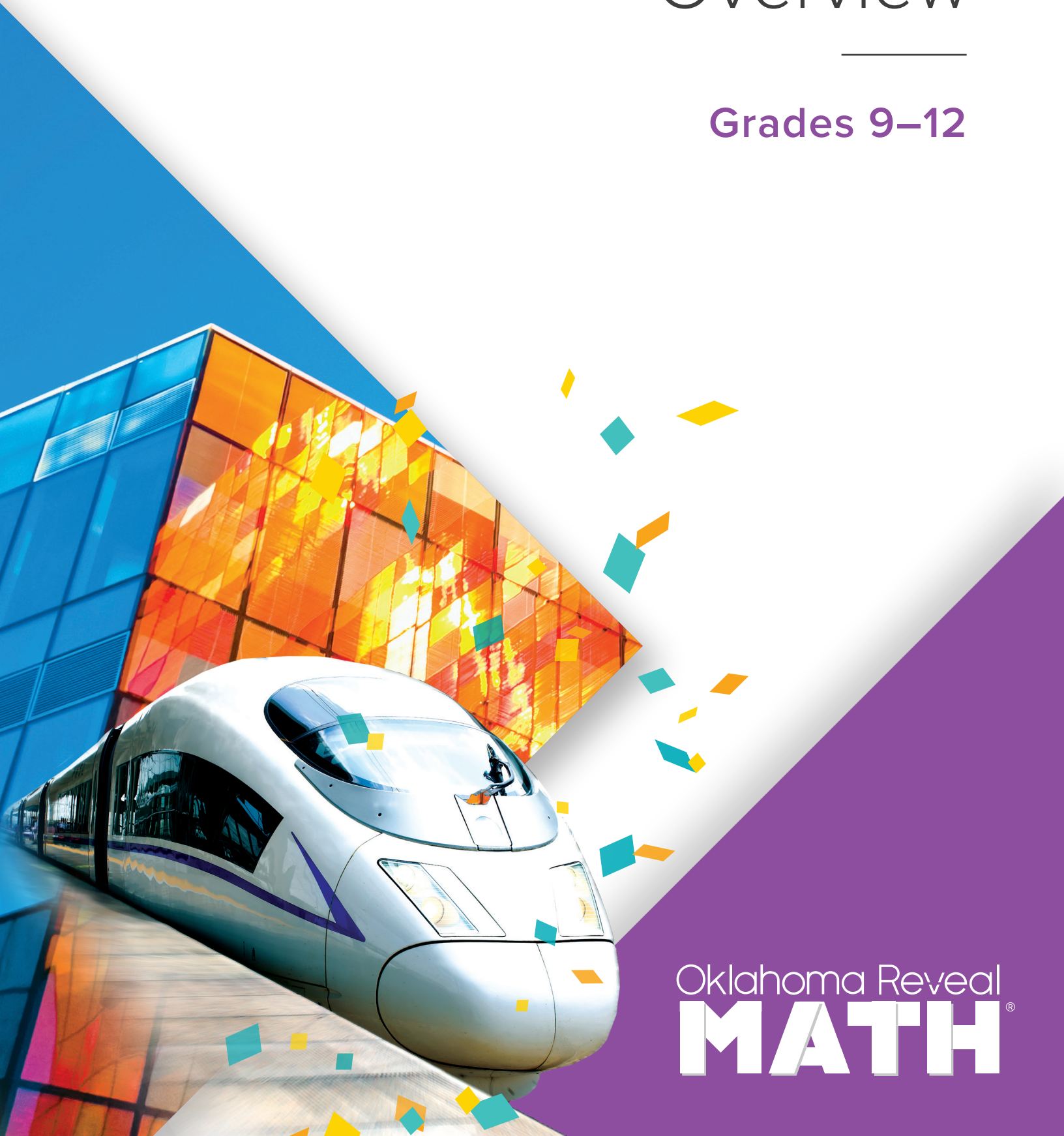




Program Overview

Grades 9–12



Oklahoma Reveal
MATH[®]



At A Glance

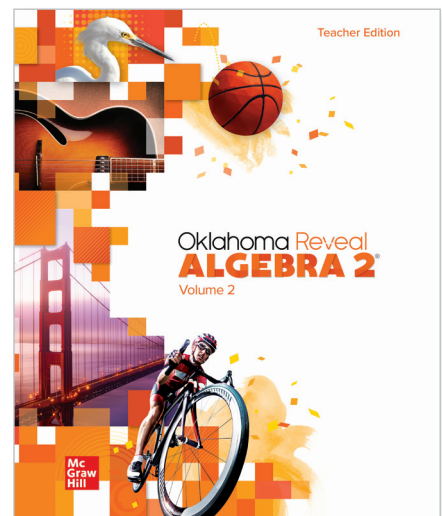
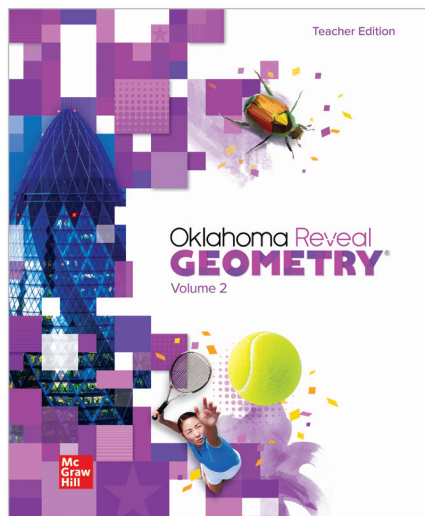
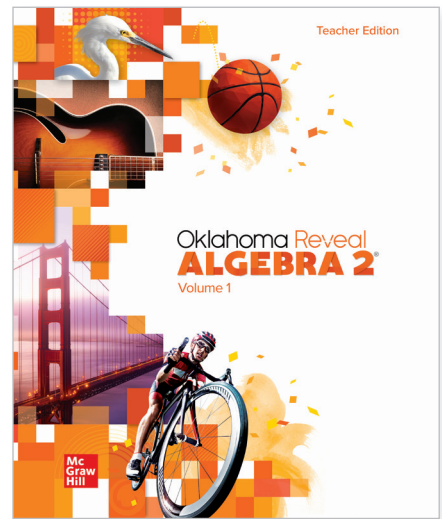
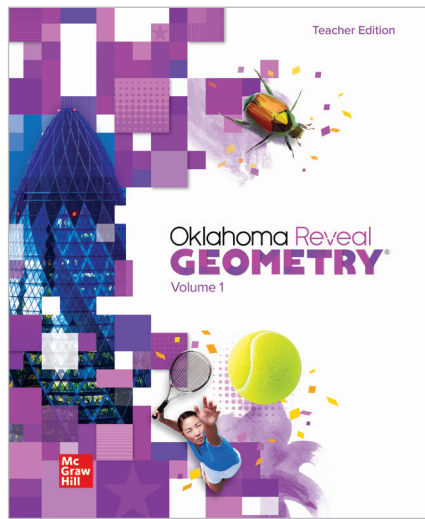
Teacher Resources	4
Student Resources	6
Designed to Meet Oklahoma Mathematics Standards	8
Learning Progression	9
Program Table of Contents	10
Lesson Model	16
Spark Curiosity	18
Sense-Making and Reasoning	19
Problem Solving and Application	20
Purposeful Practice	22
Positive Math Habits	24
Building Mathematical Language	26
Real-World Connections	27
Assessment	28
Targeted Remediation and Differentiation	30
Add ALEKS® For Personalized Learning	32
Target Common Misconceptions	33
Efficiently Plan for Instruction	34
Expert-Led Professional Learning	36

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



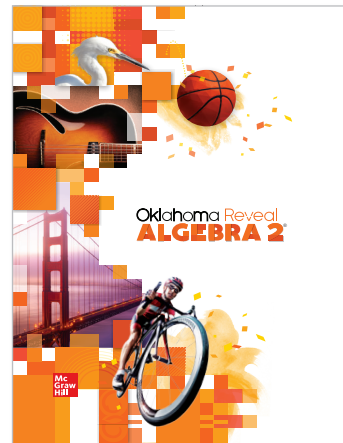
**with Oklahoma Reveal Math and ALEKS bundle*

Student Resources

Print Resources

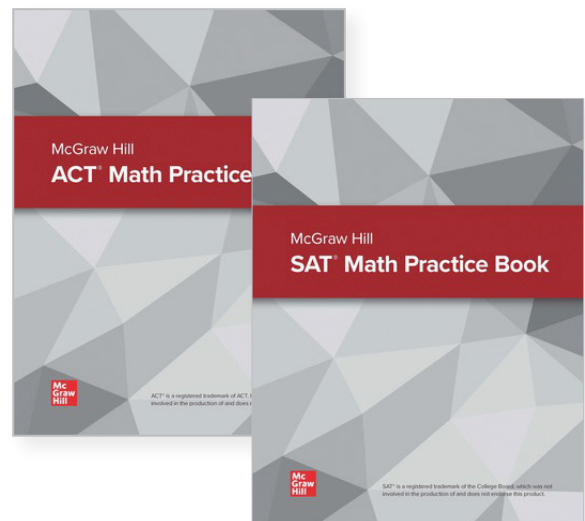
Student Edition, Hardcover

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

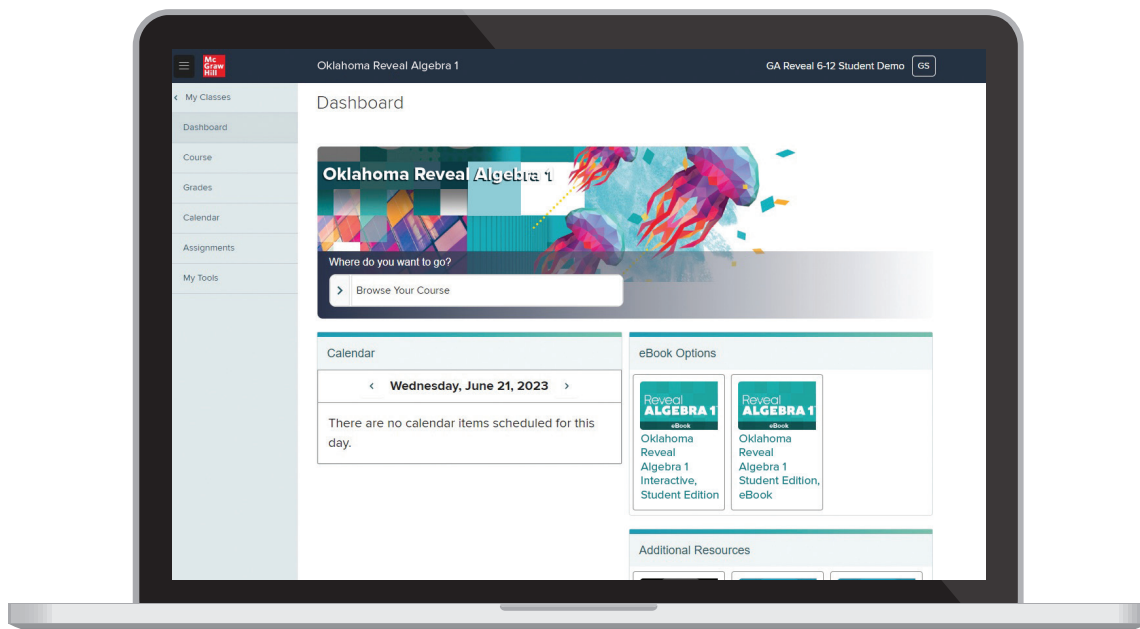
Constructed to provide students practice leading up to either the ACT® or the SAT® tests, these practice books cover the concepts and question types found on each test.



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.

Lesson 5-1
Writing Equations in Slope-Intercept Form

1 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

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

Resources	AI	DL	ELI	ELI
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.
 You can use the tips and suggestions on page 127 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 y -intercept are known.

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.

8 | Oklahoma Reveal Math 9–12 Program Overview

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.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.2** Analyze and interpret mathematical models involving lines that are parallel, perpendicular, horizontal, and vertical.
- A1.A.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** Express linear equations in slope-intercept, point-slope, and standard forms. Convert between these forms.
- A1.A.5** Analyze and interpret associations between graphical representations and written scenarios.
- A1.D.2** Collect data and analyze scatter plots for patterns, linearity, and outliers.
- A1.D.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** Write linear functions, using function notation, to represent mathematical models.
- A1.F.3** 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.1, A1.A.2, A1.A.3, A1.A.4, A1.A.5, A1.D.1, A1.D.2, A1.D.3, A1.F.1, A1.F.3

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 Videos			
5-1	A1.A.1, A1.A.2, A1.A.3, A1.A.4, A1.A.5, A1.F.3	1	0.5
5-2	A1.A.1, A1.A.2, A1.A.3, A1.A.4, A1.A.5	2	1
Put It All Together: Lessons 5-1 through 5-2			
5-3	A1.A.1, A1.A.3, A1.A.4, A1.D.2	2	1
5-4	A1.A.1, A1.D.1, A1.D.3	1	0.5
5-5	A1.F.3	2	1
Module Review			
		1	0.5
		1	0.5
		12	6.0

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
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.
You can use the tips and suggestions on page 127 of the handbook to support students who are building English proficiency.

Suggested Pacing
90 min 0.5 day
45 min 1 day

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Domain: Algebraic Reasoning & Algebra, Functions
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A1.A.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 Express linear equations in slope-intercept, point-slope, and standard forms. Convert between these forms.
A1.A.5 Analyze and interpret associations between graphical representations and written scenarios.
A1.F.3 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.1, A1.A.3, A1.A.4, A1.A.5, A1.F.3

Next
Students will create linear equations in point-slope form and standard form.
A1.A.3, A1.A.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
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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 1 Expressions

- Lesson 1:** Numerical Expressions
- Lesson 2:** Algebraic Expressions
- Lesson 3:** Properties of Real Numbers
- Expand 1–3:** Operations with Rational Numbers
- Lesson 4:** Distributive Property
- Lesson 5:** Expressions Involving Absolute Value
- Lesson 6:** Descriptive Modeling and Accuracy

Module 2 Equations in One Variable

- Lesson 1:** Writing and Interpreting Equations
- Lesson 2:** Solving One-Step Equations
- Lesson 3:** Solving Multi-Step Equations
- Lesson 4:** Solving Equations with the Variable on Each Side
- Lesson 5:** Solving Equations Involving Absolute Value
- Lesson 6:** Solving Proportions
- Lesson 7:** Using Formulas

Module 3 Relations and Functions

- Lesson 1:** Representing Relations
- Lesson 2:** Functions
- Lesson 3:** Linearity and Continuity of Graphs
- Lesson 4:** Intercepts of Graphs
- Lesson 5:** Shapes of Graphs
- Lesson 6:** Sketching Graphs and Comparing Functions

Module 4 Linear and Nonlinear Functions

- Lesson 1:** Graphing Linear Functions
- Lesson 2:** Rate of Change and Slope
- Lesson 3:** Slope-Intercept Form
- Expand 4–3:** Linear Growth Patterns
- Lesson 4:** Transformations of Linear Functions
- Lesson 5:** Piecewise and Step Functions
- Lesson 6:** Absolute Value Functions

Module 5 Creating Linear Equations

- Lesson 1:** Writing Equations in Slope-Intercept Form
- Lesson 2:** Writing Equations in Standard and Point-Slope Forms
- Lesson 3:** Scatter Plots and Lines of Fit
- Lesson 4:** Linear Regression
- Lesson 5:** Inverses of Linear Functions

Module 6 Linear Inequalities

- Lesson 1:** Solving One-Step Inequalities
- Lesson 2:** Solving Multi-Step Inequalities
- Lesson 3:** Solving Compound Inequalities
- Lesson 4:** Solving Absolute Value Inequalities
- Lesson 5:** Graphing Inequalities in Two Variables

Module 7 Systems of Linear Equations and Inequalities

- Lesson 1:** Graphing Systems of Equations
- Lesson 2:** Substitution
- Lesson 3:** Elimination Using Addition and Subtraction
- Lesson 4:** Elimination Using Multiplication
- Lesson 5:** Systems of Inequalities

Module 8 Exponents and Roots

- Lesson 1:** Multiplication Properties of Exponents
- Lesson 2:** Division Properties of Exponents
- Lesson 3:** Negative Exponents
- Lesson 4:** Rational Exponents
- Lesson 5:** Simplifying Radical Expressions
- Lesson 6:** Operations with Radical Expressions
- Expand 8–6:** Sums and Products of Rational and Irrational Numbers
- Lesson 7:** Exponential Equations

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 1 Tools of Geometry

- Lesson 1:** The Geometric System
- Lesson 2:** Points, Lines, and Planes
- Lesson 3:** Line Segments
- Lesson 4:** Distance
- Lesson 5:** Locating Points on a Number Line
- Lesson 6:** Locating Points on a Coordinate Plane
- Lesson 7:** Midpoints and Bisectors

Module 2 Angles and Geometric Figures

- Lesson 1:** Angles and Congruence
- Lesson 2:** Angle Relationship
- Lesson 3:** Two-Dimensional Figures
- Lesson 4:** Transformations in the Plane
- Lesson 5:** Three-Dimensional Figures
- Lesson 6:** Two-Dimensional Representations of Three-Dimensional Figures
- Lesson 7:** Precision and Accuracy
- Lesson 8:** Representing Measurements

Module 3 Logical Arguments and Line Relationship

- Lesson 1:** Conjectures and Counterexamples
- Lesson 2:** Statements, Conditionals, and Biconditionals
- Lesson 3:** Deductive Reasoning
- Lesson 4:** Writing Proofs
- Lesson 5:** Proving Segment Relationship
- Lesson 6:** Proving Angle Relationship
- Lesson 7:** Parallel Lines and Transversals
- Lesson 8:** Slope and Equations of Lines
- Lesson 9:** Proving Lines Parallel
- Lesson 10:** Perpendiculars and Distance

Module 4 Transformations and Symmetry

- Lesson 1:** Reflections
- Lesson 2:** Translations
- Lesson 3:** Rotations
- Lesson 4:** Compositions of Transformations
- Lesson 5:** Tessellations
- Lesson 6:** Symmetry

Module 5 Triangles and Congruence

- Lesson 1:** Angles of Triangles
- Lesson 2:** Congruent Triangles
- Lesson 3:** Proving Triangles Congruent: SSS, SAS
- Lesson 4:** Proving Triangles Congruent: ASA, AAS
- Lesson 5:** Proving Right Triangles Congruent
- Lesson 6:** Isosceles and Equilateral Triangles
- Lesson 7:** Triangles and Coordinate Proof

Module 6 Relationship in Triangles

- Lesson 1:** Perpendicular Bisectors
- Lesson 2:** Angle Bisectors
- Lesson 3:** Medians and Altitudes of Triangles
- Lesson 4:** Inequalities in One Triangle
- Lesson 5:** Indirect Proof
- Lesson 6:** The Triangle Inequality
- Lesson 7:** Inequalities in Two Triangles

Module 7 Quadrilaterals

- Lesson 1:** Angles of Polygons
- Lesson 2:** Parallelograms
- Lesson 3:** Tests for Parallelograms
- Lesson 4:** Rectangles
- Lesson 5:** Rhombi and Squares
- Lesson 6:** Trapezoids and Kites

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 1 Relations and Functions

- Lesson 1:** Functions and Continuity
- Lesson 2:** Linearity, Intercepts, and Symmetry
- Lesson 3:** Extrema and End Behavior
- Lesson 4:** Sketching Graphs and Comparing Functions
- Lesson 5:** Graphing Linear Functions and Inequalities
- Lesson 6:** Special Functions
- Lesson 7:** Transformations of Functions

Module 2 Linear Equations, Inequalities and Systems

- Lesson 1:** Solving Linear Equations and Inequalities
- Lesson 2:** Solving Absolute Value Equations and Inequalities
- Lesson 3:** Equations of Linear Functions
- Lesson 4:** Solving Systems of Equations Graphically
- Lesson 5:** Solving Systems of Equations Algebraically
- Lesson 6:** Solving Systems of Inequalities
- Lesson 7:** Optimization with Linear Programming
- Lesson 8:** Systems of Equations in Three Variables
- Lesson 9:** Solving Absolute Value Equations and Inequalities by Graphing
- Lesson 10:** Arithmetic Sequences
- Extend 2–10:** Arithmetic Sequences and Series
- Lesson 11:** Correlation and Causation

Module 3 Quadratic Functions

- Lesson 1:** Graphing Quadratic Functions
- Lesson 2:** Solving Quadratic Equations by Graphing
- Lesson 3:** Complex Numbers
- Extend 3–3:** Imaginary Numbers Raised to a Power
- Lesson 4:** Solving Quadratic Equations by Factoring
- Lesson 5:** Solving Quadratic Equations by Completing the Square
- Lesson 6:** Using the Quadratic Formula and the Discriminant
- Lesson 7:** Quadratic Inequalities
- Lesson 8:** Solving Linear-Nonlinear Systems

Module 4 Polynomials and Polynomial Functions

- Lesson 1:** Polynomial Functions
- Lesson 2:** Analyzing Graphs of Polynomial Functions
- Lesson 3:** Operations with Polynomials
- Lesson 4:** Dividing Polynomials
- Lesson 5:** Powers of Binomials

Module 5 Polynomial Equations

- Lesson 1:** Solving Polynomial Equations by Graphing
- Lesson 2:** Solving Polynomial Equations Algebraically
- Lesson 3:** Proving Polynomial Identities
- Lesson 4:** The Remainder and Factor Theorems
- Lesson 5:** Roots and Zeros

Module 6 Inverses and Radical Functions

- Lesson 1:** Operations with Functions
- Lesson 2:** Inverse Relations and Functions
- Lesson 3:** n th Roots and Rational Exponents
- Lesson 4:** Graphing Radical Functions
- Lesson 5:** Operations with Radical Expressions
- Lesson 6:** Solving Radical Equations

Module 7 Exponential Functions

- Lesson 1:** Graphing Exponential Functions
- Lesson 2:** Solving Exponential Equations and Inequalities
- Lesson 3:** Special Exponential Functions
- Lesson 4:** Geometric Sequences and Series
- Expand 7–4:** Sum of a Finite Geometric Series
- Lesson 5:** Modeling Data

Module 8 Logarithmic Functions

- Lesson 1:** Logarithms and Logarithmic Functions
- Lesson 2:** Properties of Logarithms
- Lesson 3:** Common Logarithms
- Lesson 4:** Natural Logarithms
- Lesson 5:** Using Exponential and Logarithmic Functions

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

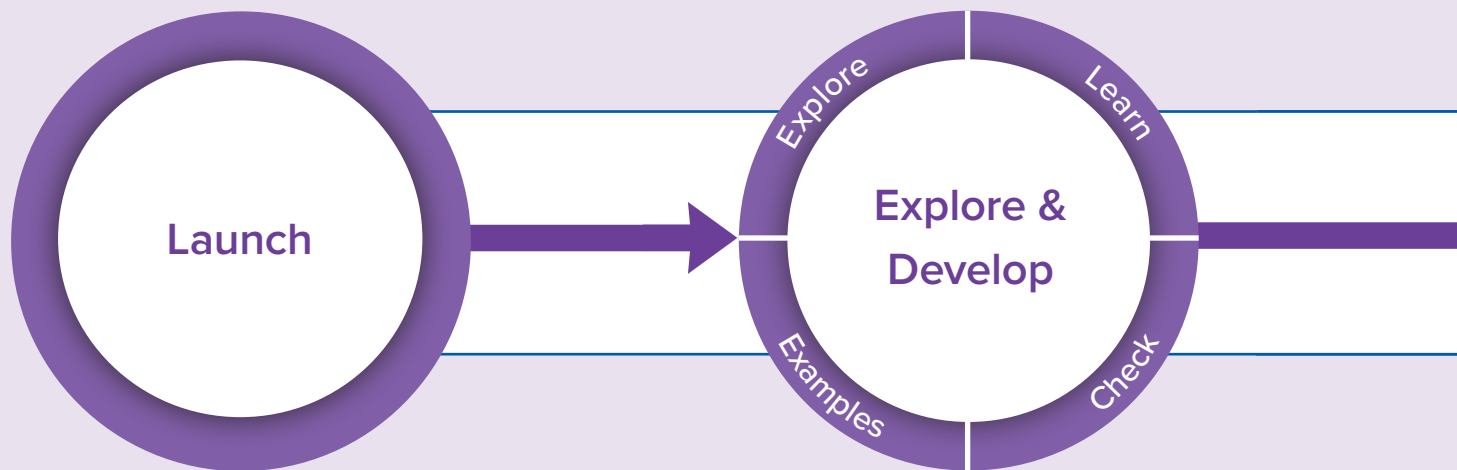
- Lesson 1:** Trigonometric Identities
- Lesson 2:** Verifying Trigonometric Identities
- Lesson 3:** Sum and Difference Identities
- Lesson 4:** Double-Angle and Half-Angle Identities
- Lesson 5:** Solving Trigonometric Equations

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



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.



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

–Raj Shah, Ph.D.,
Contributing Author

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?

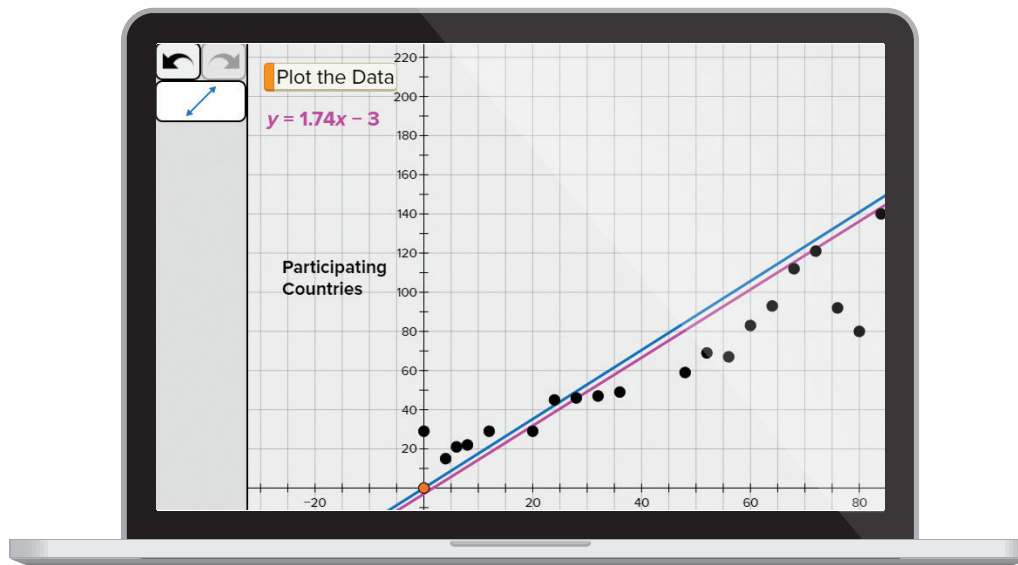
Formulate the Model

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

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 $g(x) = 2x^2 - x$, 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

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.

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 $f(x)$ and $k(x)$.

Go Online
 You can complete an Extra Example online.

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 $(\frac{f}{g})(x)$ 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.

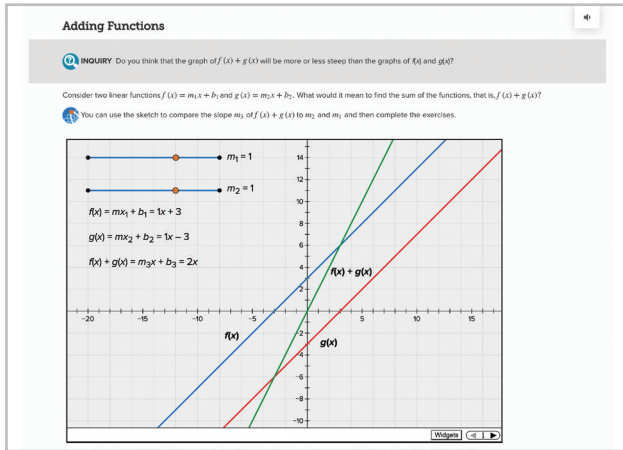
Competitor, Year	Time (s)	Competitor, Year	Time (s)	Competitor, Year	Time (s)
Dan Knights, 2003	16.71	Ron van Bruchem, 2007	9.55	Lucas Etter, 2015	4.90
Jess Bonde, 2003	16.53	Yu Nakajima, 2008	8.72	Mats Valk, 2016	4.74
Shotaro Makisumi, 2004	15.07	Erik Akkersdijk, 2008	7.08	Feliks Zemdegs, 2016	4.73
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?

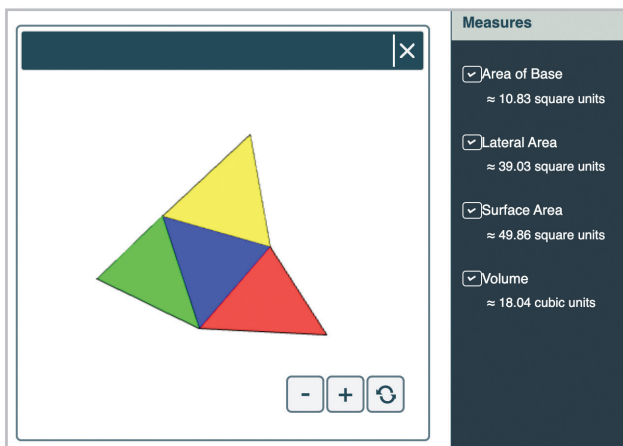
What questions can you ask?

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.

Pause and Reflect

Did you struggle with anything in this lesson? If so, how did you deal with it?

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.

Example 4 Compose Functions by Using Ordered Pairs

Given f and g , find $(f \circ g)(x)$ and $(g \circ f)(x)$. State the domain and range for each.

$f = \{(1, 12), (10, 11), (0, 13), (9, 7)\}$ $g = \{(4, 1), (5, 0), (13, 9), (12, 10)\}$

Part A Find $(f \circ g)(x)$ and $(g \circ f)(x)$.

To find $f \circ g$, evaluate $g(x)$ first then use the range to evaluate $f(x)$.	To find $g \circ f$, evaluate $f(x)$ first then use the range to evaluate $g(x)$.
$f(g(4)) = f(1)$ or $g(4) = 1$	$g(f(1)) = g(12)$ or $f(1) = 12$
$f(g(5)) = f(0)$ or $g(5) = 0$	$g(f(10)) = g(11)$ or $f(10) = 11$
$f(g(13)) = f(9)$ or $g(13) = 9$	$g(f(0)) = g(13)$ or $f(0) = 13$
$f(g(12)) = f(10)$ or $g(12) = 10$	$g(f(9)) = g(7)$ or $f(9) = 7$

Because 11 and 7 are not in the domain of g , $g \circ f$ is undefined for $x = 11$ and $x = 7$. So, $g \circ f = \{(1, 10), (0, 9)\}$.

Part B State the domain and range.

$(f \circ g)(x)$: The domain is the x -coordinates of the composed function, so $D = \{4, 5, 13\}$. The range is the y -coordinates of the composed function, so $R = \{7, 11, 12\}$.

$(g \circ f)(x)$: The domain is the x -coordinates of the composed function, so $D = \{1, 10, 0, 9\}$. The range is the y -coordinates of the composed function, so $R = \{9, 10\}$.

Example 5 Compose Functions

Given $f(x) = 2x - 5$ and $g(x) = 3x$, find $(f \circ g)(x)$ and $(g \circ f)(x)$. State the domain and range for each.

Part A Find $(f \circ g)(x)$ and $(g \circ f)(x)$.

$(f \circ g)(x) = f(g(x))$	Composition of functions	$(g \circ f)(x) = g(f(x))$
$=$	Substitute.	$= g(2x - 5)$
$= 2(3x) - 5$	Substitute again.	$=$
$= 6x - 5$	Simplify.	$= 6x - 15$

Part B State the domain and range.

Because $(f \circ g)(x)$ and $(g \circ f)(x)$ are both linear functions with nonzero slopes, $D = \{\text{all real numbers}\}$ and $R = \{\text{all real numbers}\}$ for both functions.

Go Online You can complete an Extra Example online.

Study Tip
Domain and Range To ensure you have the right domain and range, it can help to graph $(f \circ g)(x)$ and $(g \circ f)(x)$.

Lesson 6-1 • Operations on Functions 295

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 .

-
-
-

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.

- $m\widehat{EA}$
- $m\widehat{CB}$
- $m\widehat{DC}$
- $m\widehat{DEB}$
- $m\widehat{AB}$
- $m\widehat{DA}$

Example 3

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

Example 4
 \overline{PR} and \overline{QT} are diameters of $\odot A$. Find each measure.

- $m\widehat{URQ}$
- $m\widehat{PQR}$
- $m\widehat{UTS}$
- $m\widehat{RSU}$
- $m\widehat{RQS}$
- $m\widehat{STP}$
- $m\widehat{PRU}$

Lesson 10-2 • Measuring Angles and Arcs 583

NAME _____ DATE _____ PERIOD _____

Extra Practice
Measuring Angles and Arcs

Example 1
Find the value of 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.

- $m\widehat{L}$
- $m\widehat{MKM}$
- $m\widehat{NL}$

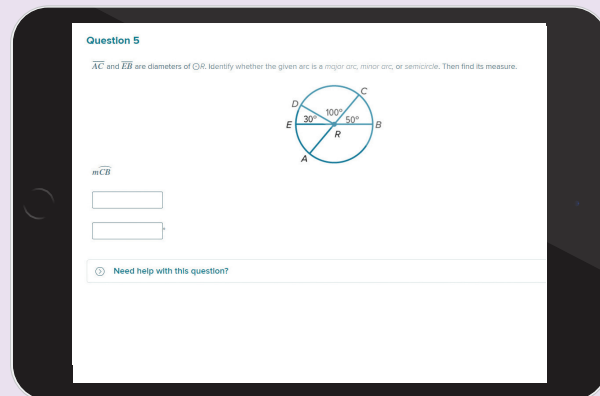
Example 3

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

Measuring Angles and Arcs Extra Practice

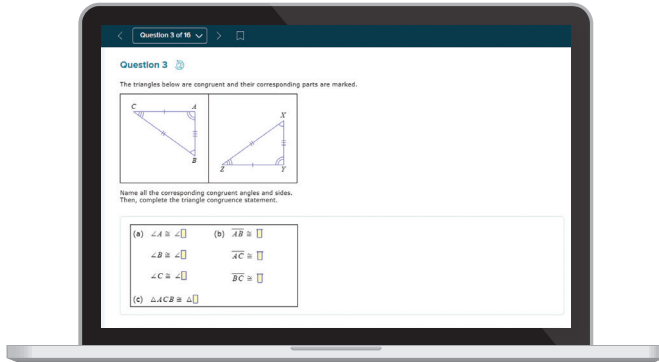
Benefits of Digital Practice

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



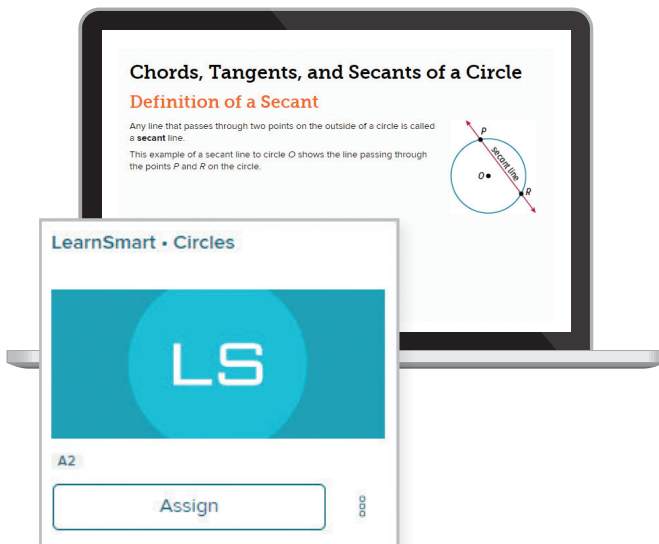
Dynamic Practice

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



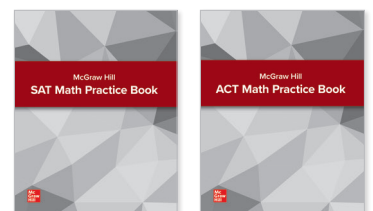
LearnSmart®

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



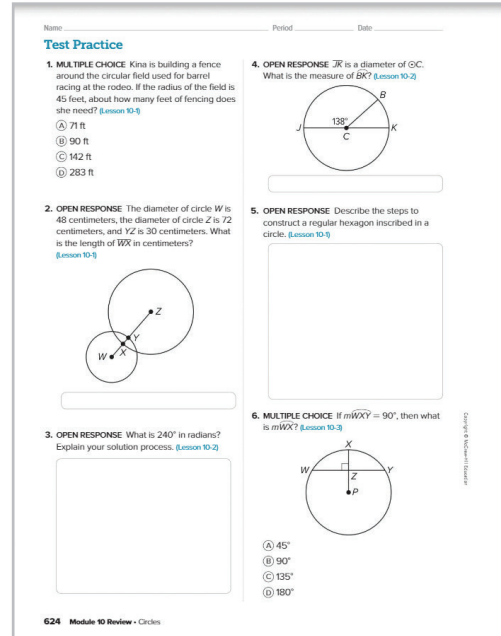
ACT® and SAT® Practice

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.



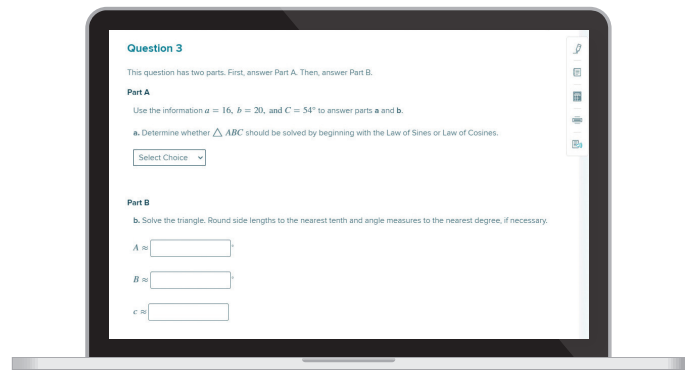
Module Test Practice

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.



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.

2 EXPLORE AND DEVELOP 6.CO.C.9

Example 3 Find Angle Measures in Right Triangles

Study Tip
Check for Reasonableness: When you are solving for the measure of an angle, check to make sure that the total sum of the angles in the triangle is 180° .

Think About It! Do you have enough information to solve for $m\angle EFD$ (the angle) in the triangle $\triangle EFD$?

Work Sample Answer: Because $\triangle ABC$ is a right triangle, $m\angle C = 90^\circ$. Because \overline{BD} is an angle bisector, $m\angle CBD = m\angle ABD = 45^\circ$. Because $\triangle BDC$ is a right triangle, $m\angle BDC = 90^\circ - m\angle CBD = 90^\circ - 45^\circ = 45^\circ$. Because $\triangle BDC$ and $\triangle EFD$ form a linear pair, $m\angle EFD = 180^\circ - m\angle BDC = 180^\circ - 45^\circ = 135^\circ$.

Questions for Mathematical Discourse

AL What do you know about $m\angle BDC + m\angle DBC + m\angle C$? The sum is 180° .

OL What kind of angles are $\angle BAF$ and $\angle EAF$? complementary angles

EL Can you find $m\angle EFD$ before you find $m\angle AFB$? Explain. No; sample answer: You don't have enough information to find $m\angle EFD$ until you find $m\angle AFB$.

Exit Ticket
Recommended Use: At the end of class, go online to display the Exit Ticket prompt and ask students to respond using a separate piece of paper. Have students hand you their responses as they leave the room.

Alternate Use
At the end of class, go online to display the Exit Ticket prompt and ask students to respond verbally or by using a mini-whiteboard. Have students hold up their whiteboards so that you can see all student responses. Tap to reveal the answer when most or all students have completed the Exit Ticket.

Mathematical Discourse

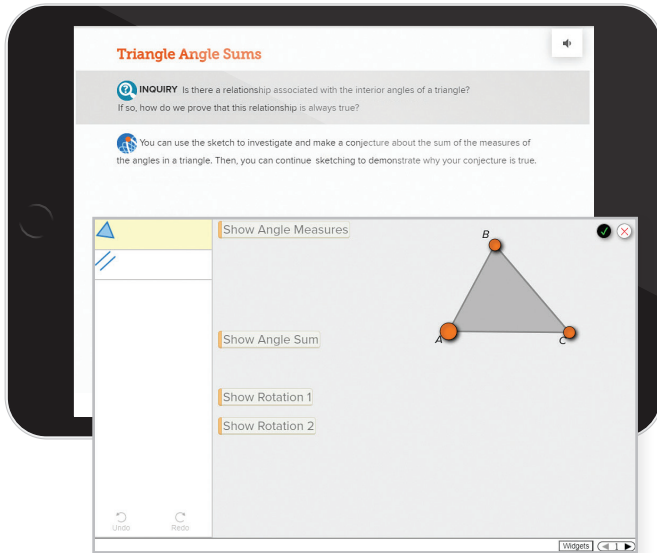
As a discourse-driven program, *Oklahoma Reveal Math* makes class discussion part of the norm through Student Edition **Talk About It!** prompts and corresponding Teacher Edition **Questions for Mathematical Discourse** prompts.

Questions for Mathematical Discourse

- AL** What do you know about $m\angle BDC + m\angle DBC + m\angle C$? The sum is 180° .
- OL** What kind of angles are $\angle BAF$ and $\angle EAF$? complementary angles
- EL** Can you find $m\angle EFD$ before you find $m\angle AFB$? Explain. No; sample answer: You don't have enough information to find $m\angle EFD$ until you find $m\angle AFB$.

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**.

NAME _____ DATE _____ PERIOD _____

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 $\triangle ABC$?

Show Angle Measures

Show Angle Sum

Show Rotation 1

Show Rotation 2

2. Make a conjecture about the sum of the measures of the interior angles in any triangle.
3. How is $\angle BAC$ related to $\angle CBA$? Justify your answer.

Explore • Triangle Angle Sums © McGraw-Hill Education

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

Talk About It!

Ellie believes that she can solve for $m\angle 3$ before solving for $m\angle 1$. What useful questions can you ask to understand her approach?

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.

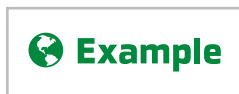
Relatable Scenarios

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.



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.

Apply Example 7 Write and Solve an Inequality

A has read approximately $\frac{1}{2}$ of a novel. If she has read at all, how many pages are there in the novel?

the task?

task in your own words. Then list any questions that you ask you find answers to your questions?

you approach the task? What have you learned that one to help you complete the task?

your solution?

number of pages in the novel: _____

ive an inequality to represent this situation. Let n = the pages in the novel.

least _____ pages in the novel.

you know that your solution is reasonable?

not it! Write an argument that can be used to defend _____

For every hour x that Eva's electric car charges, she can drive 75 miles. Eva needs to drive at least 60 miles. An inequality represents the situation in terms of x hours? _____

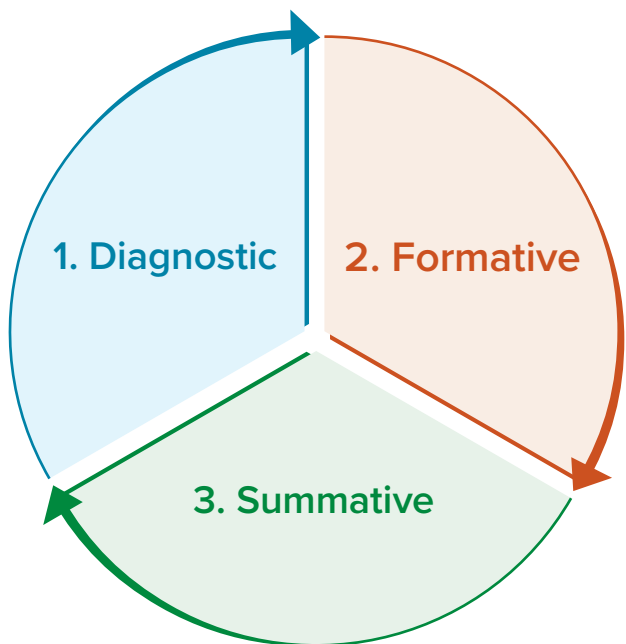
is the least amount of time that Eva will need to charge _____ hours

Math History Minute

German mathematician **Emmy Noether (1882–1935)** has been described as one of the greatest mathematicians of the twentieth century. She devised theorems for several concepts later found in Einstein's theory of relativity and was one of the founders of abstract algebra. One person wrote, "The development of abstract algebra, which is one of the most distinctive innovations of twentieth-century mathematics, is largely due to her."

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	<ul style="list-style-type: none"> • Are You Ready? 	<ul style="list-style-type: none"> • Course Diagnostic • Module Diagnostic • Warm Up
Formative	<ul style="list-style-type: none"> • Examples • Lesson Practice including Skills, Application, Higher Order Thinking • Cheryl Tobey Formative Assessment Probe • Check 	<ul style="list-style-type: none"> • Items from Student Edition • Extra Examples • Extra Practice • Spiral Review • Put it All Together • Exit Ticket • ALEKS*
Summative	<ul style="list-style-type: none"> • Module Review 	<ul style="list-style-type: none"> • 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.

Print Format:

NAME: _____ DATE: _____ PERIOD: _____ SCORE: _____

5. SURVEY The circle graph shows the percentage of students who voted for each ice cream flavor.

Favorite Ice Cream Flavors

Cookies-n-Cream	7%	A
Neapolitan	3%	C
Strawberry	10%	B
Black Raspberry	5%	G
Cookie Dough	4%	F
Vanilla	38%	D
Chocolate	33%	E

Explain how to determine the measure of \widehat{CD} .

6. Which of the following represents 255° in radians?
 $\frac{11}{12}$
 $\frac{11}{12}$
 $\frac{11}{24}$
 $\frac{11}{24}$

7. In the figure, $\widehat{QR} \cong 3P^\circ$

What is the length of \widehat{QR} ?
 $\widehat{QR} =$ _____

Digital Format:

Question 5

SURVEY The circle graph shows the percentage of students who voted for each ice cream flavor.

Favorite Ice Cream Flavors

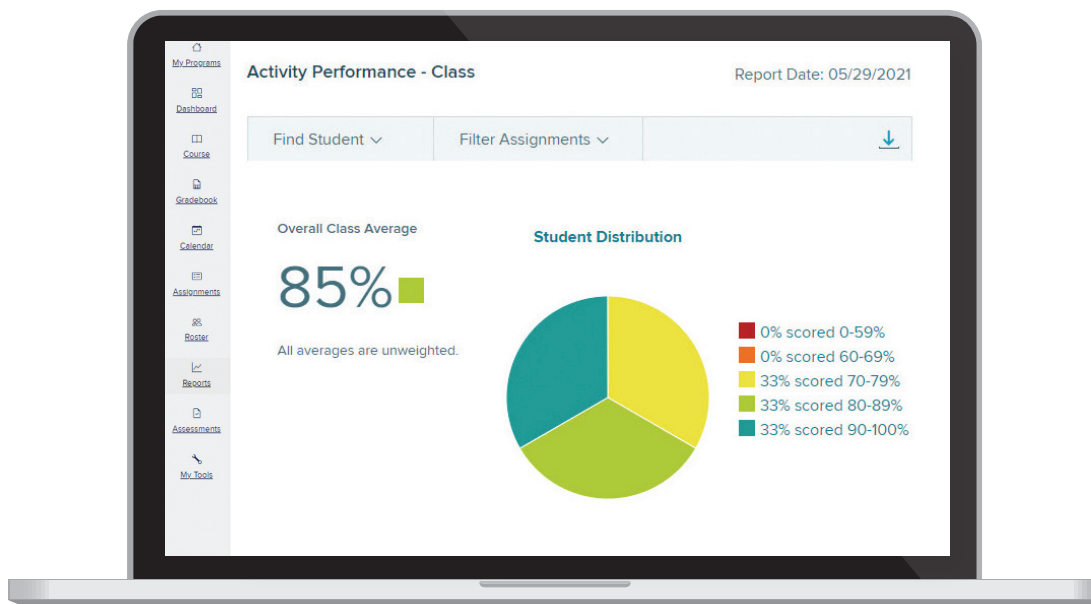
Cookies-n-Cream	7%	A
Neapolitan	3%	C
Strawberry	10%	B
Black Raspberry	5%	G
Cookie Dough	4%	F
Vanilla	38%	D
Chocolate	33%	E

Explain how to determine the measure of \widehat{CD} .
 200 words remaining

*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.

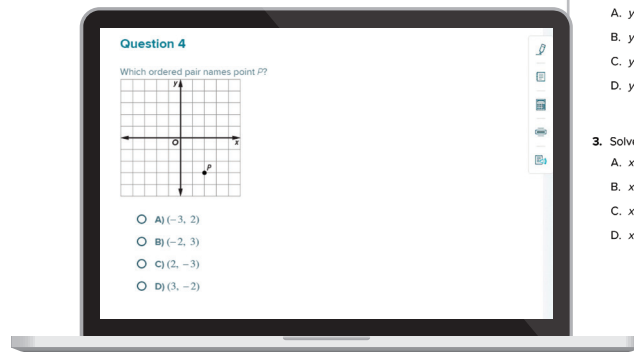
MAP Growth data can save teachers time by identifying students who may need additional support to access grade-level content. **Auto-Grouping** and **Recommended Targeted Skill Paths** provide support and review of critical prerequisite skills.

* For districts that use Map Growth Data

Targeted Remediation and Differentiation

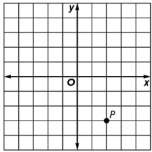
Identify Unfinished Learning

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



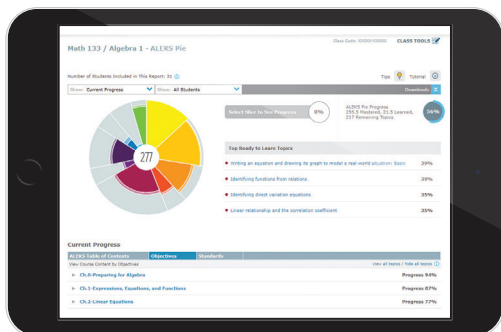
Name _____ Period _____ Date _____ Score _____

Module 4 – Diagnostic
Equations of Linear Functions

- Evaluate the expression when $a = 3$, $b = 1.5$, and $c = -4$.
 $a + 2(b - c) = \underline{\hspace{2cm}}$
- Evaluate $y = \frac{2}{3}(5) + \frac{1}{2}$.
A. $y = \frac{23}{6}$
B. $y = \frac{11}{3}$
C. $y = \frac{11}{6}$
D. $y = \frac{7}{6}$
- Solve $y = 3x - 7$ for x when $y = -2$.
A. $x = -3$
B. $x = -13$
C. $x = \frac{5}{3}$
D. $x = \frac{19}{3}$
- Which ordered pair names point P?

A. $(-3, 2)$
B. $(-2, 3)$
C. $(2, -3)$
D. $(3, -2)$
- 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. $y = \frac{2}{3}x + 2$
- Solve $x - 9 = 3 + y$ for y .

Targeted Remediation

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



Slope-Intercept Form of a Line
Nonperpendicular linear relationships can be written in the form $y = mx + b$. This is called the **slope-intercept form**.

$y = mx + b$ (slope m , y-intercept b)

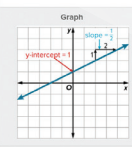
When an equation is written in this form, m is the slope and b is the y-intercept. The y-intercept of a line is the y-coordinate of the point where the line crosses the y-axis.
Select each card to see an example.

Equation

$y = \frac{1}{2}x + 1$

Flip Back

Graph



Flip Back

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*

Learn

Real-world situations can be represented by functions. Watch to find out how the shape of the graph tells you whether the function is linear or nonlinear.



Credit

Now you will determine whether a graph of a function is linear or nonlinear by analyzing the shape of the graph.

Extension Activities

Digitally assign to students who are ready for a challenge.

Latitude and Temperature

The *latitude* of a place on Earth is the measure of its distance north or south from the Equator. What do you think is the relationship between a city's latitude and its mean January temperature?

Latitudes are given in the format degrees:minutes. There are 60 minutes in one degree of latitude. To write a latitude in decimal form, divide the number of minutes by 60, and add this to the number of degrees of latitude. For example, $32^{\circ} 12' N = 32 + \frac{12}{60} N = 32.2^{\circ} N$.

The map shows various cities and their corresponding latitudes and mean January temperatures.

City	Latitude	Jan Mean Temp
Tucson, AZ	$32^{\circ} 12' N$	$51.3^{\circ} F$
Duluth, MN	$45^{\circ} 47' N$	$7.0^{\circ} F$
Chicago, IL	$41^{\circ} 50' N$	$21.0^{\circ} F$
Columbus, OH	$39^{\circ} 59' N$	$26.3^{\circ} F$
Albany, NY	$42^{\circ} 40' N$	$20.7^{\circ} F$
Las Vegas, NV	$36^{\circ} 19' N$	$45.1^{\circ} F$
Richmond, VA	$37^{\circ} 52' N$	$35.3^{\circ} F$
Fairbanks, AK	$64^{\circ} 50' N$	$-10.1^{\circ} F$
Charleston, SC	$32^{\circ} 57' N$	$47.3^{\circ} F$
Anchorage, AK	$61^{\circ} 27' N$	$14.9^{\circ} F$
Miami, FL	$25^{\circ} 47' N$	$67.3^{\circ} F$
Albuquerque, NM	$35^{\circ} 07' N$	$34.2^{\circ} F$
Honolulu, HI	$21^{\circ} 19' N$	$72.9^{\circ} F$
Galveston, TX	$29^{\circ} 14' N$	$52.9^{\circ} F$
Birmingham, AL	$33^{\circ} 32' N$	$41.7^{\circ} F$

Complete Exercises 1-3.

Quick Review Math Handbook


This resource provides additional instruction and practice for prerequisite skills.

2.4 Parallel Lines and Transversals

Relationships Between Lines and Planes

When two lines lie in the same plane and do not intersect, they are **parallel**. Lines that do not intersect and are not coplanar are **skew lines**.


In the figure, l is parallel to m , or $l \parallel m$. You can also write $\overleftrightarrow{PQ} \parallel \overleftrightarrow{RS}$.



Similarly, if two planes do not intersect, they are **parallel planes**.

EXAMPLE Identify Parallel and Skew Relationships

Refer to the figure below to identify each of the following.



- all planes parallel to plane ABD
plane EFH
- all segments parallel to \overleftrightarrow{CG}
 \overleftrightarrow{DH} , and \overleftrightarrow{AE}
- all segments skew to \overleftrightarrow{EH}
 \overleftrightarrow{BF} , \overleftrightarrow{CG} , \overleftrightarrow{DH} , and \overleftrightarrow{AB}

82 Hottopic 2

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.

Mrs. Dawson

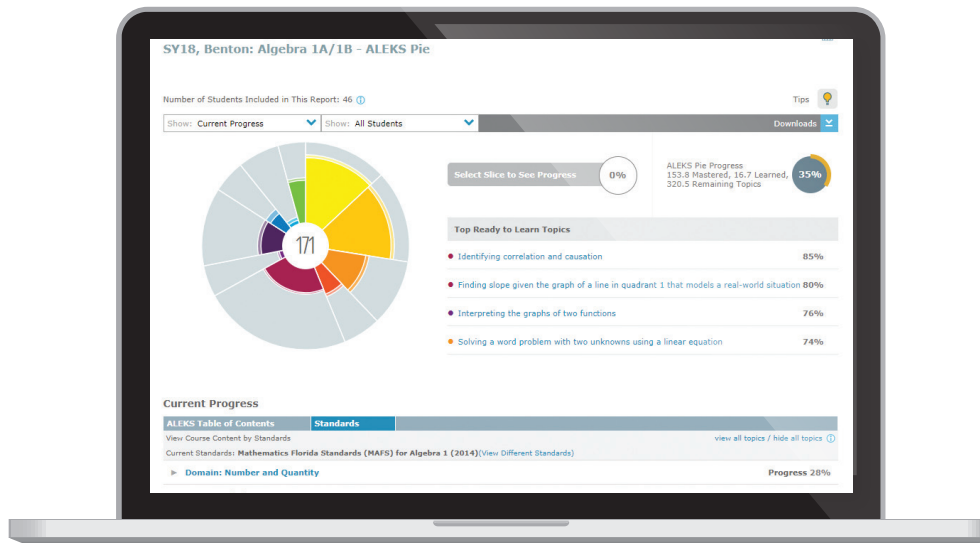
Determine whether each equation is a linear equation. Write yes or no. If yes, write the equation in standard form.

$2 + 5y = -x$ $y + 3 = x^2$

yes
standard form
 $Ax + By = C$
 $2 + 5y = -x$

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

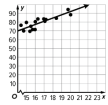
Target Common Misconceptions

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?

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

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

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

- Part One** assesses students' understanding of concepts.
- 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 understand when the x -value is equal to 0, not the y -intercept.
- Students may rely on what a graph "looks like" as the line of best fit, generate a 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...
<p>Student 1. yes</p> <p>Student 2. no</p> <p>Student 3. yes</p>	<ul style="list-style-type: none"> does not recognize that the y-intercept is not the x-intercept. does not realize that this scale is interpreted. does not recognize that both y-intercepts.
<p>Student 4. yes</p>	<ul style="list-style-type: none"> has generalized that the calculator estimated best-fit line is inaccurate.

T **Take Action**

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

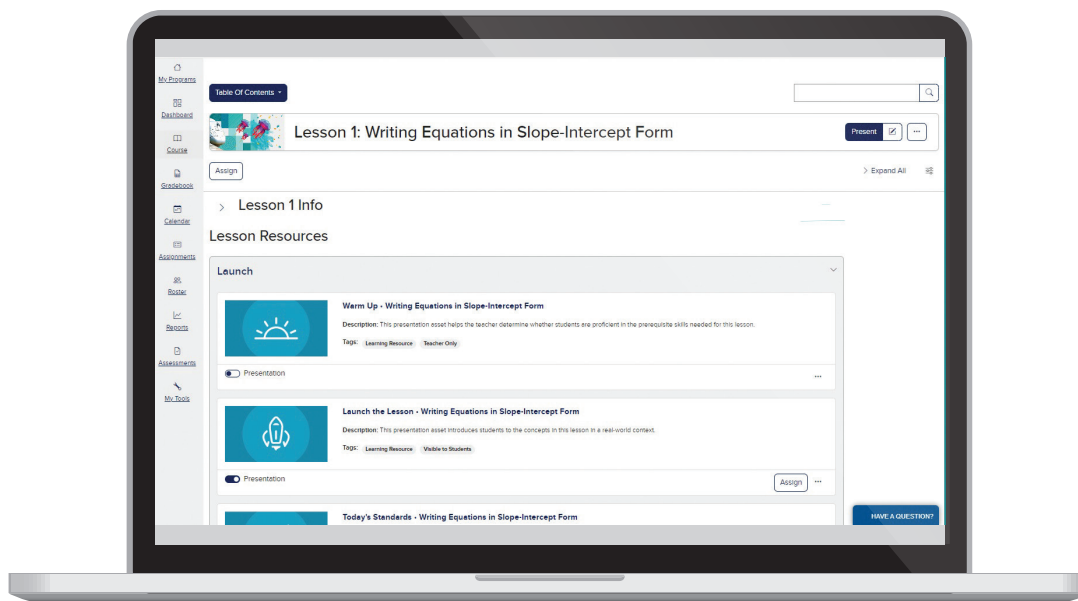
- ALEKS** Scatter Plots and Lines of Best Fit
- Lesson 5-3, Learn, Example 2

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

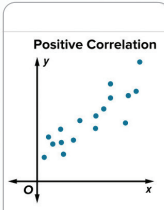
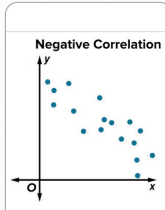
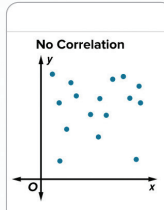
Interactive Lesson Presentation

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.

Scatter Plots

Bivariate data consists of pairs of values. A scatter plot is a graph of bivariate data that consists of ordered pairs on a coordinate plane. Using a scatter plot can help you see the trend, or general pattern, in the data. Trends can represent linear or nonlinear associations in the data. In this lesson, we will examine linear associations. Trends can be described as positive or negative correlations.

Tap on each card to learn about correlation.

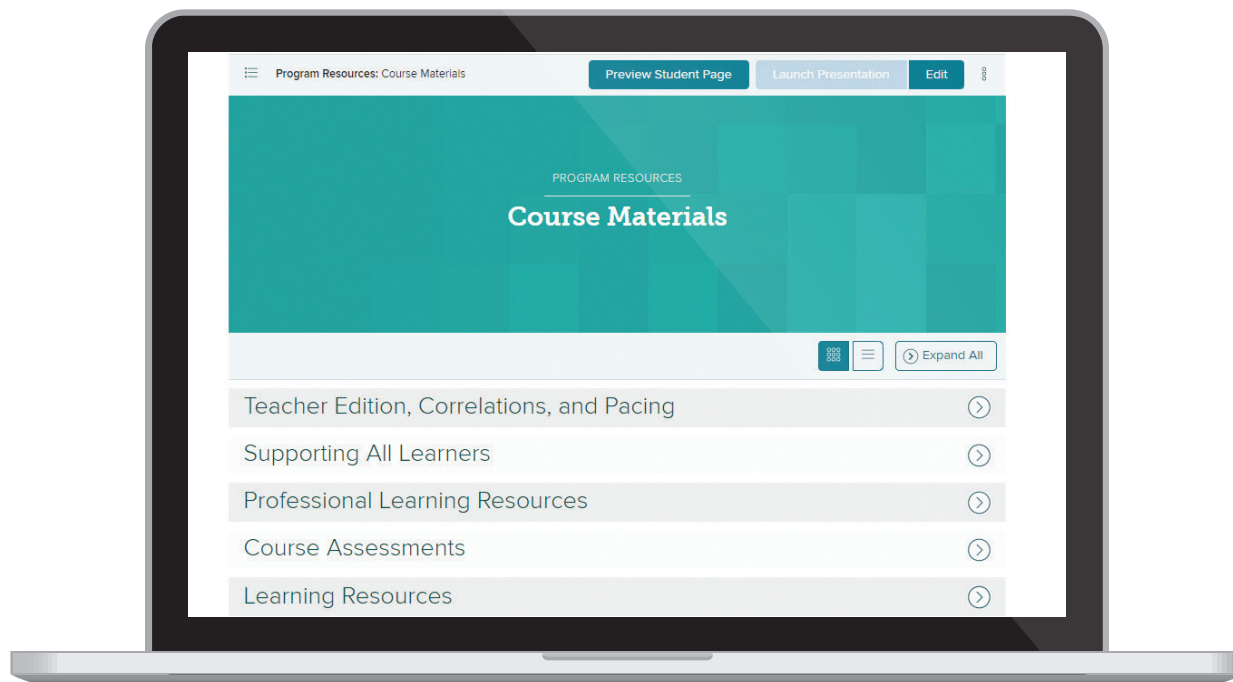
Positive Correlation	Negative Correlation	No Correlation
		
Flip Flashcard 1	Flip Flashcard 2	Flip Flashcard 3

Notice that in the graphics for positive and negative correlations, many of the points form **clusters** of points that slope upward or downward. Points outside of clusters are **outliers**.

[Study Tip](#)

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:

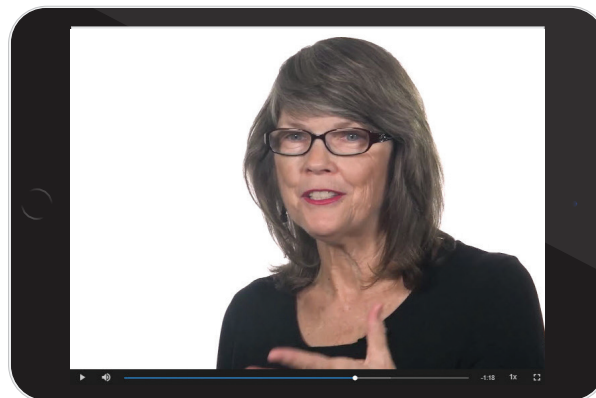
- Productive Struggle and Discourse
- Fostering a Positive Math Mindset

Dr. Raj Shah:

- Ignite! Activities

Cheryl Tobey:

- Math Probes



Oklahoma Reveal
MATH[®]

Reveal the Full Potential in Every Student
Learn more at mheonline.com/oklahoma

