Mc Graw Hill

Program Overview

Grades 9–12

Oklahoma Reveal MATH®

Oklahoma Reveal MATH®

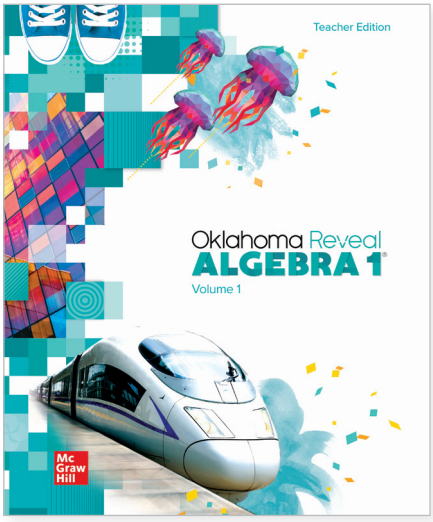
At A Glance

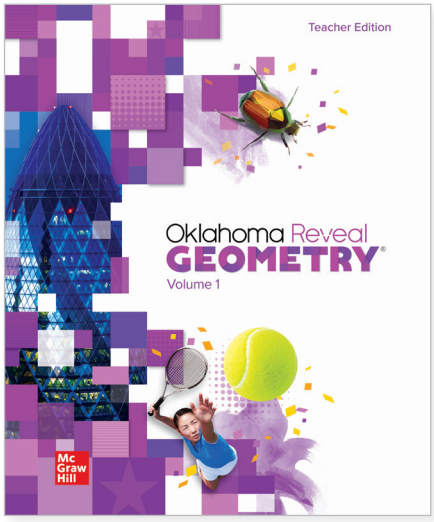
Teacher Resources

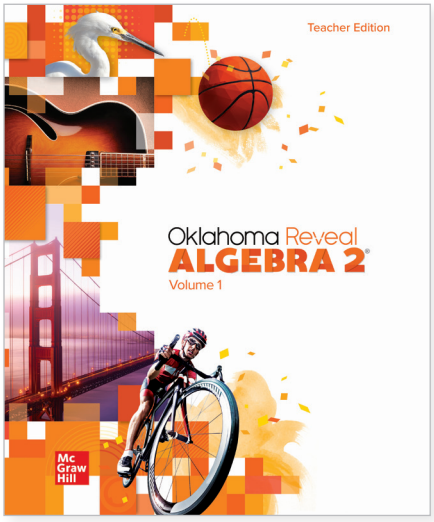
Print Resources

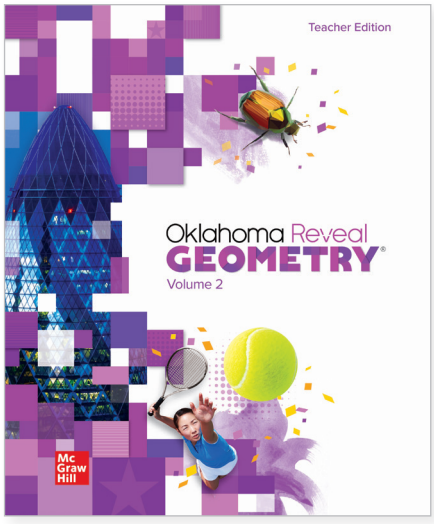
Teacher Edition, 2-Volume

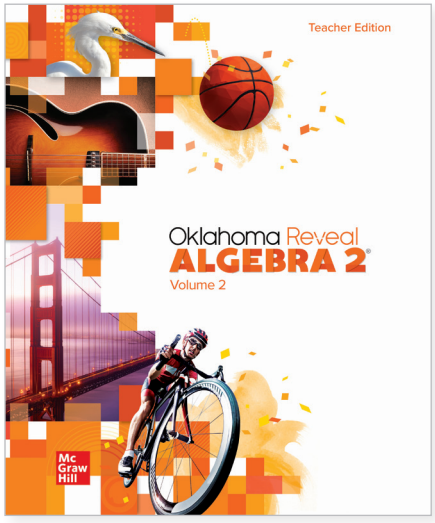
These spiral-bound Teacher Editions provide the essentials to plan and implement classroom instruction focused on Oklahoma Academic Standards for Mathematics.











Digital Resources

Teachers have access to an easy-to-use portal for planning, teaching, and validation of learning.

The Digital Teacher Center experience includes:

- Teacher Edition eBook
- Language Development Handbook, Teacher Edition
- Interactive Lesson Presentations
- Program Quick Start Course
- Expert Insight Videos
- Auto-Scored, Customizable Online Assessments
- Differentiated Resources
- Dynamic Digital Practice
- Auto-scored, Customizable Interactive Practice
- Spiral Review
- Web Sketchpad®
- eToolkit (Virtual Manipulative Suite)
- Personal Tutor Lesson Support
- Practice and Assessment Word documents
- *ALEKS®* *
- Teacher and Administrator Reporting

Digital Integration

The McGraw Hill Open Learning Platform currently integrates with the following Federated Standards: SAML 2.0 IDP, LTI 1.0, and Clever. Integration is possible with most learning management systems that support these standards, including but not limited to:

- Canvas
- Schoology
- Google Classroom
- Blackboard

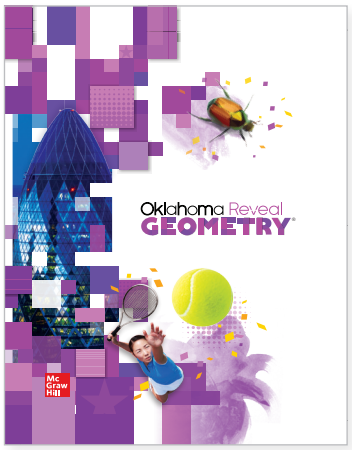
**with Oklahoma Reveal Math and ALEKS bundle*

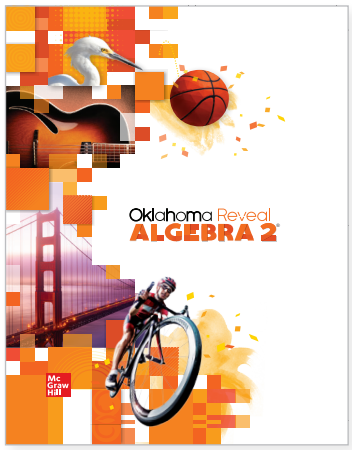
Student Resources

Print Resources

Student Edition, Hardcover

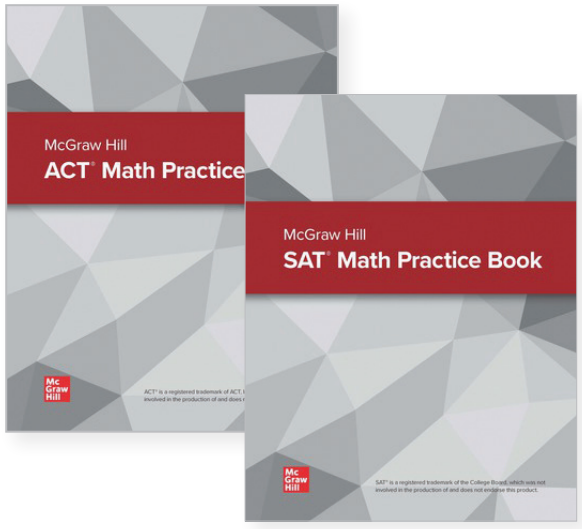
These hardcover Student Editions offer students the opportunity to engage in learning through the use of notetaking, problem-solving, discourse, and reflection.





McGraw Hill ACT® & SAT Math Practice Books

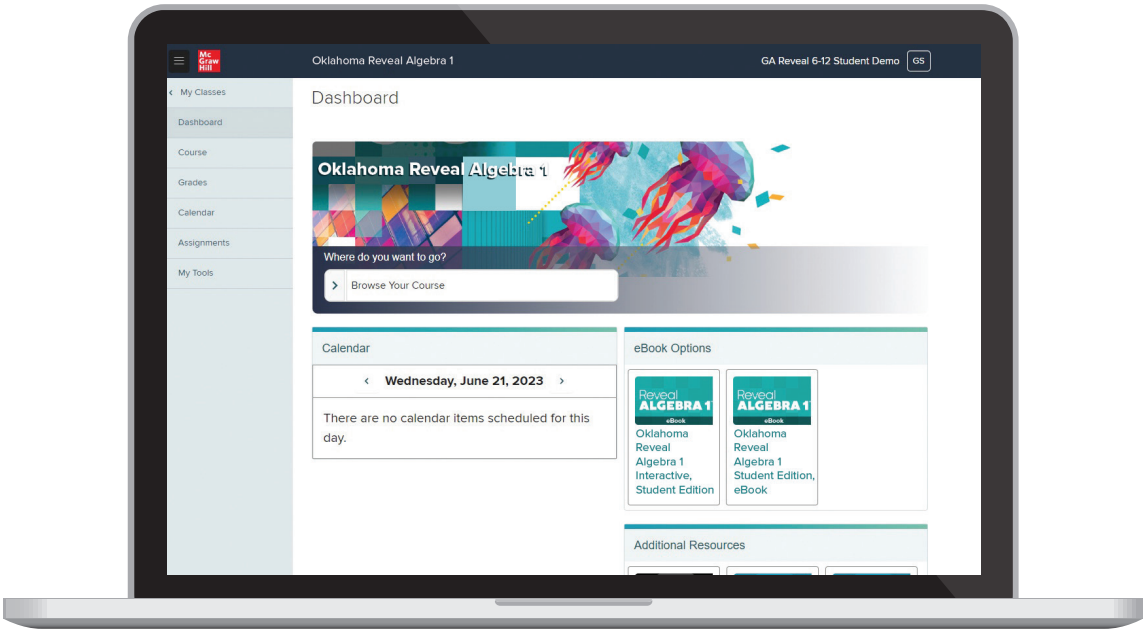
Constructed to provide students practice leading up to either the ACT® or the SAT® tests, these practice books cover the concepts and question types found on each test.



Digital Resources

Students have access to a robust set of engaging digital tools and interactive learning aids in their Digital Student Center, including:

- Interactive Student Edition
- Student Edition eBook
- Language Development Handbook, Student Edition
- Dynamic Digital Practice
- Interactive Digital Practice
- Web Sketchpad®
- eToolkit (Virtual Manipulative Suite)
- eGlossary
- Multilingual eGlossary
- Personal Tutor Video Lesson Support
- *ALEKS®* *



**with Oklahoma Reveal Math and ALEKS bundle*

Designed to Meet Oklahoma Mathematics Standards

Oklahoma Reveal Math is designed to ensure teachers have the tools to deliver the high-quality instruction needed for student success in math class and beyond.

1. **Lesson Goal and Contents**
   The focused goal of the lesson and the segments within are outlined. Note the icons recommending class, pair, and individual student activities.

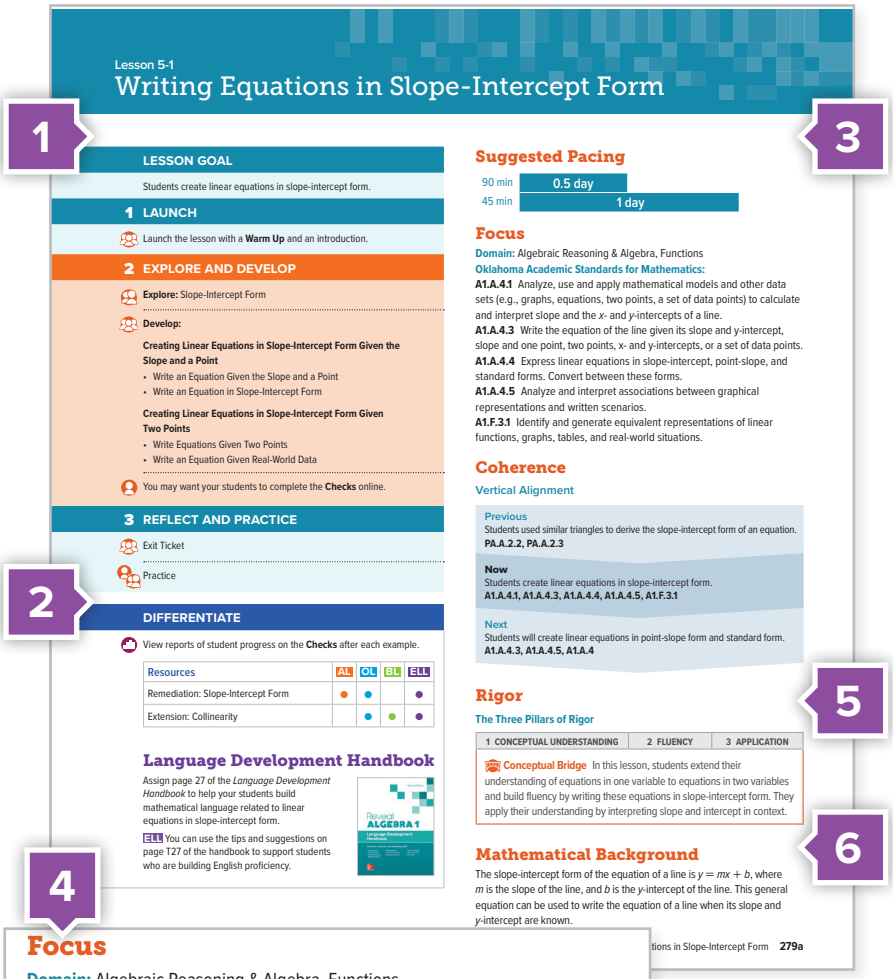
2. **Differentiated Resources**
   At-a-glance resources for lesson differentiation make planning easy.

3. **Pacing**
   Lesson pacing for each activity is represented for 45- or 90- minute periods.

4. **Oklahoma Academic Standards for Mathematics**
   Each Lesson Opener specifies the Domain, Major Cluster(s), Content, and Standards for Mathematical Practice.

5. **Balanced Structure**
   The tasks, problems, and exercises reflect a balance of the three pillars of rigor: Conceptual Understanding, Procedural Skill & Fluency, and Application.

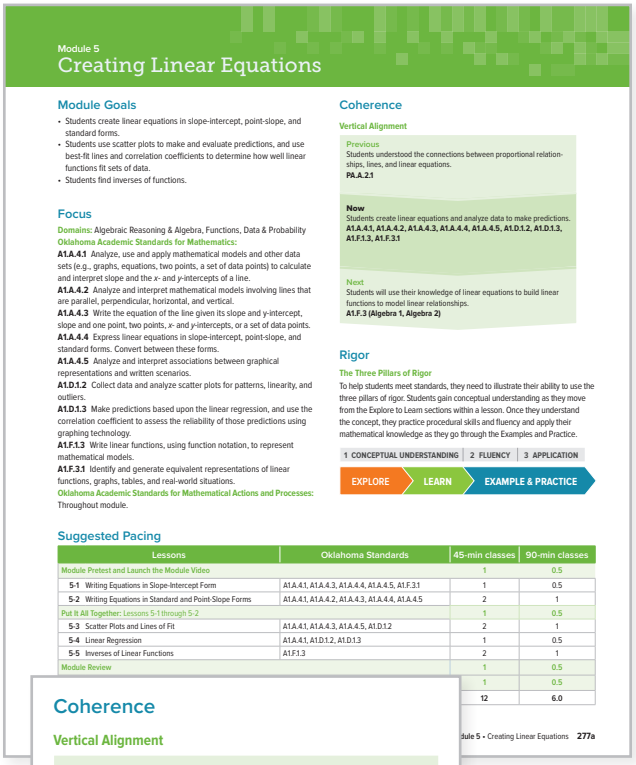
6. **Mathematical Background**
   Each lesson includes a point-of-use explanation of the mathematical context for teachers.



Learning Progression

Oklahoma Reveal Math ensures learning progression of mathematical content across all grades and within each grade from kindergarten to Algebra 2. Module-level and lesson-level progressions help strengthen each student's learning journey.

Module-Level Learning Progression helps teachers understand previously learned concepts and skills, the focus of the upcoming module, and follow-up concepts and skills.


Module 5
Creating Linear Equations

Module Goals
- Students create linear equations in slope-intercept, point-slope, and standard forms.
- Students use scatter plots to make and evaluate predictions, and use best-fit lines and correlation coefficients to determine how well linear functions fit sets of data.
- Students find inverses of functions.

Focus
Domains: Algebraic Reasoning & Algebra, Functions, Data & Probability
Oklahoma Academic Standards for Mathematics:
A1.A.4.1 Analyze, use and apply mathematical models and other data sets (e.g., graphs, equations, two points, a set of data points) to calculate and interpret slope and the *x*- and *y*-intercepts of a line.
A1.A.4.2 Analyze and interpret mathematical models involving lines that are parallel, perpendicular, horizontal, and vertical.
A1.A.4.3 Write the equation of the line given its slope and y-intercept, slope and one point, two points, *x*- and *y*-intercepts, or a set of data points.
A1.A.4.4 Express linear equations in slope-intercept, point-slope, and standard forms. Convert between these forms.
A1.A.4.5 Analyze and interpret associations between graphical representations and written scenarios.
A1.D.1.2 Collect data and analyze scatter plots for patterns, linearity, and outliers.
A1.D.1.3 Make predictions based upon the linear regression, and use the correlation coefficient to assess the reliability of those predictions using graphing technology.
A1.F.1.3 Write linear functions, using function notation, to represent mathematical models.
A1.F.3.1 Identify and generate equivalent representations of linear functions, graphs, tables, and real-world situations.
Oklahoma Academic Standards for Mathematical Actions and Processes: Throughout module.

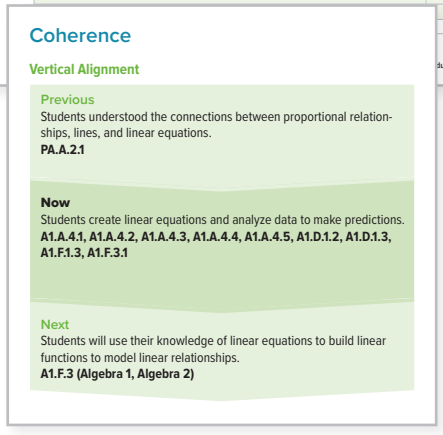
Coherence
Vertical Alignment
Previous
Students understood the connections between proportional relationships, lines, and linear equations.
PA.A.2.1
Now
Students create linear equations and analyze data to make predictions.
A1.A.4.1, A1.A.4.2, A1.A.4.3, A1.A.4.4, A1.A.4.5, A1.D.1.2, A1.D.1.3, A1.F.1.3, A1.F.3.1
Next
Students will use their knowledge of linear equations to build linear functions to model linear relationships.
A1.F.3 (Algebra 1, Algebra 2)

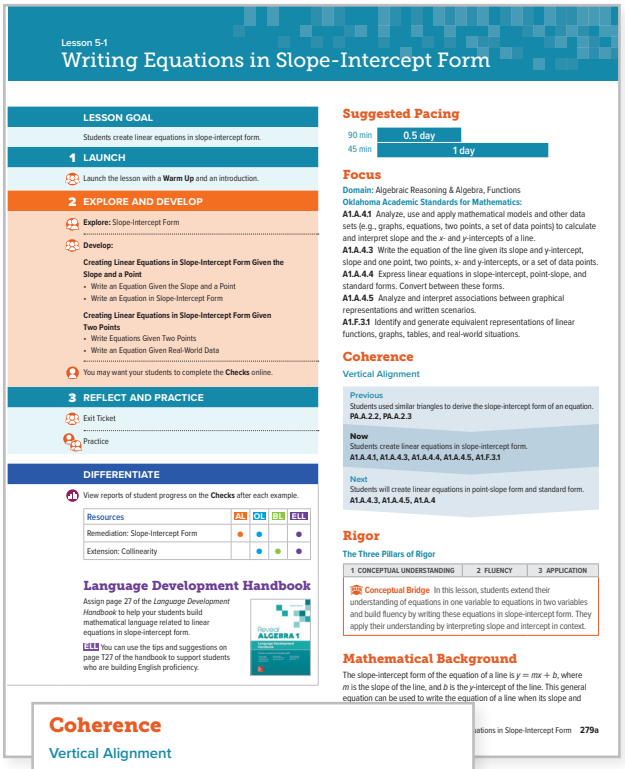
Rigor
The Three Pillars of Rigor
To help students meet standards, they need to illustrate their ability to use the three pillars of rigor. Students gain conceptual understanding as they move from the Explore to Learn sections within a lesson. Once they understand the concept, they practice procedural skills and fluency and apply their mathematical knowledge as they go through the Examples and Practice.
1 CONCEPTUAL UNDERSTANDING | 2 FLUENCY | 3 APPLICATION
EXPLORE | LEARN | EXAMPLE & PRACTICE

Suggested Pacing

Lessons	Oklahoma Standards	45-min classes	90-min classes
Module Pretest and Launch the Module Video		1	0.5
5-1 Writing Equations in Slope-Intercept Form	A1.A.4.1, A1.A.4.3, A1.A.4.4, A1.A.4.5, A1.F.3.1	1	0.5
5-2 Writing Equations in Standard and Point-Slope Forms	A1.A.4.1, A1.A.4.2, A1.A.4.3, A1.A.4.4, A1.A.4.5	2	1
Put It All Together: Lessons 5-1 through 5-2		1	0.5
5-3 Scatter Plots and Lines of Fit	A1.A.4.1, A1.A.4.3, A1.A.4.5, A1.D.1.2	2	1
5-4 Linear Regression	A1.A.4.1, A1.D.1.2, A1.D.1.3	1	0.5
5-5 Inverses of Linear Functions	A1.F.1.3	2	1
Module Review		1	0.5
		1	0.5
		12	6.0

dule 5 • Creating Linear Equations 277a


Coherence
Vertical Alignment
Previous
Students understood the connections between proportional relationships, lines, and linear equations.
PA.A.2.1
Now
Students create linear equations and analyze data to make predictions.
A1.A.4.1, A1.A.4.2, A1.A.4.3, A1.A.4.4, A1.A.4.5, A1.D.1.2, A1.D.1.3, A1.F.1.3, A1.F.3.1
Next
Students will use their knowledge of linear equations to build linear functions to model linear relationships.
A1.F.3 (Algebra 1, Algebra 2)


Lesson 5-1
Writing Equations in Slope-Intercept Form

LESSON GOAL
Students create linear equations in slope-intercept form.
1 LAUNCH
Launch the lesson with a **Warm Up** and an introduction.
2 EXPLORE AND DEVELOP
Explore: Slope-Intercept Form
Develop:
Creating Linear Equations in Slope-Intercept Form Given the Slope and a Point
- Write an Equation Given the Slope and a Point
- Write an Equation in Slope-Intercept Form

Creating Linear Equations in Slope-Intercept Form Given Two Points
- Write Equations Given Two Points
- Write an Equation Given Real-World Data

You may want your students to complete the **Checks** online.
3 REFLECT AND PRACTICE
Exit Ticket
Practice
DIFFERENTIATE
View reports of student progress on the **Checks** after each example.

Resources	AL	OL	EL	ELL
Remediation: Slope-Intercept Form	●	●		●
Extension: Collinearity		●	●	●

Language Development Handbook
Assign page 27 of the *Language Development Handbook* to help your students build mathematical language related to linear equations in slope-intercept form.
ELL You can use the tips and suggestions on page T27 of the handbook to support students who are building English proficiency.

Suggested Pacing
90 min 0.5 day
45 min 1 day

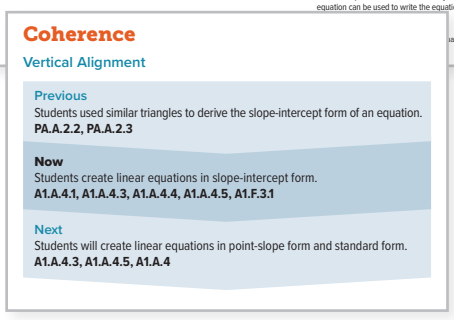
Focus
Domain: Algebraic Reasoning & Algebra, Functions
Oklahoma Academic Standards for Mathematics:
A1.A.4.1 Analyze, use and apply mathematical models and other data sets (e.g., graphs, equations, two points, a set of data points) to calculate and interpret slope and the *x*- and *y*-intercepts of a line.
A1.A.4.3 Write the equation of the line given its slope and y-intercept, slope and one point, two points, *x*- and *y*-intercepts, or a set of data points.
A1.A.4.4 Express linear equations in slope-intercept, point-slope, and standard forms. Convert between these forms.
A1.A.4.5 Analyze and interpret associations between graphical representations and written scenarios.
A1.F.3.1 Identify and generate equivalent representations of linear functions, graphs, tables, and real-world situations.

Coherence
Vertical Alignment
Previous
Students used similar triangles to derive the slope-intercept form of an equation.
PA.A.2.2, PA.A.2.3
Now
Students create linear equations in slope-intercept form.
A1.A.4.1, A1.A.4.3, A1.A.4.4, A1.A.4.5, A1.F.3.1
Next
Students will create linear equations in point-slope form and standard form.
A1.A.4.3, A1.A.4.5, A1.A.4

Rigor
The Three Pillars of Rigor
1 CONCEPTUAL UNDERSTANDING | 2 FLUENCY | 3 APPLICATION
Conceptual Bridge In this lesson, students extend their understanding of equations in one variable to equations in two variables and build fluency by writing these equations in slope-intercept form. They apply their understanding by interpreting slope and intercept in context.

Mathematical Background
The slope-intercept form of the equation of a line is $y = mx + b$, where m is the slope of the line, and b is the *y*-intercept of the line. This general equation can be used to write the equation of a line when its slope and

uations in Slope-Intercept Form 279a


Coherence
Vertical Alignment
Previous
Students used similar triangles to derive the slope-intercept form of an equation.
PA.A.2.2, PA.A.2.3
Now
Students create linear equations in slope-intercept form.
A1.A.4.1, A1.A.4.3, A1.A.4.4, A1.A.4.5, A1.F.3.1
Next
Students will create linear equations in point-slope form and standard form.
A1.A.4.3, A1.A.4.5, A1.A.4

Lesson-Level Learning Progression guidance provides a more granular analysis of the learning progression from lesson to lesson within the module.

Program Table of Contents

ALGEBRA 1

Module 9 Exponential Functions

Lesson 1: Exponential Functions
Lesson 2: Transformations of Exponential Functions
Lesson 3: Writing Exponential Functions
Lesson 4: Transforming Exponential Expressions
Lesson 5: Geometric Sequences
Lesson 6: Recursive Formulas

Module 10 Polynomials

Lesson 1: Adding and Subtracting Polynomials
Lesson 2: Multiplying Polynomials by Monomials
Lesson 3: Multiplying Polynomials
Lesson 4: Special Products
Lesson 5: Using the Distributive Property
Expand 10–5: Proving the Elimination Method
Lesson 6: Factoring Quadratic Trinomials
Lesson 7: Factoring Special Products

Module 11 Quadratic Functions

Lesson 1: Graphing Quadratic Functions
Lesson 2: Transformations of Quadratic Functions
Lesson 3: Solving Quadratic Equations by Graphing
Lesson 4: Solving Quadratic Equations by Factoring
Lesson 5: Solving Quadratic Equations by Completing the Square
Lesson 6: Solving Quadratic Equations by Using the Quadratic Formula
Lesson 7: Solving Systems of Linear and Quadratic Equations
Lesson 8: Modeling and Curve Fitting
Expand 11–8: Exponential Growth Patterns
Lesson 9: Combining Functions

Module 12 Statistics

Lesson 1: Measures of Center
Lesson 2: Representing Data
Lesson 3: Using Data
Lesson 4: Measures of Spread
Lesson 5: Distributions of Data
Lesson 6: Comparing Sets of Data
Lesson 7: Summarizing Categorical Data

Module 13 Probability

Lesson 1: Sample Spaces
Lesson 2: Probability and Counting
Lesson 3: Geometric Probability
Expand 13–3: Making Fair Decisions
Lesson 4: Probability with Permutations and Combinations
Lesson 5: Probability and the Multiplication Rule
Lesson 6: Probability and the Addition Rule
Lesson 7: Conditional Probability
Lesson 8: Two-Way Frequency Tables

Program Table of Contents

GEOMETRY

Module 8 Similarity

Lesson 1: Dilations
Lesson 2: Similar Polygons
Lesson 3: Similar Triangles: AA Similarity
Lesson 4: Similar Triangles: SSS and SAS Similarity
Expand 8–4: Proving the Slope Criteria
Lesson 5: Triangle Proportionality
Lesson 6: Parts of Similar Triangles

Module 9 Right Triangles and Trigonometry

Lesson 1: Geometric Mean
Lesson 2: Pythagorean Theorem and its Converse
Lesson 3: Coordinates in Space
Lesson 4: Special Right Triangles
Lesson 5: Trigonometry
Lesson 6: Applying Trigonometry
Lesson 7: The Law of Sines
Lesson 8: The Law of Cosines

Module 10 Circles

Lesson 1: Circles and Circumference
Lesson 2: Measuring Angles and Arcs
Lesson 3: Arcs and Chords
Lesson 4: Inscribed Angles
Lesson 5: Tangents
Lesson 6: Tangents, Secants, and Angle Measures
Lesson 7: Equations of Circles
Lesson 8: Equations of Parabolas

Module 11 Measurement

Lesson 1: Areas of Quadrilaterals
Lesson 2: Areas of Regular Polygons
Lesson 3: Areas of Circles and Sectors
Lesson 4: Surface Area
Lesson 5: Cross Sections and Solids of Revolution
Lesson 6: Volumes of Prisms and Pyramids
Lesson 7: Volumes of Cylinders, Cones, and Spheres
Lesson 8: Applying Similarity to Solid Figures
Lesson 9: Density

Program Table of Contents

ALGEBRA 2

Module 9 Rational Functions

Lesson 1: Multiplying and Dividing Rational Expressions
Lesson 2: Adding and Subtracting Rational Expressions
Lesson 3: Graphing Reciprocal Functions
Lesson 4: Graphing Rational Functions
Lesson 5: Variation
Lesson 6: Solving Rational Equations and Inequalities

Module 10 Inferential Statistics

Lesson 1: Random Sampling
Lesson 2: Using Statistical Experiments
Lesson 3: Analyzing Population Data
Lesson 4: Normal Distributions
Lesson 5: Estimating Populations Parameters

Module 11 Trigonometric Functions

Lesson 1: Angles and Angle Measure
Lesson 2: Trigonometric Functions of General Angles
Lesson 3: Circular and Periodic Functions
Lesson 4: Graphing Sine and Cosine Functions
Lesson 5: Graphing Other Trigonometric Functions
Lesson 6: Translations of Trigonometric Graphs
Lesson 7: Inverse Trigonometric Functions

Module 12 Trigonometric Identities and Equations

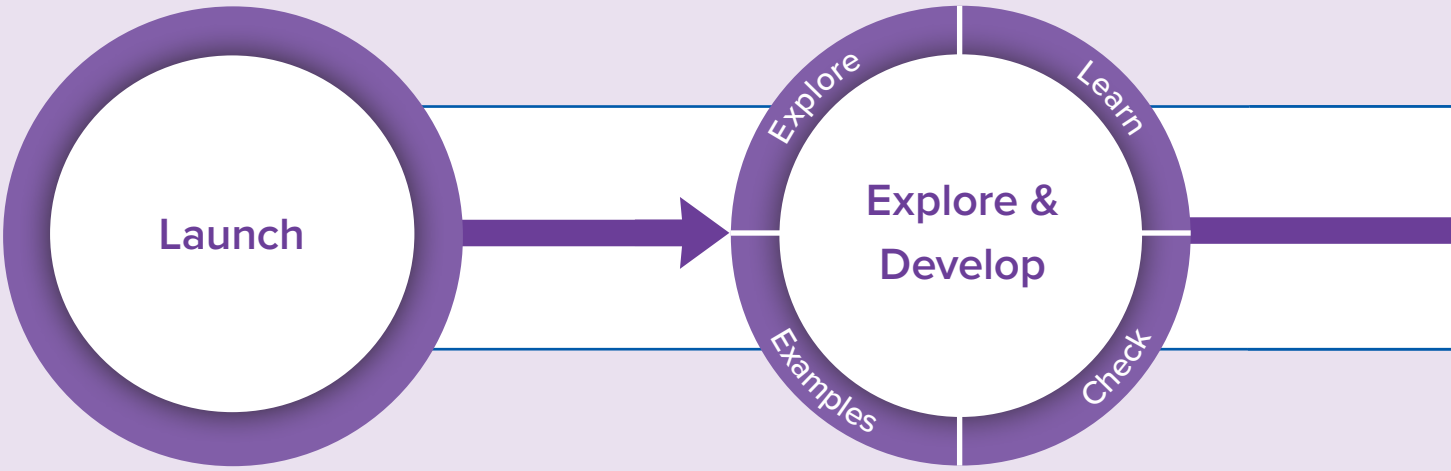
Lesson 1: Trigonometric Identities
Lesson 2: Verifying Trigonometric Identities
Lesson 3: Sum and Difference Identities
Lesson 4: Double-Angle and Half-Angle Identities
Lesson 5: Solving Trigonometric Equations

Module 13 Systems of Equations and Matrices

Lesson 1: Representing Data Using Matrices
Lesson 2: Operations with Matrices
Explore 13–2: Scalar Multiplication
Lesson 3: Multiplying Matrices
Explore 13–3: Geometric Transformations by Using Matrix Multiplication
Math Probes: Matrices and Matrix Operations
Lesson 4: Solving Systems of Equations Using Cramer's Rule
Explore 13–4: Using Determinants
Lesson 5: Solving Systems of Equations Using Inverse Matrices
Explore 13–5: Solving Systems of Equations by Using Technology

Lesson Model Overview

The *Oklahoma Reveal Math* lesson is organized into a three-part instructional model supported by differentiation throughout. Each lesson includes opportunities for flexibility using both print and digital resources.



Launch

Teachers use the **Warm-Up** at the start of the lesson for a brief review of prerequisite skills before leading into **Launch the Lesson**, designed as a real-world problem to interest students and introduce them to questions they can answer by the end of the lesson.

Explore & Develop

Teachers introduce the **Explore** activity and have the option to break students into pairs or small groups to work together on this exploratory mathematical task to build a shared understanding. This is followed by a whole group share out and **Learn** activity to formalize student understanding.

Students continue to take ownership of learning by working through **Examples** and **Talk About It!** prompts to encourage math discourse. **Checks** after several **Examples** provide a quick formative assessment moment for teachers to evaluate students' understanding.

Reflect & Practice

At the conclusion of the lesson, the teacher displays the **Exit Ticket** to evaluate student understanding.

The **Practice, Extra Practice**, and/or **Spiral Review** assignments follow the Differentiate phase and conclude the lesson.

Differentiate

Using the data from **Checks** and the **Exit Ticket**, teachers can choose from a variety of **Differentiated Resources** to support student learning needs.

AL **Approaching Level**
Resources designed to provide prerequisite skill support.

OL **On Level**
Resources for on-level instructional needs.

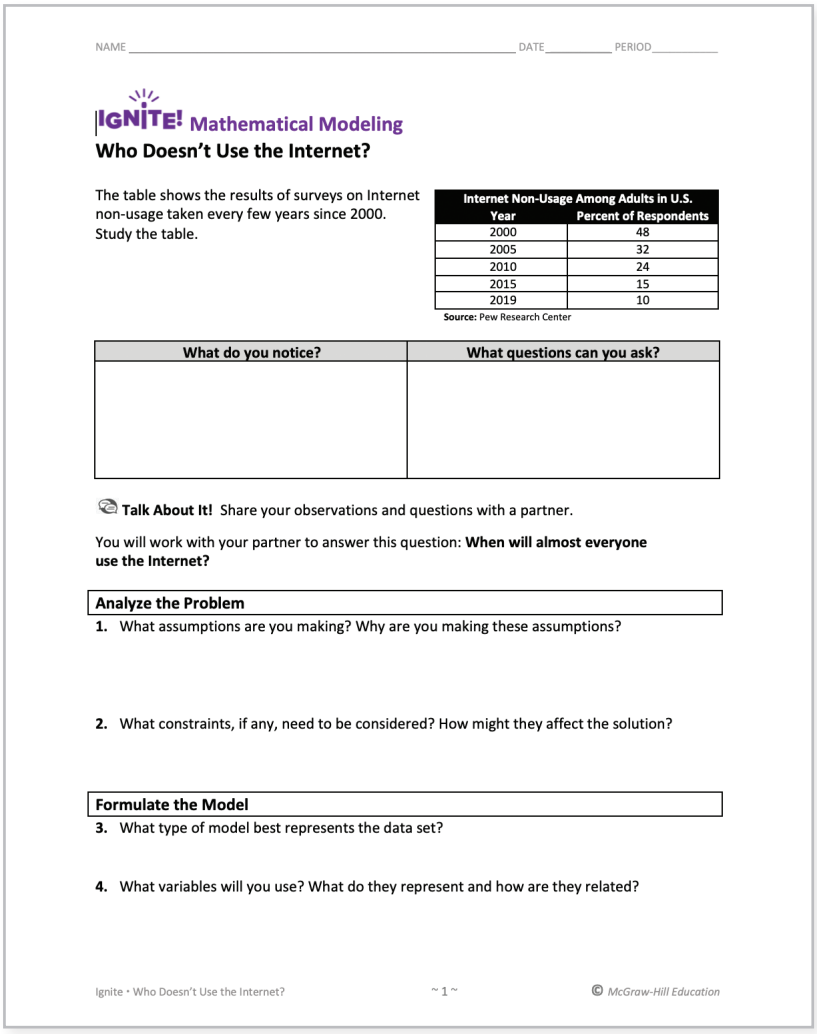
BL **Beyond Level**
Resources to extend lesson concepts.

Spark Curiosity

IGNITE!

Each module includes an **Ignite!** activity designed to:

- Spark students' interest and curiosity.
- Provide multiple entry points.
- Motivate students to persevere through problem-solving challenges.



NAME _____ DATE _____ PERIOD _____

IGNITE! Mathematical Modeling

Who Doesn't Use the Internet?

The table shows the results of surveys on Internet non-usage taken every few years since 2000. Study the table.

Internet Non-Usage Among Adults in U.S.	
Year	Percent of Respondents
2000	48
2005	32
2010	24
2015	15
2019	10

Source: Pew Research Center

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: **When will almost everyone use the Internet?**

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?

Formulate the Model

3. What type of model best represents the data set?

4. What variables will you use? What do they represent and how are they related?

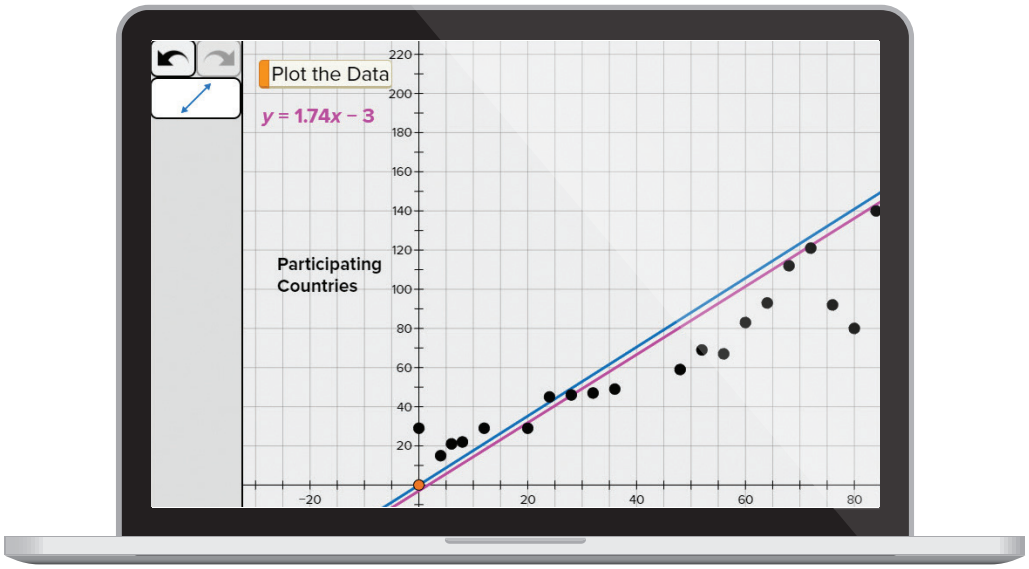
Ignite • Who Doesn't Use the Internet? ~ 1 ~ © McGraw-Hill Education

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

–Raj Shah, Ph.D., Contributing Author

Sense-Making and Reasoning

Online **Explore** activities focus on an **Inquiry Question** and place a unique emphasis on student discovery, exploration, sense-making, and reasoning, rather than focusing solely on the correct answer.



"We have a huge opportunity today in helping students become such strong, fluid, and flexible thinkers that they are able to use mathematics and see opportunities to use it in places we may not even imagine."

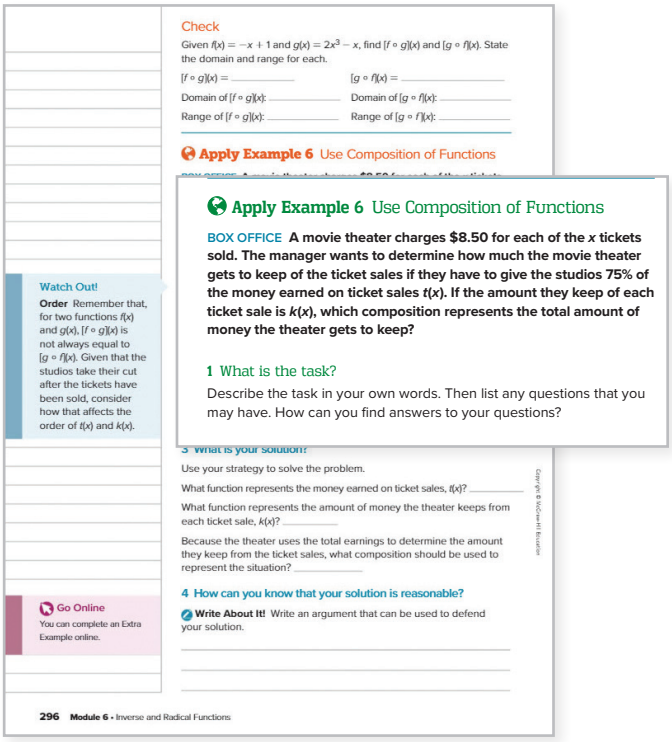
–Cathy Seeley,
Expert Advisor

Problem Solving and Application

Oklahoma Reveal Math provides a foundation for students to take increased ownership of learning to become effective problem solvers and critical thinkers.

Demonstrating Perseverance

Rich multi-step application exercises and higher-order thinking questions encourage productive struggle.


Check

Given $f(x) = -x + 1$ and $g(x) = 2x^3 - x$, find $[f \circ g](x)$ and $[g \circ f](x)$. State the domain and range for each.

$[f \circ g](x) =$ _____ $[g \circ f](x) =$ _____

Domain of $[f \circ g](x)$: _____ Domain of $[g \circ f](x)$: _____

Range of $[f \circ g](x)$: _____ Range of $[g \circ f](x)$: _____

Apply Example 6 Use Composition of Functions

Watch Out!

Order Remember that, for two functions $f(x)$ and $g(x)$, $[f \circ g](x)$ is not always equal to $[g \circ f](x)$. Given that the studios take their cut after the tickets have been sold, consider how that affects the order of $t(x)$ and $k(x)$.

Go Online

You can complete an Extra Example online.

Apply Example 6 Use Composition of Functions

BOX OFFICE **A movie theater charges $8.50 for each of the x tickets sold. The manager wants to determine how much the movie theater gets to keep of the ticket sales if they have to give the studios 75% of the money earned on ticket sales $t(x)$. If the amount they keep of each ticket sale is $k(x)$, which composition represents the total amount of money the theater gets to keep?**

1 What is the task?

Describe the task in your own words. Then list any questions that you may have. How can you find answers to your questions?

3 What is your solution?

Use your strategy to solve the problem.

What function represents the money earned on ticket sales, $t(x)$? _____

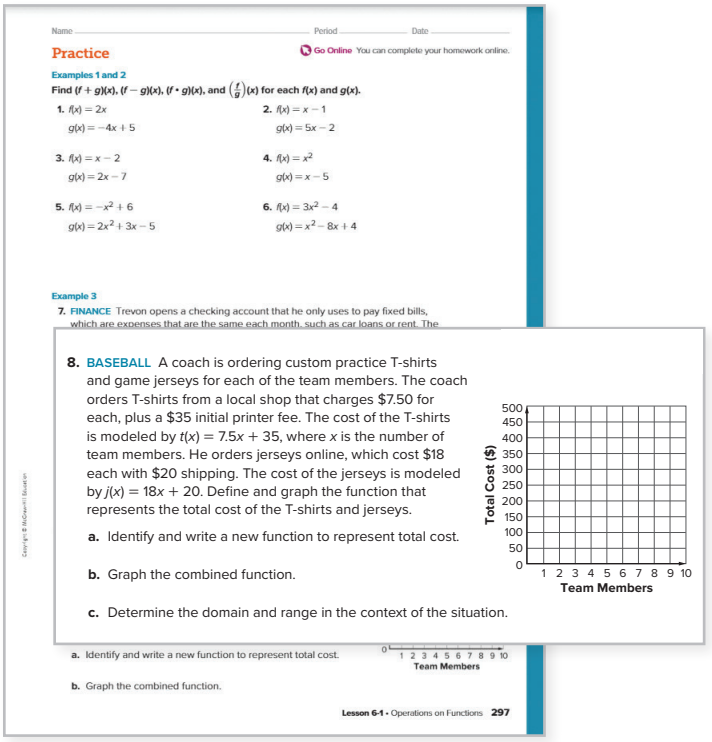
What function represents the amount of money the theater keeps from each ticket sale, $k(x)$? _____

Because the theater uses the total earnings to determine the amount they keep from the ticket sales, what composition should be used to represent the situation? _____

4 How can you know that your solution is reasonable?

Write About It! Write an argument that can be used to defend your solution.

296 **Module 6** • Inverse and Radical Functions


Name _____ Period _____ Date _____

Practice

Go Online You can complete your homework online.

Examples 1 and 2

Find $(f + g)(x)$, $(f - g)(x)$, $(f \cdot g)(x)$, and $\left(\frac{f}{g}\right)(x)$ for each $f(x)$ and $g(x)$.

1. $f(x) = 2x$, $g(x) = -4x + 5$
2. $f(x) = x - 1$, $g(x) = 5x - 2$
3. $f(x) = x - 2$, $g(x) = 2x - 7$
4. $f(x) = x^2$, $g(x) = x - 5$
5. $f(x) = -x^2 + 6$, $g(x) = 2x^2 + 3x - 5$
6. $f(x) = 3x^2 - 4$, $g(x) = x^2 - 8x + 4$

Example 3

7. FINANCE Trevon opens a checking account that he only uses to pay fixed bills, which are expenses that are the same each month, such as car loans or rent. The

8. BASEBALL A coach is ordering custom practice T-shirts and game jerseys for each of the team members. The coach orders T-shirts from a local shop that charges $7.50 for each, plus a $35 initial printer fee. The cost of the T-shirts is modeled by $t(x) = 7.5x + 35$, where x is the number of team members. He orders jerseys online, which cost $18 each with $20 shipping. The cost of the jerseys is modeled by $j(x) = 18x + 20$. Define and graph the function that represents the total cost of the T-shirts and jerseys.

a. Identify and write a new function to represent total cost.

b. Graph the combined function.

c. Determine the domain and range in the context of the situation.

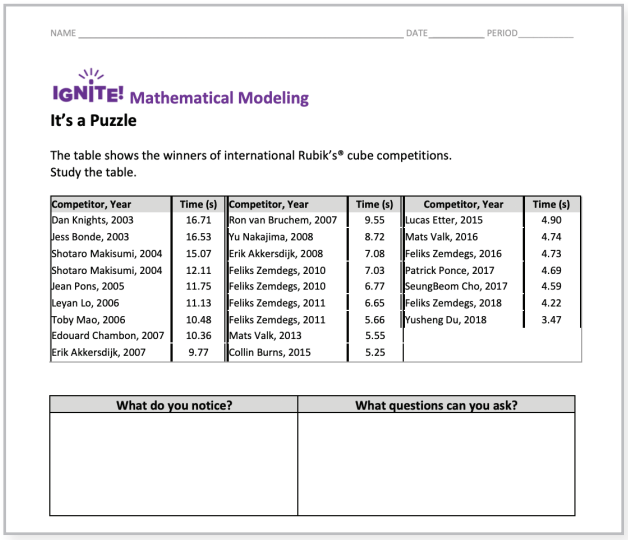
a. Identify and write a new function to represent total cost.

b. Graph the combined function.

Lesson 6-1 • Operations on Functions 297

Mathematical Modeling Tasks

Ignite! Mathematical Modeling activities call for students to construct and develop a model to analyze and present a solution to a real-world scenario. Students then share and discuss their findings with the entire class.


NAME _____ DATE _____ PERIOD _____

IGNITE! Mathematical Modeling

It's a Puzzle

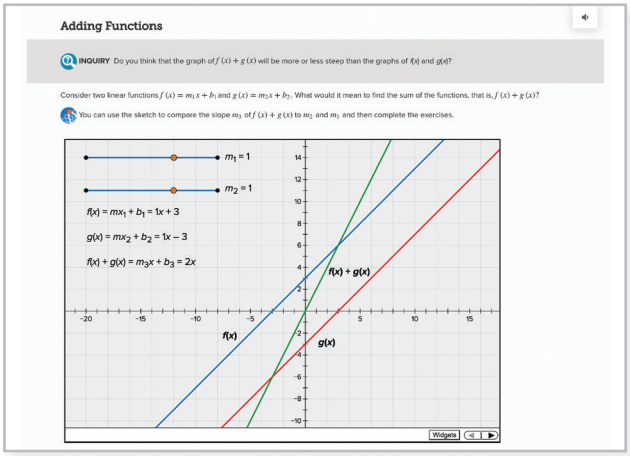
The table shows the winners of international Rubik's® cube competitions. Study the table.

Competitor, Year	Time (s)	Competitor, Year	Time (s)	Competitor, Year	Time (s)
Dan Knights, 2003	16.71	Ron van Bruchem, 2007	9.55	Lucas Etter, 2015	4.90
Jess Bonde, 2003	16.53	Yu Nakajima, 2008	8.72	Mats Valk, 2016	4.74
Shotaro Makisumi, 2004	15.07	Erik Akkersdijk, 2008	7.08	Feliks Zemdegs, 2016	4.73
Shotaro Makisumi, 2004	12.11	Feliks Zemdegs, 2010	7.03	Patrick Ponce, 2017	4.69
Jean Pons, 2005	11.75	Feliks Zemdegs, 2010	6.77	SeungBeom Cho, 2017	4.59
Leyan Lo, 2006	11.13	Feliks Zemdegs, 2011	6.65	Feliks Zemdegs, 2018	4.22
Toby Mao, 2006	10.48	Feliks Zemdegs, 2011	5.66	Yusheng Du, 2018	3.47
Edouard Chambon, 2007	10.36	Mats Valk, 2013	5.55		
Erik Akkersdijk, 2007	9.77	Collin Burns, 2015	5.25		

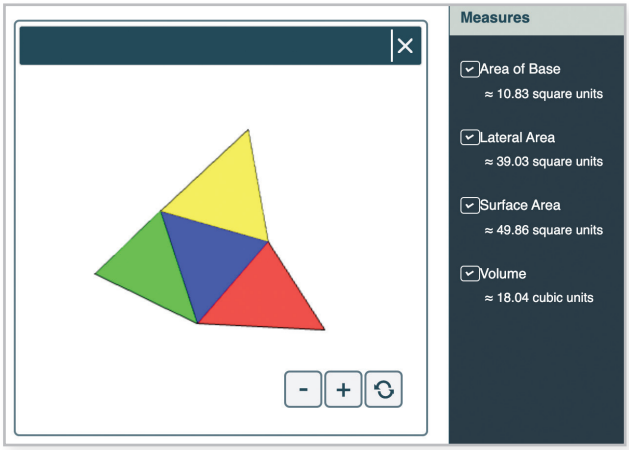
What do you notice?	What questions can you ask?

Tools to Support Visualization and Modeling

As math increases in complexity, students will benefit from tools that allow them to represent mathematics in different ways. *Oklahoma Reveal Math* includes **Web Sketchpad**® at the point of use within the lessons.

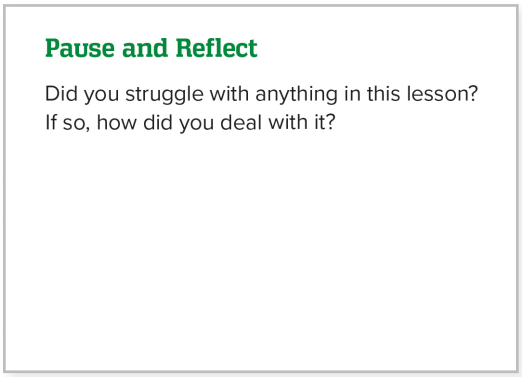


An **eToolkit** accessible from inside the Digital Student Center enables students to learn through dynamic mathematical models.



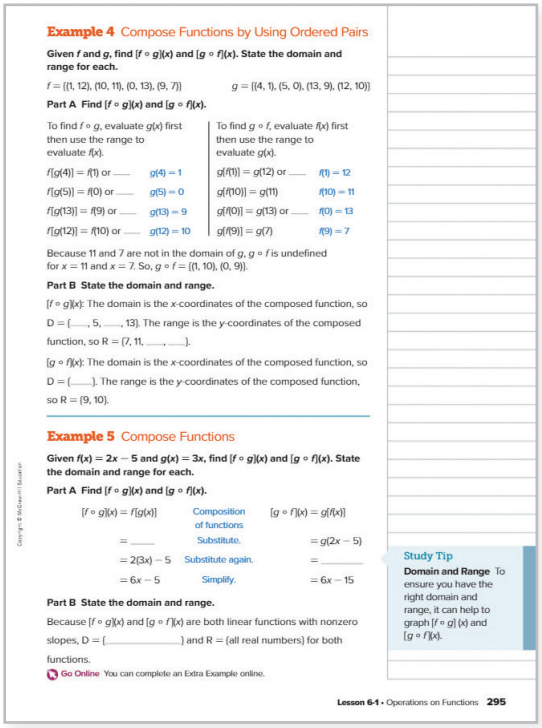
Pause and Reflect

Reflection helps drive accountability and gives students the opportunity to think and write about their learning. Students are regularly asked during **Pause and Reflect** to explain what they have learned.



Notetaking for Understanding

The **Student Edition** is organized with Cornell-inspired margins for students to document notes, draw figures, list key takeaways, or outline strategies.

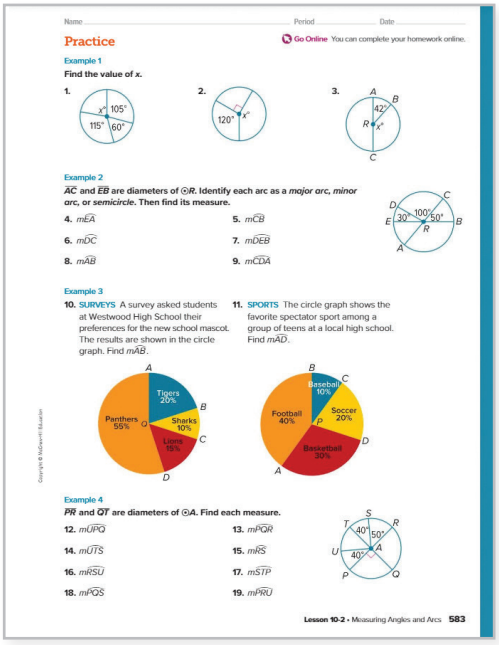


Purposeful Practice

Practice in *Oklahoma Reveal Math* provides students with ample opportunity to demonstrate conceptual understanding and procedural fluency. Teachers may choose to fully customize pre-built practice sets and questions.

Practice assignments can be completed in the print Student Edition, using a printable worksheet, or within the Digital Student Center.

Extra Practice assignments contain additional questions for each lesson on a printable worksheet or within the Digital Student Center.



Name _____ Period _____ Date _____

Practice

Go Online You can complete your homework online.

Example 1

Find the value of *x*.

1. 105°, 115°, 60°, $x°$
2. 120°, $x°$
3. 42°, $x°$

Example 2

$\overline{AC}$ and $\overline{EB}$ are diameters of $\odot R$. **Identify each arc as a *major arc, minor arc,* or *semicircle*. Then find its measure.**

4. $m\overset{\frown}{EA}$
5. $m\overset{\frown}{CB}$
6. $m\overset{\frown}{DC}$
7. $m\overset{\frown}{DEB}$
8. $m\overset{\frown}{AB}$
9. $m\overset{\frown}{CDA}$

100°, 30°, 50°

Example 3

10. **SURVEYS** A survey asked students at Westwood High School their preferences for the new school mascot. The results are shown in the circle graph. Find $m\overset{\frown}{AB}$.

Tigers 20%, Sharks 10%, Lions 15%, Panthers 55%

11. **SPORTS** The circle graph shows the favorite spectator sport among a group of teens at a local high school. Find $m\overset{\frown}{AD}$.

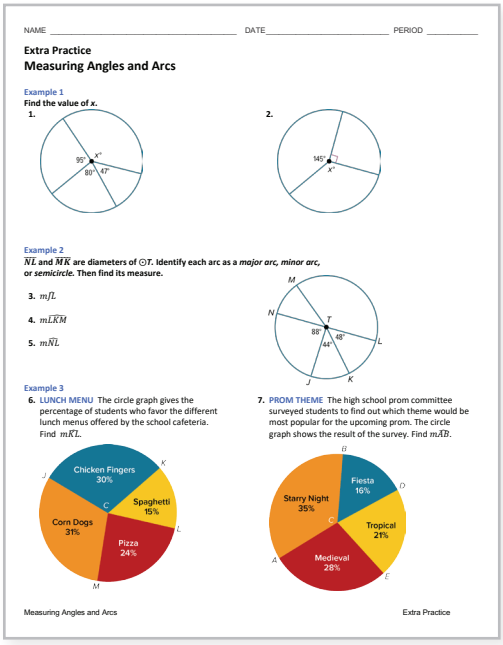
Baseball 10%, Soccer 20%, Basketball 30%, Football 40%

Example 4

$\overline{PR}$ and $\overline{QT}$ are diameters of $\odot A$. **Find each measure.**

12. $m\overset{\frown}{UPQ}$
13. $m\overset{\frown}{PQR}$
14. $m\overset{\frown}{UTS}$
15. $m\overset{\frown}{RS}$
16. $m\overset{\frown}{RSU}$
17. $m\overset{\frown}{STP}$
18. $m\overset{\frown}{PQS}$
19. $m\overset{\frown}{PRU}$

40°, 50°, 40°



NAME _____ DATE _____ PERIOD _____

Extra Practice

Measuring Angles and Arcs

Example 1

Find the value of *x*.

1. 95°, 80°, 47°, $x°$
2. 145°, $x°$

Example 2

$\overline{NL}$ and $\overline{MK}$ are diameters of $\odot T$. **Identify each arc as a *major arc, minor arc, or semicircle*. Then find its measure.**

3. $m\overset{\frown}{JL}$
4. $m\overset{\frown}{LKM}$
5. $m\overset{\frown}{NL}$

88°, 48°, 44°

Example 3

6. **LUNCH MENU** The circle graph gives the percentage of students who favor the different lunch menus offered by the school cafeteria. Find $m\overset{\frown}{KL}$.

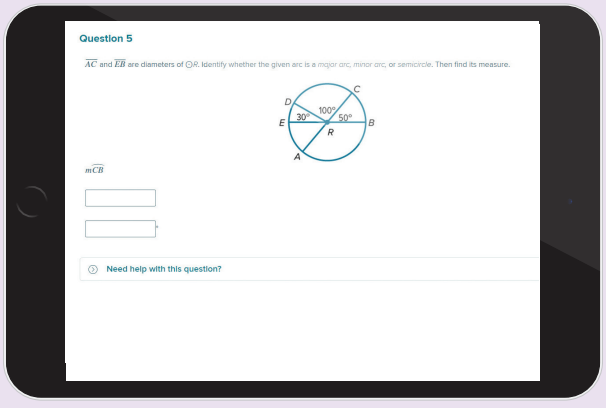
Chicken Fingers 30%, Spaghetti 15%, Pizza 24%, Corn Dogs 31%

7. **PROM THEME** The high school prom committee surveyed students to find out which theme would be most popular for the upcoming prom. The circle graph shows the result of the survey. Find $m\overset{\frown}{AB}$.

Fiesta 16%, Tropical 21%, Medieval 28%, Starry Night 35%

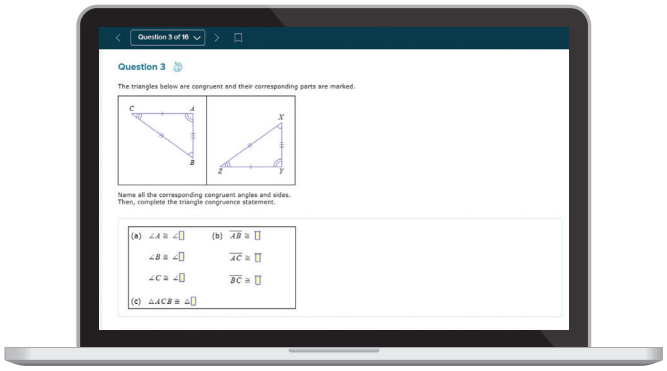
Benefits of Digital Practice

- Multiple Attempts
- Embedded Student Learning Aids
- Tech-Enhanced Question Types
- Dynamic Question Functionality
- Auto-Scoring
- Thousands of Practice Bank Questions



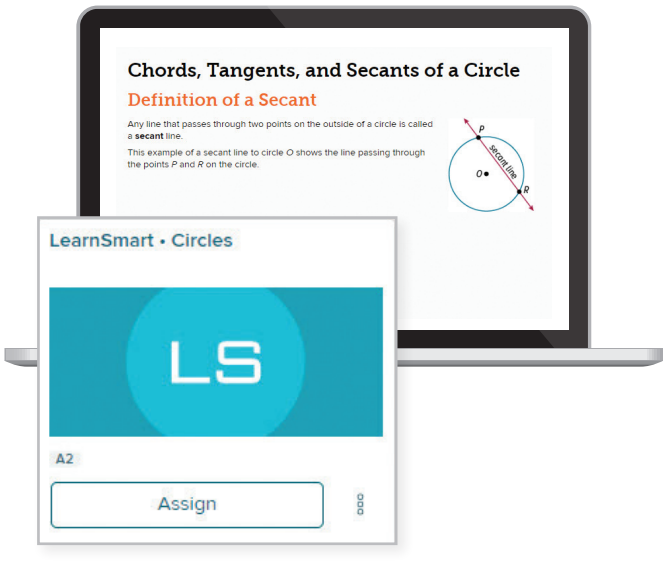
Dynamic Practice

Questions that change value for each student and each attempt are found in Extra Practice, Spiral Review, and Dynamic Module Practice sets.



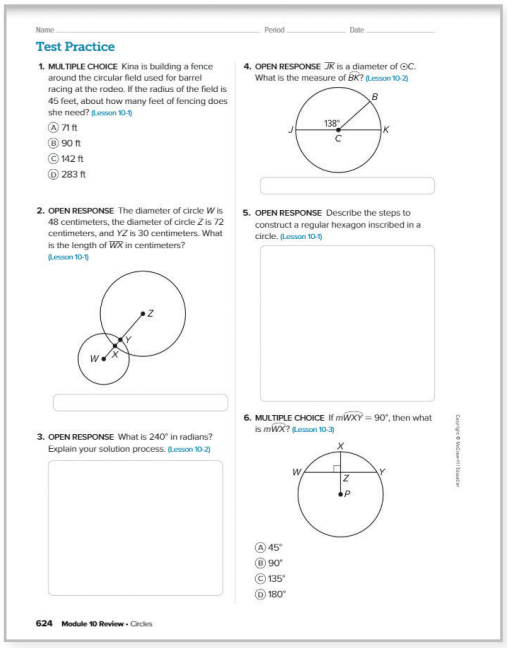
LearnSmart®

After several modules, assign students personalized, adaptive practice focused on learning objectives.



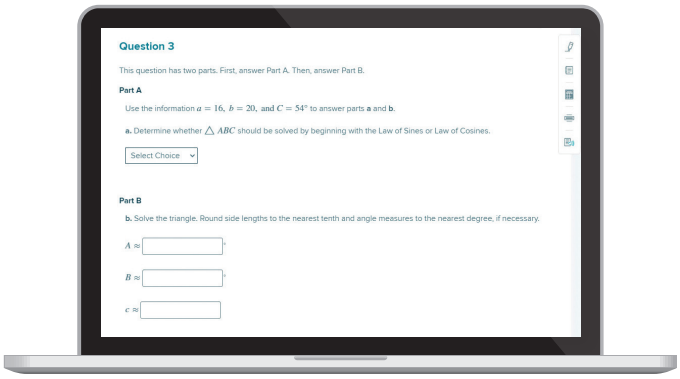
Module Test Practice

Assessment practice concludes the module in the student edition for *Oklahoma Reveal Algebra 1* and *Oklahoma Reveal Geometry*.



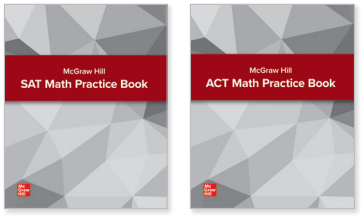
Spiral Review

End-of-lesson practice on concepts presented in prior lessons.



ACT® and SAT® Practice

Oklahoma Reveal Algebra 2 includes student-directed practice support with a **McGraw Hill ACT Practice Book** or **McGraw Hill SAT Practice Book** option. Question sets are also available for digital administration.



Positive Math Habits

Oklahoma Reveal Math is infused with research-based best practices designed for teachers to establish a culture of positivity and success where students find purpose in effort and learning opportunities through questions, errors, and discourse.

Mindset Matters

Teachers are prompted at the beginning of every module with **Mindset Matters** to implement strategies for encouraging a growth mindset during upcoming lessons.

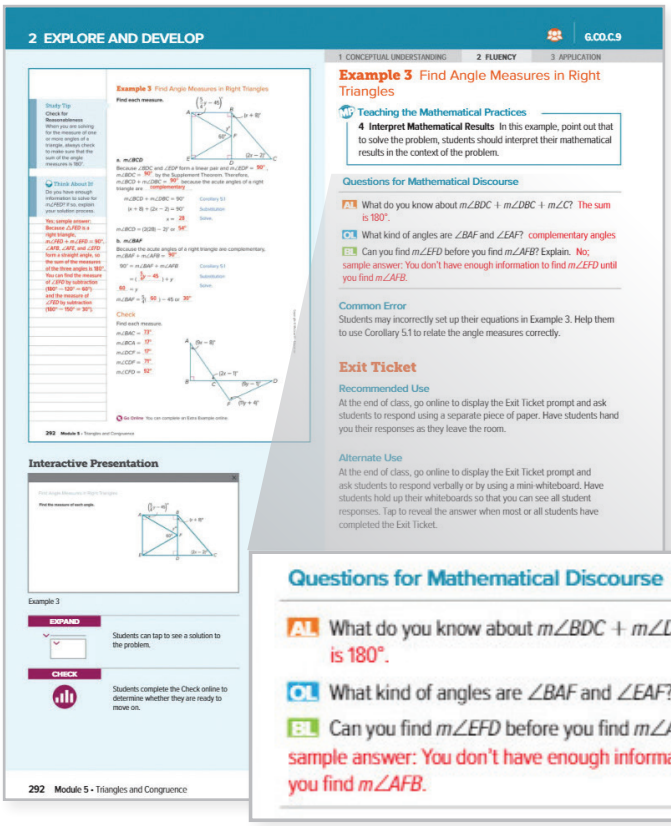
Mindset Matters

View Challenges as Opportunities

Part of cultivating a growth mindset in math involves viewing challenging problems or tasks as an opportunity to learn and make new connections in your brain.

How Can I Apply It?

Encourage students to embrace challenges by trying problems that are thought provoking, such as the **Higher-Order Thinking Problems** in the practice section of each lesson. Remember to regularly remind students that each new challenge is an opportunity to grow.

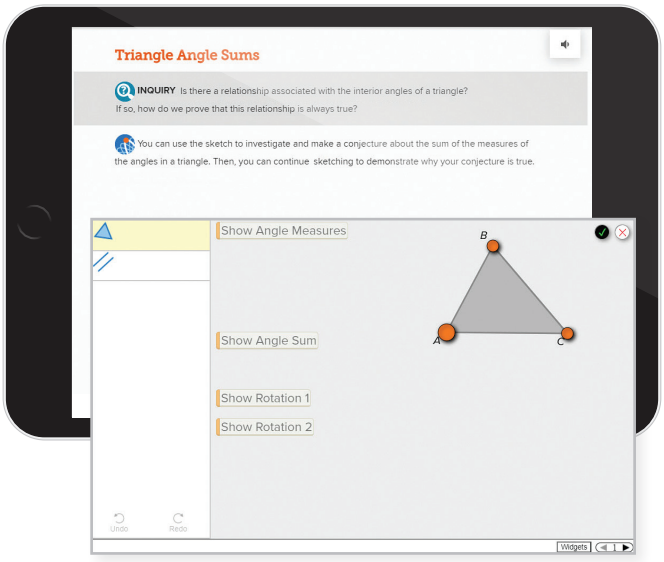


Mathematical Discourse

As a discourse-driven program, *Oklahoma Reveal Math* makes class discussion part of the norm through Student Edition **Talk About It!** prompts and corresponding Teacher Edition **Questions for Mathematical Discourse** prompts.

Purposeful Tasks to Deepen Understanding

Oklahoma Reveal Math tasks are designed to provide students structure to explore, uncover ideas, justify thinking, and ask each other questions to deepen understanding.



Encourage Collaboration:

Provide opportunities for students to collaborate using the **Ignite!** activity or within the lesson using **Explore and Learn** activities, which supply a framework to solve, discuss, and evaluate problems.

Share and Narrow

Have students respond to the *Talk About It!* question with a partner.

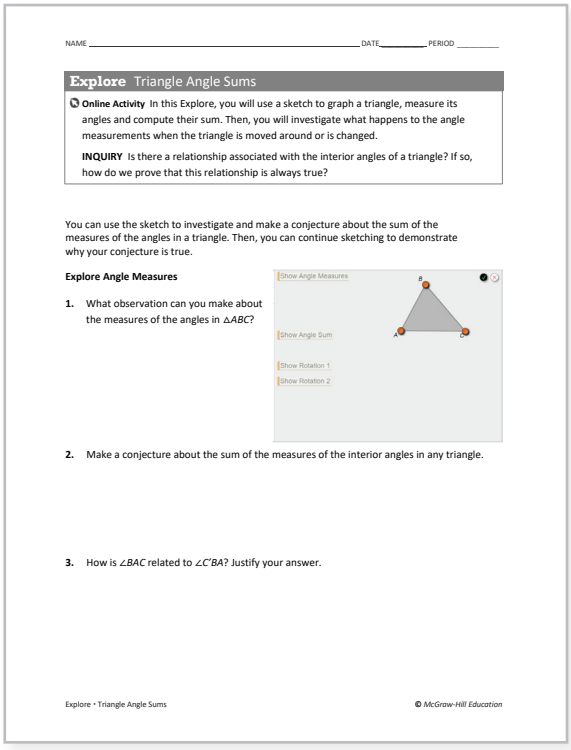
As a class, narrow down to one question that they will work with their partner to answer for the duration of the activity. Have them record the question. You may wish to guide them to the target question, which targets the common misconception shown.

Target Question How many triangles can you find?

Common Misconceptions Some students will approach this problem by listing all of the potential triangles they can find. Other students will try to find a pattern in the triangles. Both methods should help them find all 42 triangles. Students may not notice that some of the triangles are being counted twice. However, working with a partner may help them identify that potential pitfall.

Focus on Inquiry:

Online **Explore** activities begin with an open-ended **Inquiry Question** to encourage deep thinking and reasoning. Students document their findings either online or on an **Explore Recording Sheet**.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Explore Triangle Angle Sums

Online Activity In this Explore, you will use a sketch to graph a triangle, measure its angles and compute their sum. Then, you will investigate what happens to the angle measurements when the triangle is moved around or is changed.

INQUIRY Is there a relationship associated with the interior angles of a triangle? If so, how do we prove that this relationship is always true?

You can use the sketch to investigate and make a conjecture about the sum of the measures of the angles in a triangle. Then, you can continue sketching to demonstrate why your conjecture is true.

Explore Angle Measures

1. What observation can you make about the measures of the angles in $\triangle ABC$?

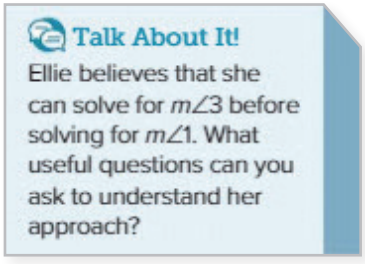
2. Make a conjecture about the sum of the measures of the interior angles in any triangle.

3. How is $\angle BAC$ related to $\angle C'BA$? Justify your answer.

Explore • Triangle Angle Sums

© McGraw-Hill Education

Talk About It! prompts ask students to explain their reasoning and discuss their thinking.



Building Mathematical Language

Oklahoma Reveal Math was developed around the belief that mathematics is about communication: listening, speaking, reading, and writing. All students will benefit from support designed to develop and promote the use of mathematical language.

MLR

Math Language Routines

Occur in every lesson to promote the use of mathematical language.

Language Development Handbook Pages

Graphic organizers, tools, and tips to build students' academic and math vocabulary within each lesson.

ONLINE

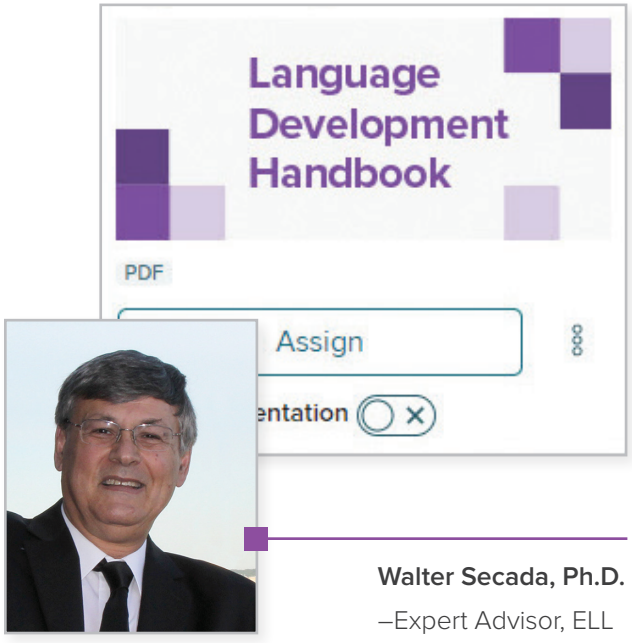
ELL

English Language Learners

Embedded in each lesson and based on combined WIDA proficiency levels to help students understand math vocabulary, ideas, and concepts in context.

Language of Math

Promotes the development of key vocabulary terms that support how students talk and think about math in the context of each lesson.



Walter Secada, Ph.D.
–Expert Advisor, ELL

Support for English Language Learners (ELLs)

In addition to embedded Teacher Edition language support strategies, *Oklahoma Reveal Math* includes resources to assist ELLs with context and language proficiency.

- Spanish Videos
- Audio to Improve Listening Comprehension Skills
- English/Spanish Glossary
- Multilingual eGlossary
- *ALEKS*® Bilingual Courses in Spanish

**with Oklahoma Reveal Math and ALEKS bundle*

Real-World Connections

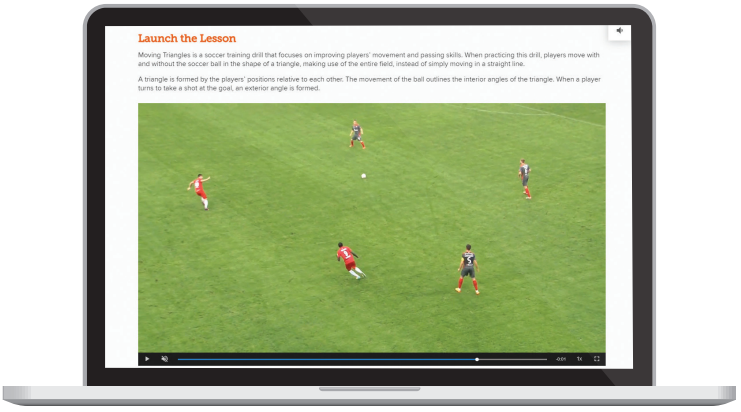
Oklahoma Reveal Math is about students recognizing that math is everywhere in the world around them and that the world offers them an infinite number of problem-solving opportunities.

Relatable Scenarios

A **Launch the Module** video highlighting an authentic, recognizable scenario engages students in the upcoming lesson topics.

Relevant Connections

A **Launch the Lesson** real-world situation related to the mathematics in the upcoming lesson helps students make connections.

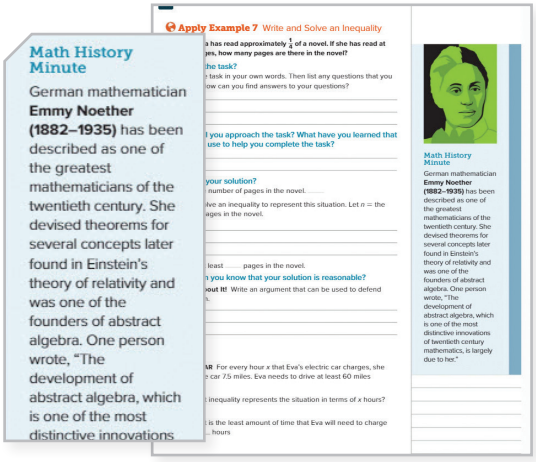


Example

Lessons also contain real-world **Examples** and **Apply Examples**, highlighted with a globe icon, designed to provide relevant contexts in which students can see themselves.

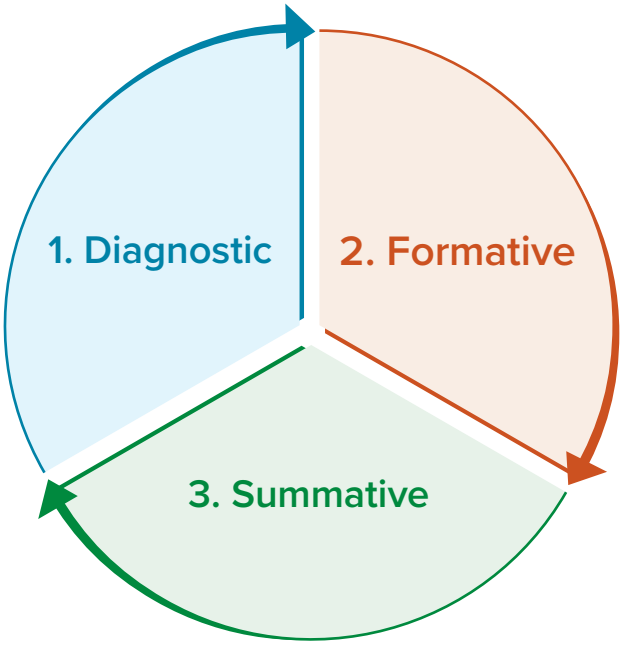
Multicultural Contributions

To provide students with diverse perspectives, **Math History Minutes** highlight the contributions of leading mathematicians, past and present, from all over the world.



Assessments

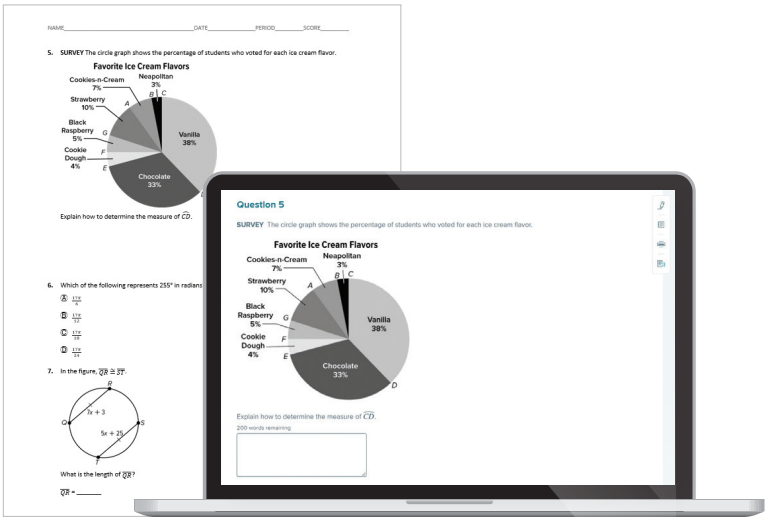
Oklahoma Reveal Math offers a comprehensive set of assessments, including diagnostic, formative, and summative options for teachers to effectively evaluate what students know and where they need support.



Type	Student Edition	Online Resources
Diagnostic	• Are You Ready?	• Course Diagnostic • Module Diagnostic • Warm Up
Formative	• Examples • Lesson Practice including Skills, Application, Higher Order Thinking • Cheryl Tobey Formative Assessment Probe • Check	• Items from Student Edition • Extra Examples • Extra Practice • Spiral Review • Put it All Together • Exit Ticket • *ALEKS**
Summative	• Module Review	• Module Tests Forms A, B and C • Performance Task • End-of-Course Assessment

Print and Digital Formats

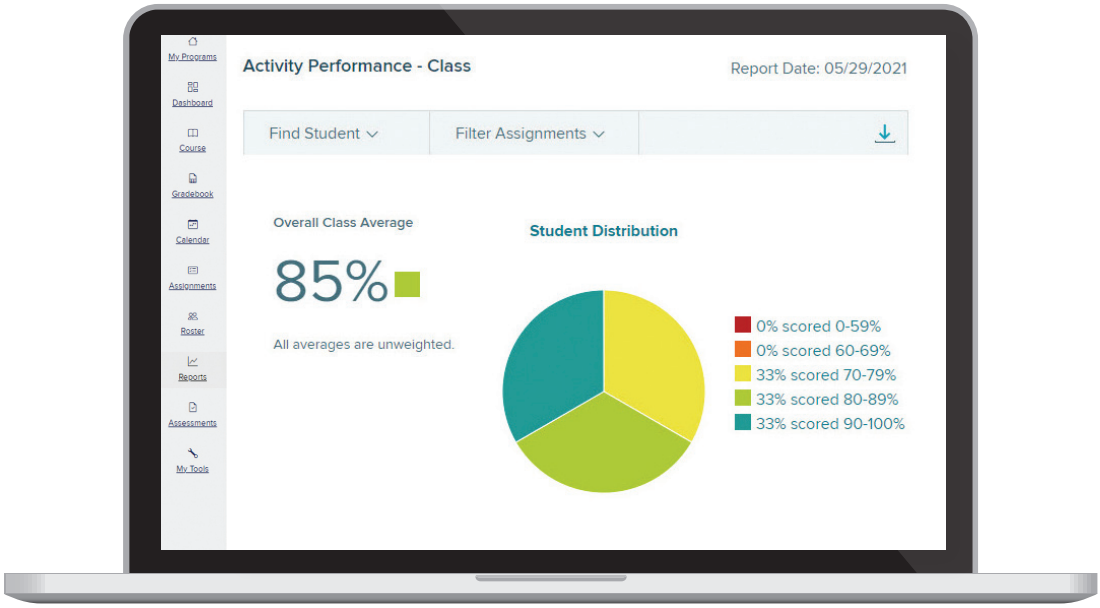
All *Oklahoma Reveal Math* assessments are available for either print or digital administration. Print assessments can be found in the **Digital Teacher Center** as editable Word documents.



*with Oklahoma Reveal Math and ALEKS bundle

Data to Drive Instructional Insights

Actionable data is a click away in the Digital Teacher Center with the *Oklahoma Reveal Math* Reporting Dashboard.



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

Oklahoma Standards Report
Teachers can access information on class performance by Oklahoma Mathematics Standards, including a cumulative score by class and student.

MAP Growth* **Report**
Teachers can view students' *MAP® Growth™* RIT scores and progress throughout the year.

Integrate *MAP Growth* Data*

MAP Growth, the market's most trusted and accurate interim assessment, integrates its data with *Oklahoma Reveal Math* on the Open Learning Platform.

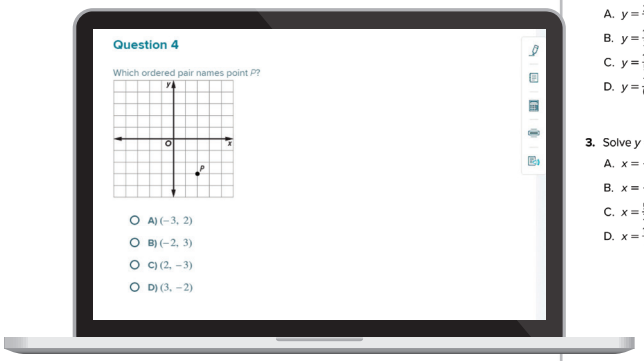
MAP Growth data can save teachers time by identifying students who may need additional support to access grade-level content. **Auto-Grouping** and **Recommended Targeted Skill Paths** provide support and review of critical prerequisite skills.

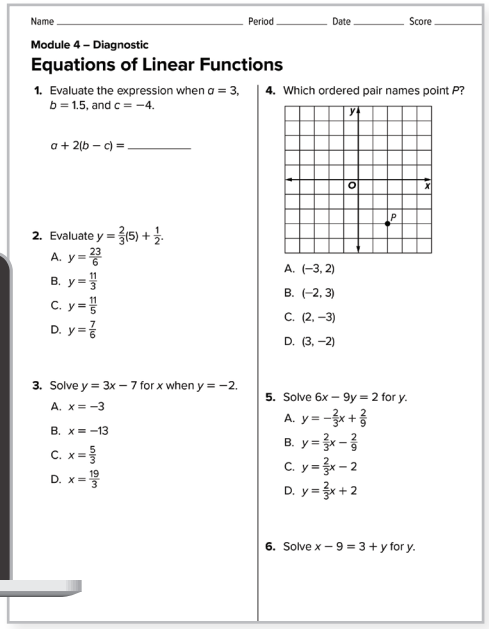
** For districts that use* Map Growth *Data*

Targeted Remediation and Differentiation

Identify Unfinished Learning

Before beginning the module, assign the **Module Diagnostic** to evaluate student readiness for the module content.





Name _____ Period _____ Date _____ Score _____

Module 4 – Diagnostic

Equations of Linear Functions

1. Evaluate the expression when $a = 3$, $b = 1.5$, and $c = -4$.

$a + 2(b - c) =$ _____

2. Evaluate $y = \frac{2}{3}(5) + \frac{1}{2}$.

A. $y = \frac{23}{6}$
B. $y = \frac{11}{3}$
C. $y = \frac{11}{5}$
D. $y = \frac{7}{6}$

3. Solve $y = 3x - 7$ for x when $y = -2$.

A. $x = -3$
B. $x = -13$
C. $x = \frac{5}{3}$
D. $x = \frac{19}{3}$

4. Which ordered pair names point P?

A. (−3, 2)
B. (−2, 3)
C. (2, −3)
D. (3, −2)

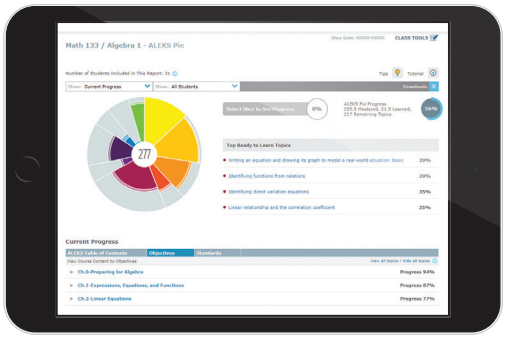
5. Solve $6x - 9y = 2$ for y.

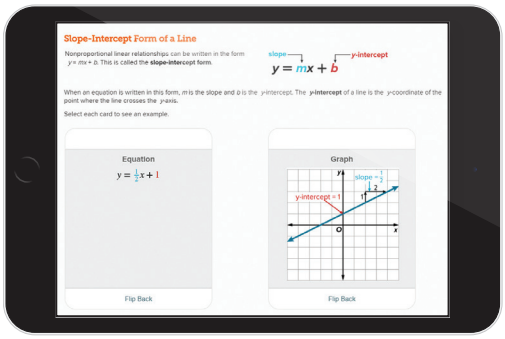
A. $y = -\frac{2}{3}x + \frac{2}{9}$
B. $y = \frac{2}{3}x - \frac{2}{9}$
C. $y = \frac{2}{3}x - 2$
D. $y = \frac{2}{3}x + 2$

6. Solve $x - 9 = 3 + y$ for y.

Targeted Remediation

Review student scores to evaluate and determine the appropriate resources to assign.





ALEKS

Using adaptive questioning, *ALEKS** quickly and accurately determines what topics a student knows and is ready to learn next.

Review Activities

Each **Review Learn** and **Review Example** provides students with a key concept overview and several examples to meet their prerequisite skill needs.

**with Oklahoma Reveal Math and ALEKS bundle*

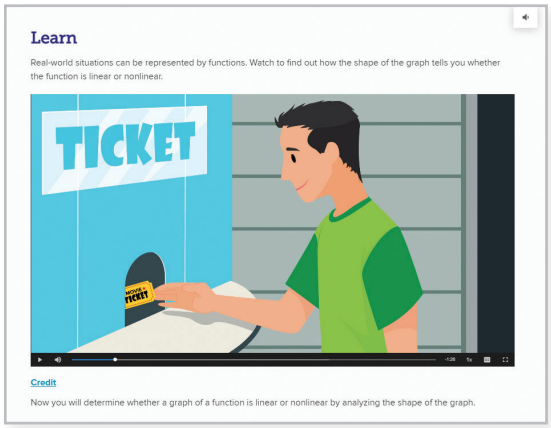
Enrich Learning with Differentiated Resources

During instruction, after reviewing formative assessment sources and data, choose from a variety of differentiation options to meet the needs of your students.

Take Another Look On-Level Reteach Mini-Lessons*

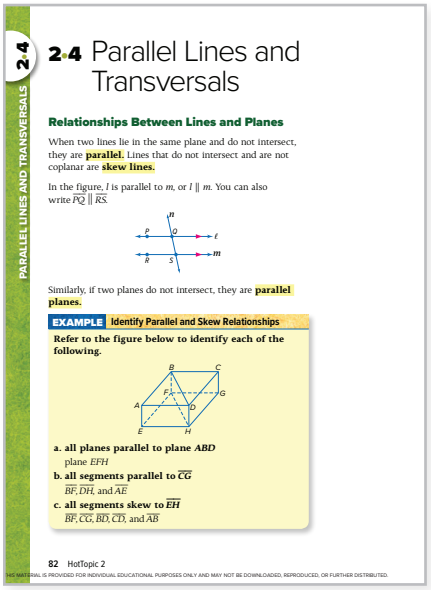
Supplement core instruction with built-in reteach support, including **Model**, **Interactive Practice**, and **Data Check** resources.

** Oklahoma Reveal Algebra 1*



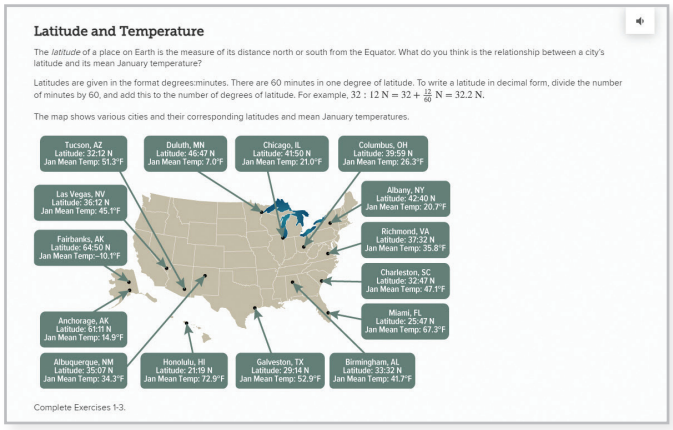
Quick Review Math Handbook

This resource provides additional instruction and practice for prerequisite skills.



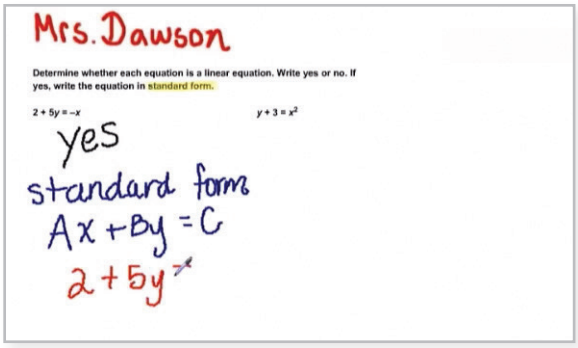
Extension Activities

Digitally assign to students who are ready for a challenge.



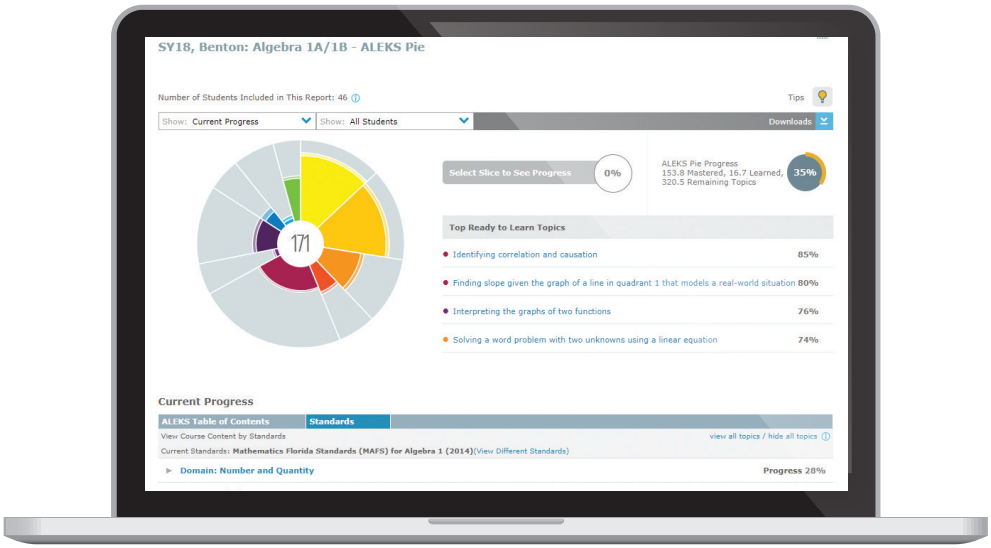
Video Library

Students have access to help videos, **Foldables** support videos, and **Personal Tutor** concept videos for reference. Teachers may choose to assign them for additional student support.



Add *ALEKS** for Personalized Learning

Oklahoma Reveal Math and *ALEKS* provide students the added advantage of a personalized learning pathway continuously adapting to them.

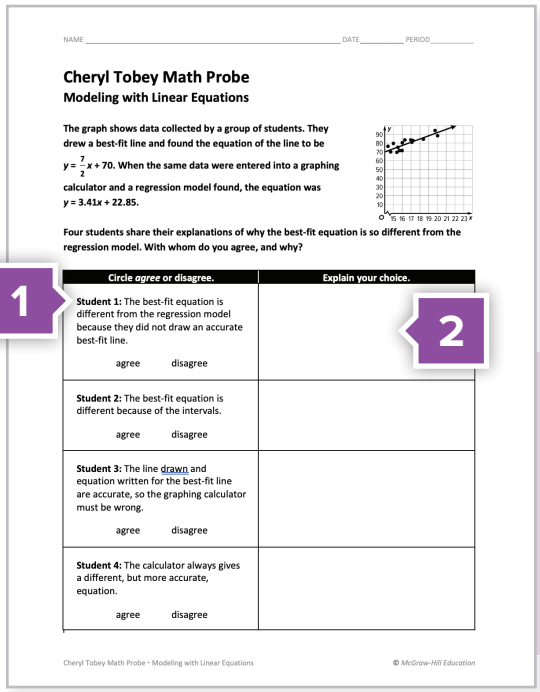


- *ALEKS* can be used effectively for all students, targeting the exact topics each is most ready to learn. This approach minimizes frustration, accelerates learning momentum, and builds confidence.
- Teachers can create *ALEKS* assignments directly connected to *Oklahoma Reveal Math*, so students work on lesson-level content with prerequisite topic support.
- For students who need more challenge, *ALEKS* provides additional extension opportunities and allows students to progress at their own pace.
- *ALEKS* course content spans from Grade 3 to Precalculus for infinite options for course content support.
- An automatic cycle of assessment in *ALEKS* ensures each student's learning pathway is continually refreshed.
- *ALEKS* reports provide visibility at a granular level to measure progress by student, topic, or Oklahoma Mathematics Standards.

**with Oklahoma Reveal Math and ALEKS bundle*

Target Common Misconceptions

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



NAME _____ DATE _____ PERIOD _____

Cheryl Tobey Math Probe
Modeling with Linear Equations

The graph shows data collected by a group of students. They drew a best-fit line and found the equation of the line to be $y = \frac{7}{2}x + 70$. When the same data were entered into a graphing calculator and a regression model found, the equation was $y = 3.41x + 22.85$.

Four students share their explanations of why the best-fit equation is so different from the regression model. With whom do you agree, and why?

Circle *agree* or disagree.	Explain your choice.
Student 1: The best-fit equation is different from the regression model because they did not draw an accurate best-fit line. agree disagree	
Student 2: The best-fit equation is different because of the intervals. agree disagree	
Student 3: The line drawn and equation written for the best-fit line are accurate, so the graphing calculator must be wrong. agree disagree	
Student 4: The calculator always gives a different, but more accurate, equation. agree disagree	

Cheryl Tobey Math Probe • Modeling with Linear Equations © McGraw-Hill Education

1

2

Each Math Probe features three to four items that are split into two parts:

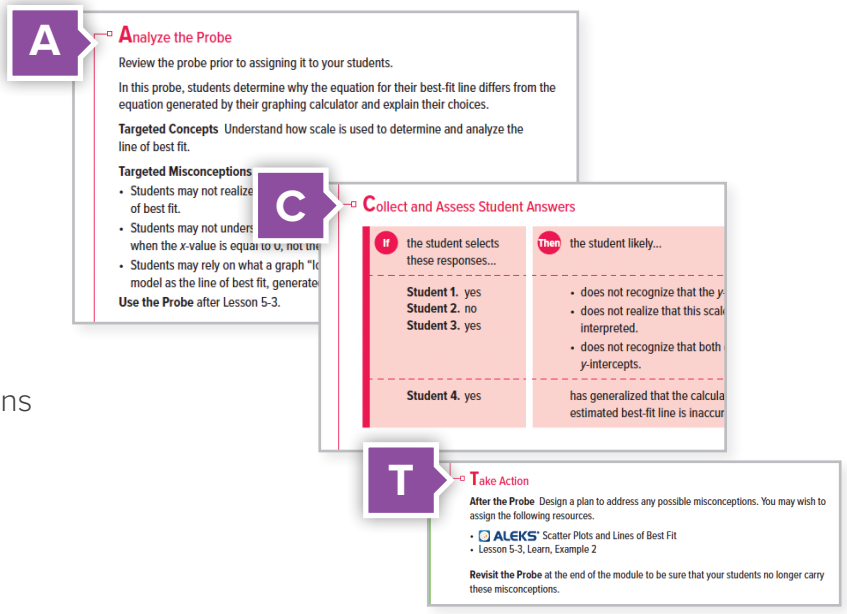
1. **Part One** assesses students' understanding of concepts.
2. **Part Two** asks students to share their thinking about the concepts.

Written by Contributing Author, Cheryl Tobey

Take Action

The teacher support materials that accompany the Math Probes are designed around a three-part ACT cycle:

- **Analyze** the Probe
- **Collect** and Assess Student Work
- **Take Action.** Provided remedies help teachers correct misconceptions quickly and efficiently.



A

Analyze the Probe

Review the probe prior to assigning it to your students.

In this probe, students determine why the equation for their best-fit line differs from the equation generated by their graphing calculator and explain their choices.

Targeted Concepts Understand how scale is used to determine and analyze the line of best fit.

Targeted Misconceptions

- Students may not realize
of best fit.
- Students may not unders
when the *x*-value is equal to 0, not the
- Students may rely on what a graph "lo
model as the line of best fit, generate

Use the Probe after Lesson 5-3.

C

Collect and Assess Student Answers

If the student selects these responses...	Then the student likely...
Student 1. yes **Student 2.** no **Student 3.** yes	• does not recognize that the *y* • does not realize that this scal interpreted. • does not recognize that both *y*-intercepts.
Student 4. yes	has generalized that the calcula estimated best-fit line is inaccur

T

Take Action

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

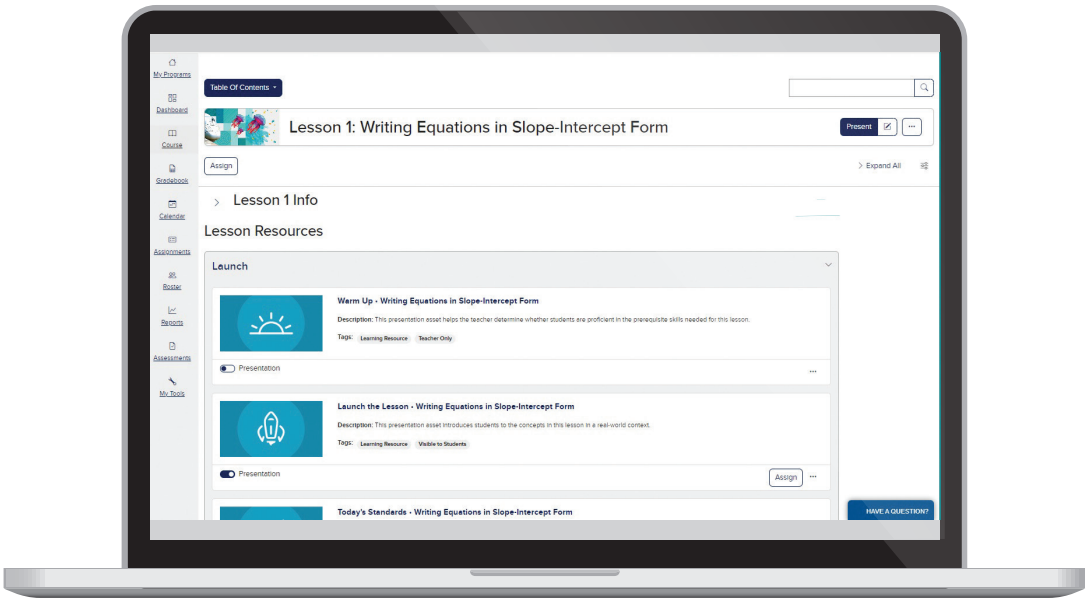
- ALEKS Scatter Plots and Lines of Best Fit
- Lesson 5-3, Learn, Example 2

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

Efficiently Plan for Instruction

See All Lesson Resources at Once

Teachers can view all the lesson resources and plan from organized lesson landing pages within the **Digital Teacher Center** that align with their print Teacher Edition layout. Lessons can be added to the calendar and easily accessed from the **Teacher Dashboard** on the day of learning.



Plan to Facilitate Productive Learning

Each research-based routine of NCTM's **Effective Teaching Practices** can be found in the structure of the *Oklahoma Reveal Math* Teacher Edition and Digital Teacher Center.

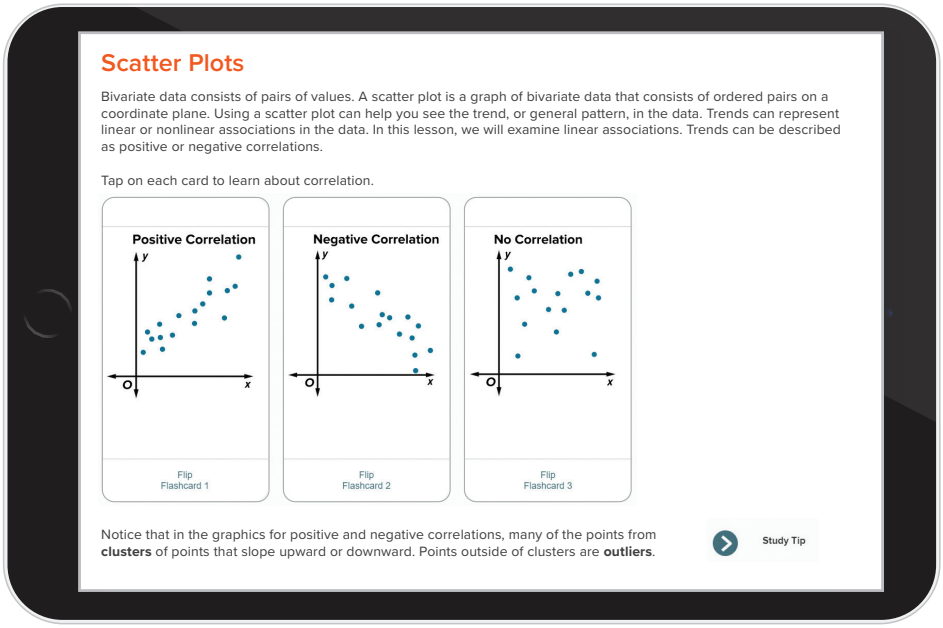
These eight practices include:

- **ESTABLISH** mathematical goals to focus learning.
- **IMPLEMENT** tasks that promote reasoning and problem-solving.
- **USE AND CONNECT** mathematical representations.
- **FACILITATE** meaningful mathematical discourse.
- **POSE** purposeful questions.
- **BUILD** procedural fluency from conceptual understanding.
- **SUPPORT** productive struggle in learning mathematics.
- **ELICIT AND USE** evidence of student thinking.

Access and Customize Lesson Presentations

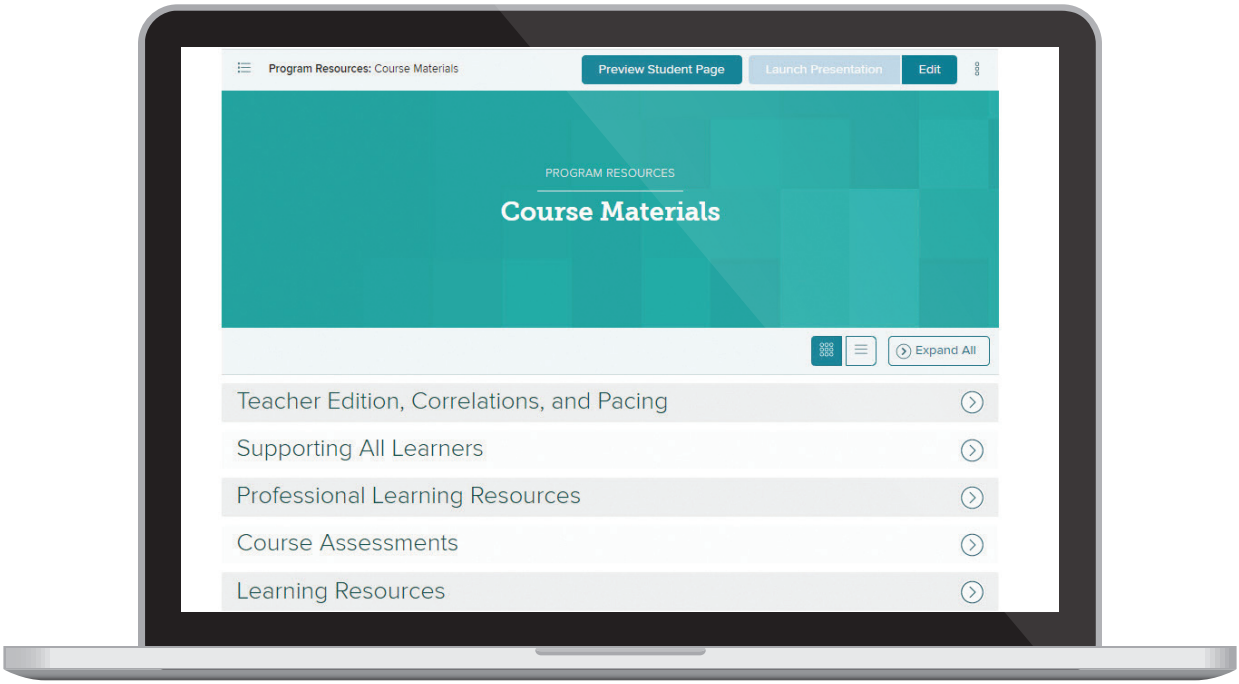
Interactive Lesson Presentation

Teachers have a ready-made Interactive Lesson Presentation with embedded eTools, videos, and animations. This presentation is easily customizable: hide resources or upload teacher files, links, and slides.



Expert-Led Professional Development

Teachers and administrators have access to a comprehensive set of self-paced digital resources available within the Digital Teacher Center for each grade.



Quick Start

Teachers can get up to speed quickly with the *Oklahoma Reveal Math* resources and curriculum overview.

Digital Walkthrough

Digital platform guidance from a teacher view and a student view.

Instructional Videos

Oklahoma Reveal Math authors and experts present guidance and tips on the program.

Cathy Seeley:

- Productive Struggle and Discourse
- Fostering a Positive Math Mindset

Dr. Raj Shah:

- Ignite! Activities

Cheryl Tobey:

- Math Probes

Notes

Notes

Oklahoma Reveal

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