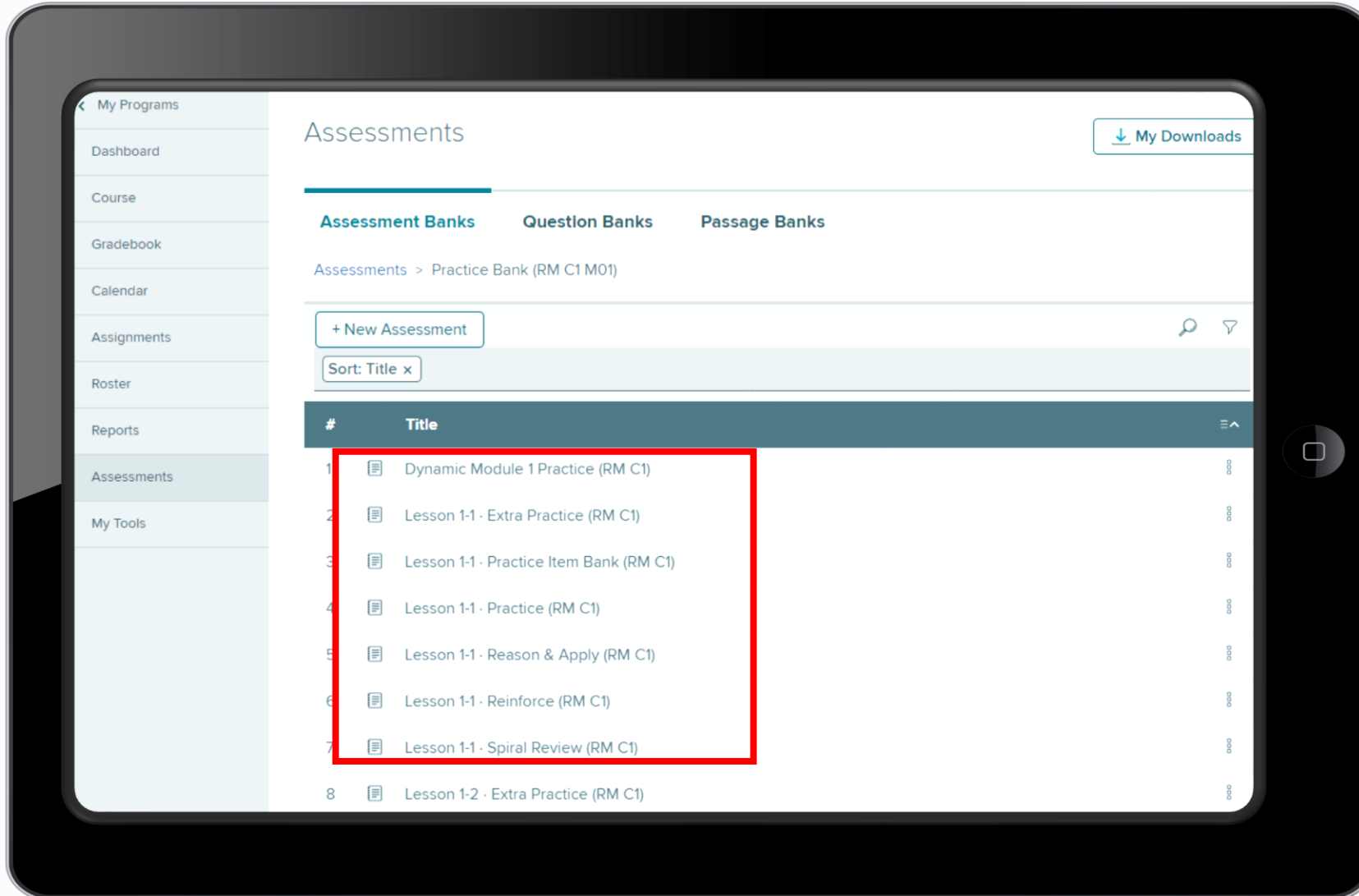
CREATE

WRITE

DOK	Topic	Exercises
1, 2	exercises that mirror the examples	1–30
2	exercises that use a variety of skills from this lesson	31–39
2	exercises that extend concepts learned in this lesson to new contexts	40–43
3	exercises that emphasize higher-order and critical thinking skills	44–47

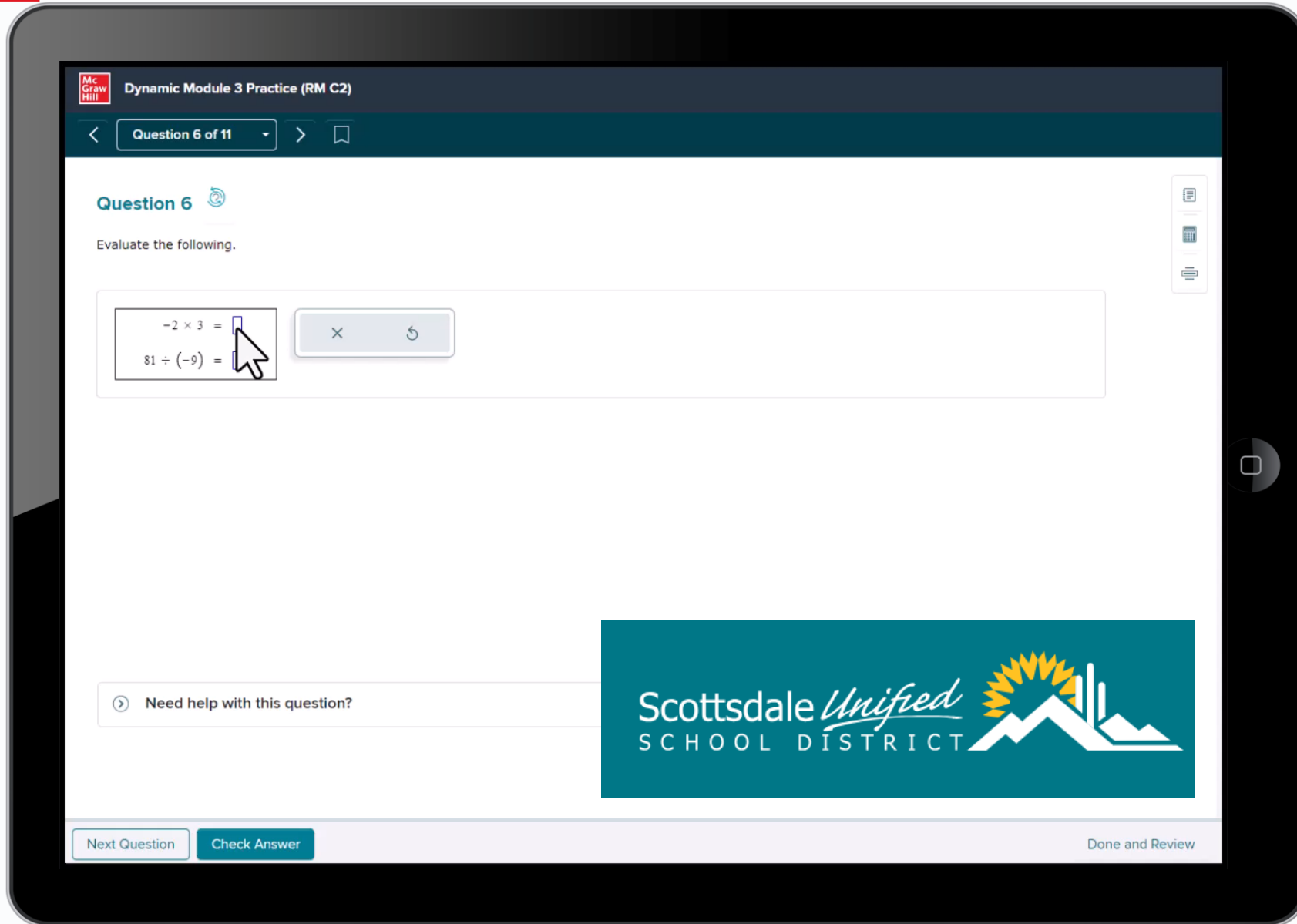
- Extra Practice
- Spiral Review
- Personal Tutors - English & Spanish

Wealth of Digital Practice



- ✓ **Practice**
- ✓ **Extra Practice**
- ✓ **Spiral Review**
- ✓ **Reason & Apply**
- ✓ **Reinforce**
- ✓ **Fully**
- Customizable**
- ✓ **Shareable**

Algorithmic Practice With Instant Feedback!



- ✓ **Algorithms**
- Change With Each Attempt**
- ✓ **Explanations**
- ✓ **Instant Feedback**

Recommendations for Personalized Support

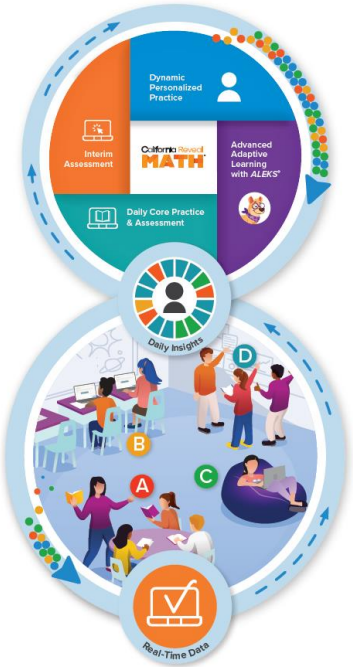


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Lesson 3: Slope-Intercept Form

Assign

> Lesson 3 Info

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Launch >

Explore and Develop >

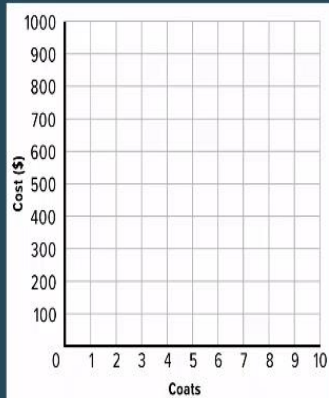
Reflect and Practice >

Personalized Learning Powered by McGraw Hill Plus™ >

Additional Resources >

Take Another Look Mini-Lesson

A small clothing company makes coats at a cost of \$40 each and has monthly fixed costs of \$500. The total cost, y , can be represented by the equation $y = 40x + 500$, where x represents the number of coats.

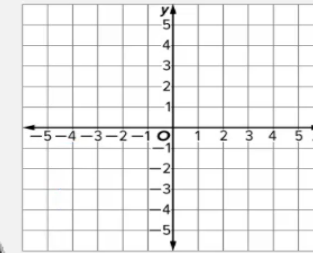


Learn

Assess

Drag points to the grid to show points on this equation for $x = -4, -2, 0, 2,$ and 4 .

x	y
-4	1
-2	2
0	3
2	4
4	5



Check Answer

Apply



McGraw Hill Education Take Another Look: General Equation of a Linear F... Save and Exit

Question 1 of 3

Question 1

Complete the table for the function $y = 8 - 3x$.

x	y
0	
1	
2	

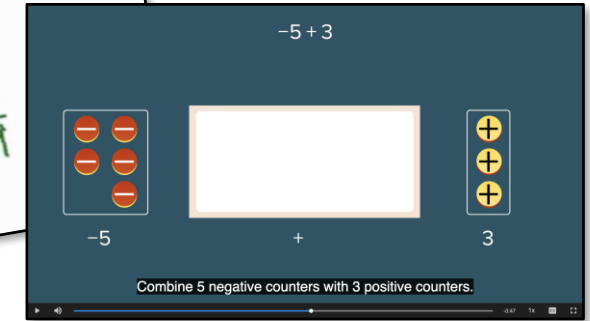
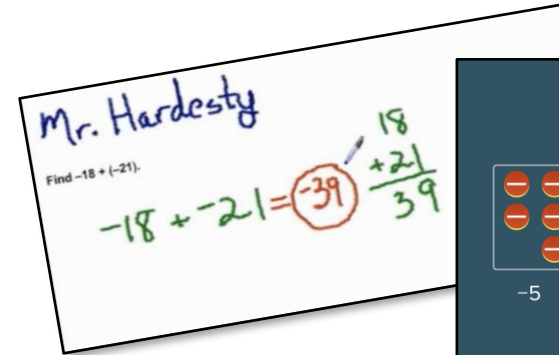
Next Question Done and Review

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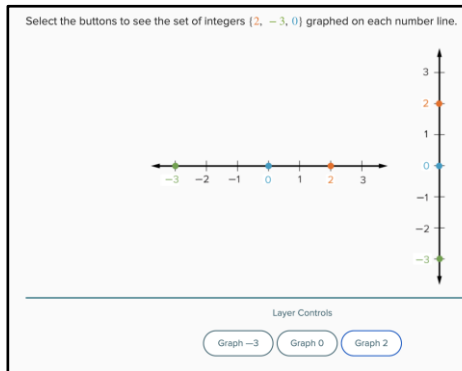
Personalized Support & Practice for ALL!



Adaptive Learning & Practice



Approaching Level



Student Name: _____ Date: _____

Lesson 3-1 - Spiral Review (RM C2)

4) Fill in the blanks using the available answer choices. The table shows Marcie's earnings for walking different numbers of dogs.

Dogs Walked	1	2	3	4
Earnings (\$)	0	3	6	9

Part A
A graph of the ordered pairs in the table would show that Marcie's earnings are _____ to the number of dogs walked.

Part B
The ordered pair $(1, 3)$ represents the fact that Marcie earns \$_____ for walking _____ dogs.

Blank 1 options:
• proportional
• nonproportional

Blank 2 options:
• 0
• 1
• 3

Blank 3 options:
• 0
• 1
• 3

5) Fill in the blanks using the available answer choices. Cheetahs are the fastest land animals on Earth. The table shows how far a cheetah can run in different lengths of time.

Time (s)	0	1	2	3	4
Distance (m)	0	31	62	93	124

Part A
A graph of the ordered pairs in the table would show that the distance ran is _____ to the amount of time.

Part B
The ordered pair $(1, 31)$ represents the fact that a cheetah can run _____ meters in _____ seconds.

Blank 1 options:
• proportional
• nonproportional

Blank 2 options:
• 0
• 1
• 31

Blank 3 options:
• 0
• 1
• 31

Practice 1

Megan had \$760 in her checking account. She deposited a check for \$225 to pay her condo fees. Complete the table below.

Check No.	Date	Description	Debit	Debit
	7/15	Deposit check		
1167	7/18	Cell Phone Bill	120	
1168	7/18	Condo fees	225	

Clear All

Balancing a Checkbook

To balance a checkbook, add deposits and withdrawals, which are called debits. A deposit is represented by a positive amount. A debit is represented by a negative amount.

Example 1

Harvey had \$540 in his checking account. He deposited his paycheck of \$430. He wrote Check #1045 for \$80 to pay his electric bill. He also withdrew \$100 in cash. What is Harvey's checking account balance now?

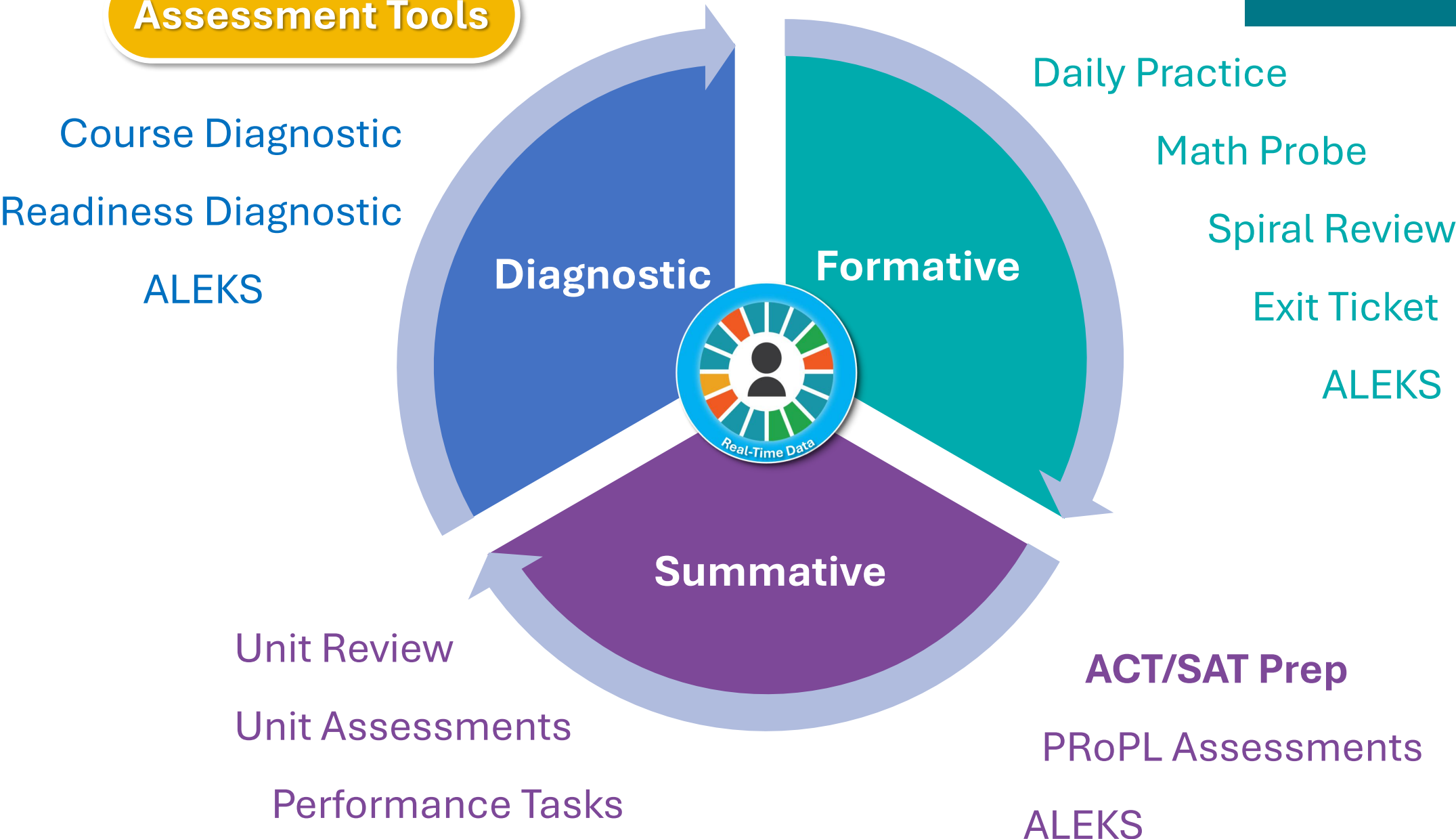
Check No.	Date	Description	Debit	Deposit	Balance
					540
	9/12	Paycheck		430	430
					970
1045	9/13	Electric Bill	80		(-80)
					890
	9/15	Cash	100		(-100)
					790

The blue rows indicate the balance after adding a debit or deposit. Since $540 + 430 + (-80) + (-100) = 790$, Harvey has a balance of \$790.

On Level

Beyond Level

Assessment Tools



Assessments

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

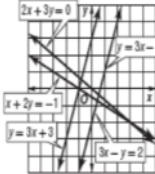


Question 1 | Form 2A (Chapter Resource Master)

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

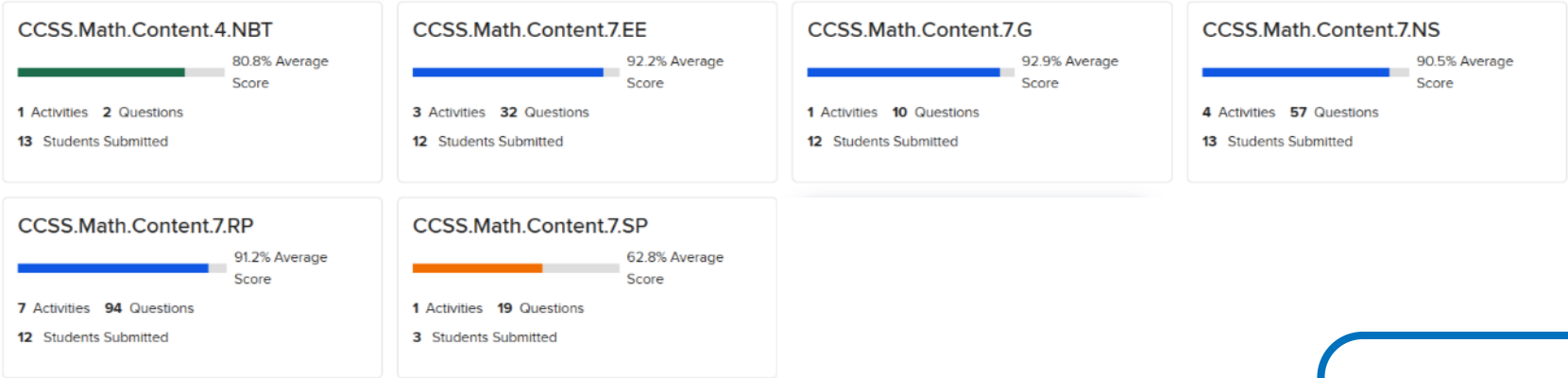
Question Types

- 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



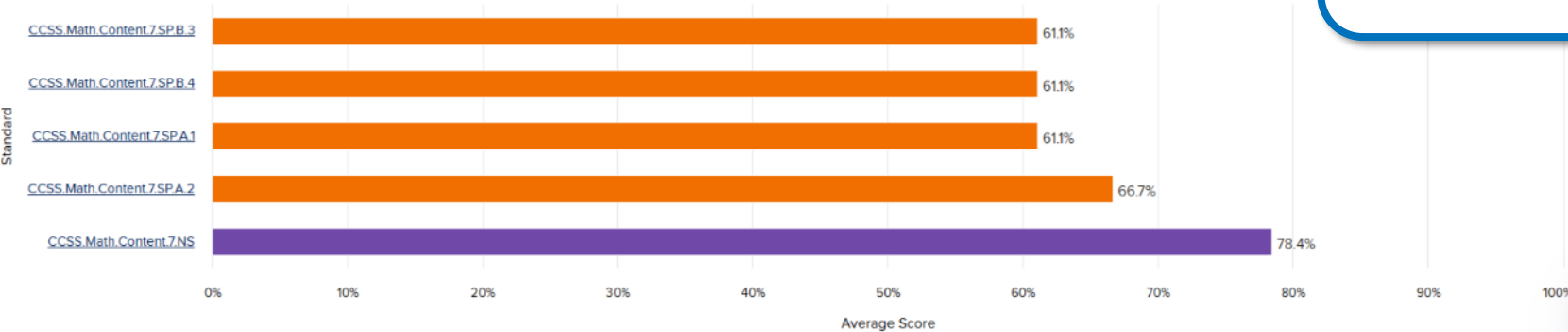
Teacher
Reports

Domain Details



Standards to Focus on

Which 5 standards do you need to focus on?



Standards to Focus On –
Based on Class
Performance

Module Test Form B

[View Legacy Report](#)

Date Range

[Start of school year - today](#)

Summary Question Analysis

Type: Assessment Total Questions: 23 Last result: 10/03/24

Average Score

89.5%

Activity Report

Class Average Score
Individual Student Scores
Standard Assessed w/Class Average

Teacher Reports

12 Student(s) Submitted					
View		Low To High Score		Legend	
Granger, Amelia	73.9%	Cooper, Myles	82.6%	Maeve, Scarlett	91.3%
Xavier, Zac	78.3%	Levi, Juniper	87.0%	Harper, Bentley	95.7%
Ambrose, Wyatt	78.3%	Welsh, Maeve	87.0%	Ezra, Noah	100.0%
				Germain, Haisley	100.0%
				Whistleton, Emily	100.0%
				James, Luna	100.0%

Standards Assessed			
Standards	Average Score	Questions in Activity	Action
CCSS.Math.Content.7.RP.A.2	83.3%	Q3	View Details >
CCSS.Math.Content.7.RP.A.2.c	88.9%	Q1, Q21, Q3	View Details >
CCSS.Math.Content.7.RP	88.9%	Q1, Q10, Q11, Q12, Q13, Q14, Q16, Q17, Q18, Q19, Q2, Q20, Q21, Q22, Q23, Q3, Q5, Q6, Q7, Q8, Q9	View Details >

Type: Assessment Total Questions: 25 Last result: 07/20/24

Average Score

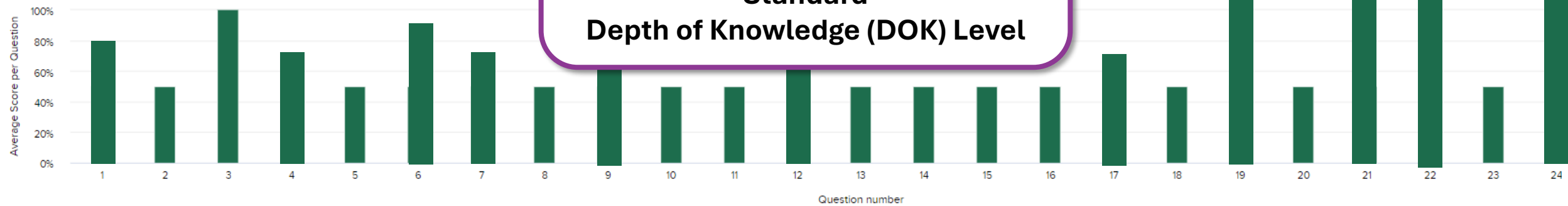
81.56%

Question Analysis

Detailed Item Analysis:
Groups Students by Response
Includes Question Type
Standard
Depth of Knowledge (DOK) Level

Teacher
Reports

Average Score per Question



Question Details

< Question 1 >

Choose the answer.

Jacob sorts buttons into 2 groups of 9. How many buttons does Jacob have?

Student Responses

Responses	Number Of Students	Student Names
incorrect	1 Student	Student1, IM
correct	9 Students	Student8, IM Student12, IM Student5, IM Student18, IM Student, IM Student2, IM Student6, IM Student9, IM Student3, IM

Additional Information

Question Type	Average Score	Cognitive Levels	Standards Covered
Multiple Choice	50.0%	Webb's DOK Level 3: Short-term Strategic Thinking	TEKS A.5C





- Multiple Data Sources Pulled Into One Location – Including Interim Assessment Data
- Standards & Skills Graph drilling down to specific skills within a standard
- 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



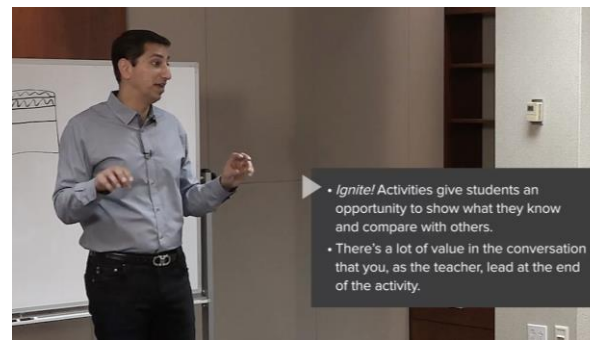
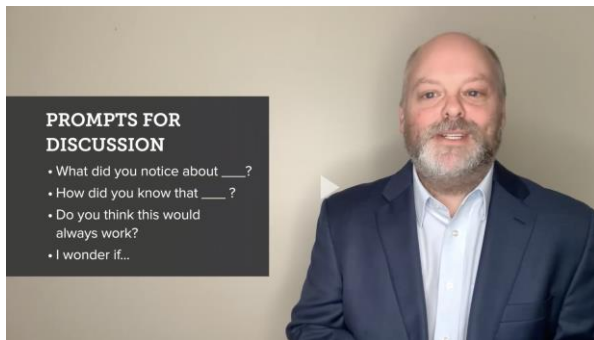
Take Another Look: Equivalent Fractions with Models

Assign ...



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





Arizona Reveal
MATH[®]

Thank you

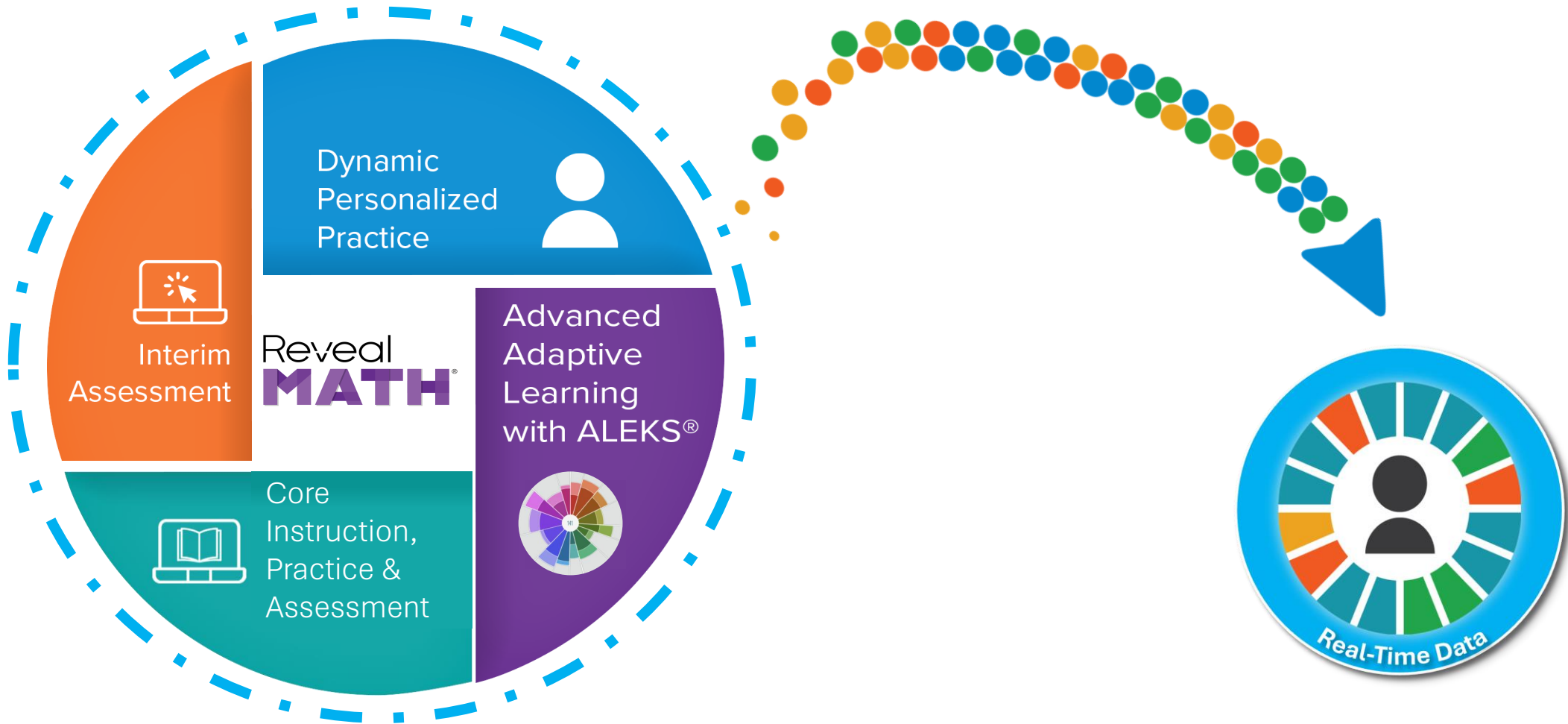
Larissa Sykes

Account Representative

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**Reveal the full potential in
every learner!**





Overall Proficiency

