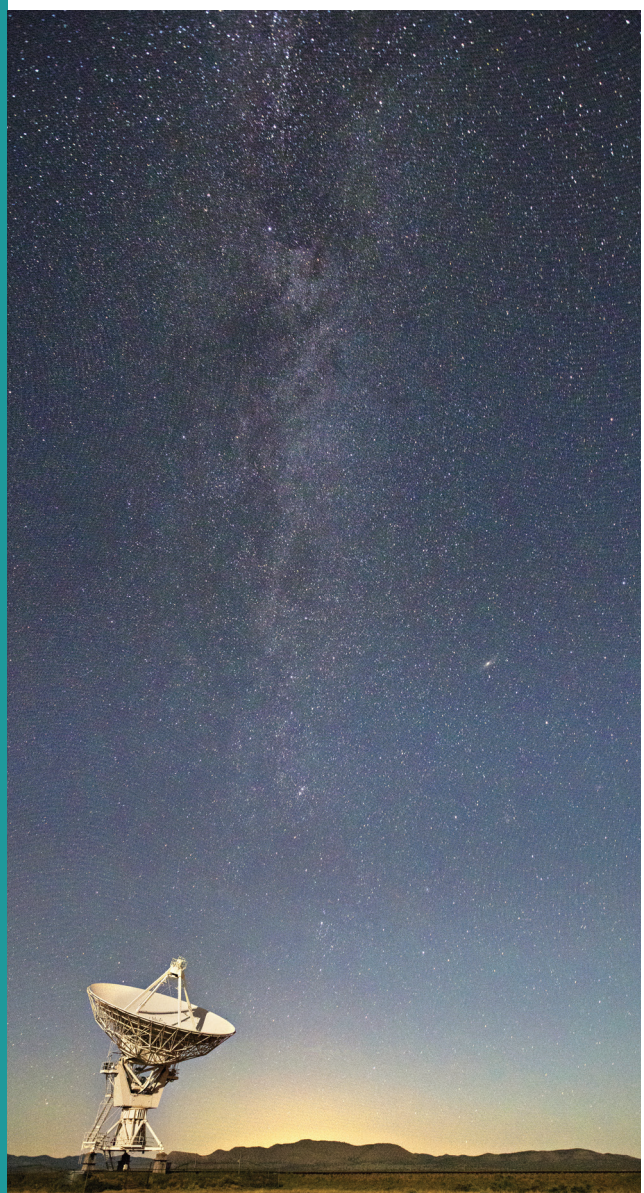
9–12
Sample

Reveal MATH®
Algebra 1 • Geometry • Algebra 2

New Mexico Connections



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CONNECT TO NEW MEXICO

Reveal Math contains print and digital resources to support teachers and all learners in alignment with the CCSS, New Mexico Math Framework, and New Mexico Instructional Scope.

Alignment to Mathematical Content and Practice Standards

Reveal Math is 100% aligned to the Common Core State Standards for Mathematics with a comprehensive array of assessment tools to measure student understanding and progress. Math Probes, Example Checks, Exit Tickets, and Put It All Together questions provide formative assessment checkpoints. The Teacher Edition and online Reporting Dashboard provide feedback to modify instruction and help direct student learning. Summative assessments at the module and course levels measure student learning with the standards.

Multi-Layered Systems of Support

The *Reveal Math* programs give all students access to rich tasks that promote productive struggle, develop proficiency with mathematical thinking, and prompts to promote mathematical discourse and build academic language. The Teacher Edition module and lesson opener pages map out resources to support vertical alignment and universal support frameworks. Additional Approaching Level and Beyond Level activities and extra examples differentiate math instruction for students who may need to see a concept in a different way, practice prerequisite skills, or are ready to extend their learning.

Culturally and Linguistically Responsive Instruction

Reveal Math also includes student and teacher resources to support students who are simultaneously learning grade-level math and building their English proficiency. Appropriate, research-based language scaffolds are also provided to support students as they engage in rigorous mathematical tasks and discussions. The program also supports the social, emotional, and academic needs of all students with Mindset Matters tips in each module providing specific examples of how Reveal Math content can be used to promote a growth mindset in all students.

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WHAT IS **NEW MEXICO CONNECTIONS?**

Your New Mexico Connections booklet provides a module-by-module content map to highlight the alignment of *Reveal Math* to the New Mexico Instructional Scope and Math Framework. You will find a summary of the content and key features of each module and lesson, along with references to additional resources to help teachers plan for multi-layered systems of support. Additional New Mexico-specific cross-curricular activities for each module are provided to support culturally and linguistically responsive instruction for all students.

Module Content Maps

The module Content Maps provide details about important features of each module:

- **Essential Question**
- **Pacing Guide**
- **Module Opener—Ignite Activity**
- **Launch the Module—Math in the Real World**
- **Lessons at a Glance**
- **Lesson Goals**
- **Standards for Mathematical Practice**
- **CCSS Standards Coverage**

Planning for Multi-Layered Systems of Support

The Planning for Multi-Layered Systems of Support section calls out additional resources available in the Teacher Edition designed to help teachers support all learners. These features include additional student activities and worksheets as well as professional development opportunities for teachers to explore different instructional strategies.

- **Pre-Teach:** Prepare student understandings and promote productive struggle.
- **Re-Teach:** Identify and prepare content to revisit for targeted and intensive interventions.
- **Extension:** Challenge and broaden students' mathematical knowledge.

Culturally and Linguistically Responsive Instruction

Each module includes new activities to support Culturally and Linguistically Responsive Instruction. These activities provide additional opportunities to spark students' curiosity and connection to mathematics with culturally and historically specific examples from New Mexico. Each activity aligns with the content in the corresponding module. These are powerful tools to promote conversations that validate, affirm, build, and bridge connections between mathematical concepts and diverse cultural identities.

Algebra 1

Scope and Sequence

Module	No. of 45-min Class Periods	No. of 90-min Class Periods
Module 1 Expressions	14 days	7 Days
Module 2 Equations in One Variable	14 days	7 Days
Module 3 Relations and Functions	14 days	7 Days
Module Pretest and Launch the Module Video	1	0.5
Lesson 3-1 Representing Relations	2	1
Lesson 3-2 Functions	1	0.5
Lesson 3-3 Interpreting Graphs: Linearity and Continuity	1	0.5
Lesson 3-4 Interpreting Graphs: Intercepts and Symmetry	2	1
Lesson 3-5 Interpreting Graphs: Extrema and End Behavior	2	1
Put It All Together Lessons 3-1 through 3-5	1	0.5
Lesson 3-6 Sketching and Using Graphs	2	1
Module Review	1	.05
Module Test	1	.05
Module 4 Linear and Nonlinear Functions	15 days	7.5 Days
Module 5 Creating Linear Equations	13 days	6.5 Days
Module 6 Linear Inequalities	11 days	5.5 Days
Module 7 Systems of Linear Equations and Inequalities	11days	5.5 Days
Module 8 Exponents and Roots	15 days	7.5 Days
Module 9 Exponential Functions	14 days	7 Days
Module 10 Polynomials	15 days	7.5 Days
Module 11 Quadratic Functions	17 days	8.5 Days
Module 12 Statistics	9 days	4.5 Days
End-of-Course Assessment	1 days	0.5 Days

Sample for Algebra 1

Module 3 Relations and Functions

Module Essential Question

Why are representations of relations and functions useful?

PACING: 14 days

LESSON		LESSON GOAL	STANDARDS FOR MATHEMATICAL PRACTICE	STANDARDS
Module Opener IGNITE! On Trend		Explore graphically the trends of interests in different sports of people 12–17 years old.		
Launch the Module Math in the Real World		Students learn about using relations and functions in computer networks and weather.		
3-1	Representing Relations	Students represent relations with graphs, ordered pairs, tables, and mappings.	Students make sense of problems and persevere in solving them.	**N.Q.1, F.IF.1**
3-2	Functions	Students determine whether a relation is a function and find function values.	Students construct viable arguments and critique the reasoning of others.	**F.IF.1, F.IF.2**
3-3	Linearity and Continuity of Graphs	Students identify linear and nonlinear functions and continuous and discrete functions.	Students will reason abstractly and quantitatively.	**F.IF.4, F.IF.5**
3-4	Intercepts of Graphs	Students identify intercepts of functions and solve equations by graphing.	Students use appropriate tools strategically.	**A.REI.10, F.IF.4**
3-5	Shapes of Graphs	Students identify symmetry, extrema, and end behavior of functions.	Students model with mathematics.	**F.IF.4**
3-6	Sketching Graphs and Comparing Functions	Students sketch graphs of functions and compare two ore more functions.	Students attend to precision.	**F.IF.4, F.IF.9**

Planning for Multi-Layered Systems of Support

The Teacher Edition provides additional unit and lesson resources and instructional strategies to support all learners.

Pre-Teach

These tools help teachers prepare student understandings and promote productive struggle.

- **Formative Assessment Math Probe** p. 133b
- **Module Opener Activities** pp. 133–134
- **Mindset Matters** p. 134
- **Warm Up Activities** pp. 135b, 147b, 157b, 167b, 179b, 191b

Re-Teach

These tools help teachers identify and prepare content to revisit for targeted and intensive interventions.

- **Exit Ticket** pp. 142, 152, 162, 174, 186, 198
- **Language Development Handbook** pp. 135a, 147a, 157a, 167a, 179a, 191a
- **Reflect and Practice** pp. 143–146, 153–156, 163–166, 175–178, 187–190, 199–202
- **Module Review** pp. 203–206
- **Go online for additional Practice, Review, and Take Another Look Exercises for each lesson**

Extension

These tools provide teachers with additional activities to challenge and broaden students' mathematical knowledge.

- **Enrichment Activities** pp. 138, 157, 169, 180, 194
- **Go online for additional Extension and Take Another Look Exercises for each lesson**

Teacher Notes

Culturally and Linguistically Responsive Instruction

Reveal Math provides flexibility in instructional and implementation options to meet the range of instructional settings and support the social, emotional, and academic needs of all learners. The following activities provide additional opportunities to spark students' curiosity and connection to mathematics with culturally and historically specific examples from New Mexico.

STEM Connection

Water Towers in New Mexico

Guide students in exploring how water towers function in New Mexico. Present them with a scenario involving the water level in a tank over time. Have them create a table of values and graph the relationship between time and water level. Instruct students to determine whether this relationship represents a function and to express their findings using function notation.

Arts Connection

Graphing Patterns in New Mexican Textiles

Ask students to examine traditional textiles use throughout New Mexico to identify patterns. Help them choose attributes of the patterns and create functions that describe the relationships between two of them, such as the numbers of colors and shapes. Have them graph these relationships to visualize how functions can represent artistic designs. Invite students to describe the graphs and what they show. Encourage them to use their native languages to describe features of the graphs.

Science Connection

Radioactivity in New Mexico

Point out that New Mexico has many naturally-occurring radioactive deposits. Invite students to research sources of radioactivity in their state. Then discuss how radioactive elements change into other elements over time and that the half-life of such an element is the time it takes for one-half of an amount to change, or decay. Provide students with different starting amounts of a substance, such as 100 grams, along with the half-life of an element. Have them determine how much is left after a certain amount of time. Encourage small groups to work together to graph the amount remaining at different times and describe their graphs.

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Geometry

Scope and Sequence

Module	No. of 45-min Class Periods	No. of 90-min Class Periods
Module 1 Tools of Geometry	10 days	5 Days
Module 2 Angles and Geometric Figures	16 days	8 Days
Module 3 Logical Arguments and Line Relationships	19 days	9.5 Days
Module Pretest and Launch the Module Video	1	0.5
Lesson 3-1 Conjectures and Counterexample	1	0.5
Lesson 3-2 Statements, Conditionals, and Biconditionals	1	0.5
Lesson 3-3 Deductive Reasoning	1	0.5
Put It All Together Lessons 3-1 through 3-3	1	0.5
Lesson 3-4 Writing Proofs	3	1.5
Lesson 3-5 Proving Segment Relationships	1	0.5
Lesson 3-6 Proving Angle Relationships	2	1
Lesson 3-7 Parallel Lines and Transversals	1	0.5
Lesson 3-8 Slope and Equations of Lines	2	1
Lesson 3-9 Proving Lines Parallel	1	0.5
Lesson 3-10 Perpendiculars and Distance	2	1
Module Review	1	0.5
Module Test	1	0.5
Module 4 Transformations and Symmetry	11 days	8 Days
Module 5 Triangles and Congruence	12 days	10.5 Days
Module 6 Relationships in Triangles	11 days	10.25 Days
Module 7 Quadrilaterals	10 days	8.25 Days
Module 8 Similarity	12 days	5.25 Days
Module 9 Right Triangles and Trigonometry	13 days	7.75 Days
Module 10 Circles	12 days	6.75 Days
Module 11 Measurement	19 days	7.5 Days
Module 12 Probability	14 days	7.5 Days
End-of-Course Assessment	1 days	1.5 Days

Sample for Geometry

Module 3 Logical Arguments and Line Relationship

Module Essential Question

What makes a logical argument, and how are logical arguments used in geometry?

PACING: 19 days

LESSON		LESSON GOAL	STANDARDS FOR MATHEMATICAL PRACTICE	STANDARDS
Module Opener	IGNITE! What's the Gift?	Explore logical arguments to determine which box contains the gift.		
Launch the Module	Math in the Real World	Students will learn how proving geometric theorems follows a similar pattern of thinking to making a conjecture, gathering evidence, and then making a conclusion.		
3-1	Conjectures and Counterexamples	Students analyze conjectures by using inductive reasoning and disprove conjectures by using counterexamples.	Students will construct viable arguments and critique the reasoning of others.	
3-2	Statements, Conditionals, and Biconditionals	Students write and analyze compound statements by using logic.	Students will reason abstractly and quantitatively.	
3-3	Deductive Reasoning	Students apply the Laws of Detachment and Syllogism.	Students will look for and make use of structure.	
3-4	Writing Proofs	Students analyze and construct viable arguments.	Students will make sense of problems and persevere in solving them.	
3-5	Proving Segment Relationship	Students prove theorems about line segments.	Students will construct viable arguments and critique the reasoning of others.	**G.CO.9, G.CO.12**
3-6	Proving Angle Relationship	Students prove theorems about angles.	Students will model with mathematics.	**G.CO.9**
3-7	Parallel Lines and Transversals	Students identify and use relationships between parallel lines and transversals.	Students will attend to precision.	**G.CO.1, G.CO.9**
3-8	Slope and Equations of Lines	Students classify lines as parallel, perpendicular, or neither by using the slope criteria.	Students will look for and express regularity in repeated reasoning.	**G.GPE.5**
3-9	Proving Lines Parallel	Students identify and use parallel lines by using angle relationships.	Students will construct viable arguments and critique the reasoning of others.	**G.CO.9, G.CO.12**
3-10	Perpendiculars and Distance	Students use perpendicular lines to find distance.	Students will make sense of problems and persevere in solving them.	**G.CO.12, G.MG.3**

Planning for Multi-Layered Systems of Support

The Teacher Edition provides additional module and lesson resources and instructional strategies to support all learners.

Pre-Teach

These tools help teachers prepare student understandings and promote productive struggle.

- **Formative Assessment Math Probe** p. 151b
- **Module Opener Activities** pp. 151–152
- **Mindset Matters** p. 152
- **Warm Up Activities** pp. 153b, 161b, 171b, 179b, 189b, 197b, 207b, 215b, 225b, 233b

Re-Teach

These tools help teachers identify and prepare content to revisit for targeted and intensive interventions.

- **Exit Ticket** pp. 156, 166, 174, 184, 192, 202, 210, 220, 228, 238
- **Language Development Handbook** pp. 153a, 161a, 171a, 179a, 189a, 197a, 207a, 215a, 225a, 233a
- **Reflect and Practice** pp. 157–160, 167–170, 175–178, 185–188, 193–196, 203–206, 211–214, 221–224, 229–232, 239–242
- **Module Review** pp. 243–246
- **Go online for additional Practice, Review, and Take Another Look Exercises for each lesson**

Extension

These tools provide teachers with additional activities to challenge and broaden students' mathematical knowledge.

- **Enrichment Activities** p. 173
- **Go online for additional Extension and Take Another Look Exercises for each lesson**

Teacher Notes

Culturally and Linguistically Responsive Instruction

Reveal Math provides flexibility in instructional and implementation options to meet the range of instructional settings and support the social, emotional, and academic needs of all learners. The following activities provide additional opportunities to spark students' curiosity and connection to mathematics with culturally and historically specific examples from New Mexico.

Historical Connection

Proving the Pueblo Kiva Angles

Introduce students to the circular Pueblo kiva, a key architectural structure in New Mexico's history. Provide them with a floor plan diagram of a kiva and have them use theorems about lines and angles to prove that the interior angles of the inscribed polygon sum correctly. This activity connects the historical significance of the kiva with the development of geometric proof skills, encouraging students to explore how geometry is used in both historical and modern structures in their community.

Arts Connection

Exploring Symmetry in Navajo Blanket Patterns

Introduce students to the symmetrical designs in Navajo blankets, which feature parallel and perpendicular lines. Provide them with a compass and straightedge to construct a line parallel to one in the blanket pattern. Have them explain how the line's relationship is maintained in the design and how symmetry influences Navajo art. This task allows students to apply geometric principles in an artistic context that is culturally significant to New Mexico.

Social Studies Connection

The Santa Fe Trail: Constructing Perpendicular Lines

Introduce students to the Santa Fe Trail, a historic route in New Mexico. Using a map, have them choose two points on the trail and construct a perpendicular line using a compass and straightedge. They will explain the role of perpendicular lines in navigation, discussing how geometric constructions aid in understanding distances and directions, both historically and in contemporary contexts.

Chon Kit Leong/Alamy Stock Photo

Algebra 2

Scope and Sequence

Module	No. of 45-min Class Periods	No. of 90-min Class Periods
Module 1 Relations and Functions	16 days	8 Days
Module 2 Linear Equations, Inequalities, and Systems	17 days	8.5 Days
Module 3 Quadratic Functions	18 days	9 Days
Module 4 Polynomials and Polynomial Functions	11 days	5.5 Days
Module Pretest and Launch the Module Video	1	0.5
Lesson 4-1 Polynomial Functions	3	1.5
Lesson 4-2 Analyzing Graphs of Polynomial Functions	1	0.5
Lesson 4-3 Operations with Polynomials	2	1
Lesson 4-4 Dividing Polynomials	1	0.5
Lesson 4-5 Powers of Binomials	1	0.5
Module Review	1	0.5
Module Test	1	0.5
Module 5 Polynomial Equations	10 days	5 Days
Module 6 Inverses and Radical Functions	15 days	7.5 Days
Module 7 Exponential Functions	12 days	6 Days
Module 8 Logarithmic Functions	12 days	6 Days
Module 9 Rational Functions	11 days	5.5 Days
Module 10 Inferential Statistics	11 days	5.5 Days
Module 11 Trigonometric Functions	13 days	6.5 Days
Module 12 Trigonometric Identities and Equations	10 days	5 Days
End-of-Course Assessment	1 days	0.5 Days

Sample for Algebra 2

Module 4 Linear Relationship and Slope

Module Essential Question

How does an understanding of polynomials and polynomial functions help us understand and interpret real-world events?

PACING: 11 days

LESSON		LESSON GOAL	STANDARDS FOR MATHEMATICAL PRACTICE	STANDARDS
Module Opener IGNITE! Bridging the Gap Explore how quadratic equations and parabolas by modeling an arch bridge.				
Launch the Module Math in the Real World Students learn how polynomials and polynomial functions can be applied in real-world contexts including wind turbines, hybrid cars, and solar panels.				
4-1	Polynomial Functions	Students analyze polynomial functions by examining key features and graphing.	Students will attend to precision.	**F.IF.4, F.IF.7c**
4-2	Analyzing Graphs of Polynomial Functions	Students analyze the graphs of polynomial functions by identifying key features.	Students will use appropriate tools strategically.	**F.IF.4, F.IF.7c**
4-3	Operations with Polynomials	Students add, subtract, and multiply polynomials.	Students will look for and express regularity in repeated reasoning.	**A.APR.1**
4-4	Dividing Polynomials	Students divide polynomials by using long division and synthetic division.	Students will construct viable arguments and critique the reasoning of others.	A.APR.6
4-5	Powers of Binomials	Students expand powers of binomials.	Students will model with mathematics.	A.APR.5

Planning for Multi-Layered Systems of Support

The Teacher Edition provides additional unit and lesson resources and instructional strategies to support all learners.

Pre-Teach

These tools help teachers prepare student understandings and promote productive struggle.

- **Formative Assessment Math Probe** p.211b
- **Module Opener Activities** pp. 211–212
- **Mindset Matters** p. 212
- **Warm Up Activities** pp. 213b, 223b, 233b, 241b, 249b

Re-Teach

These tools help teachers identify and prepare content to revisit for targeted and intensive interventions.

- **Exit Ticket** pp. 218, 228, 237–238, 244, 250
- **Language Development Handbook** pp. 213a, 223a, 233a, 241a, 249a
- **Reflect and Practice** pp. 219–222, 229–232, 237–240, 245–248, 251–252
- **Module Review** pp. 253–256
- **Go online for additional Practice, Review, and Take Another Look Exercises for each lesson**

Extension

These tools provide teachers with additional activities to challenge and broaden students' mathematical knowledge.

- **Enrichment Activities** p. 228
- **Go online for additional Extension and Take Another Look Exercises for each lesson**

Teacher Notes

Culturally and Linguistically Responsive Instruction

Reveal Math provides flexibility in instructional and implementation options to meet the range of instructional settings and support the social, emotional, and academic needs of all learners. The following activities provide additional opportunities to spark students' curiosity and connection to mathematics with culturally and historically specific examples from New Mexico.

Arts Connection

Symmetry in Navajo Rugs

Display images of Navajo rugs and have students discuss what they notice about the designs. Address the symmetry of the rugs. Connect the discussion of symmetry with polynomial functions.

Historical Connection

Mathematics in History

Discuss with students the history of algebra and how it relates to math today. Jack Dongarra is a mathematician who graduated from the University of New Mexico and won a Turing Award for his work with mathematics and computers. Have students research his work, including how exponents and polynomial functions were involved. Ask them to share their findings and discuss how it related to polynomials.

Science Connection

The Missing Snake

Explain to students that the narrow-headed garter snake is an endangered species in New Mexico. Remind students what the term *endangered* means regarding animals. Then tell them that the snake population can be modeled by the equation $y = 1250(1 - 0.05)^2$. Have students graph the equation and identify the key features of the graph.

Business Connection

Which Store is Cheaper?

Ask half of the students to create an equation for the cost of two items at a common New Mexico grocery store, and have the other half find the cost of the same items at a different store. Have students work in pairs to determine the difference between the two equations. Then ask the pairs to analyze the equations and explain what they tell about the cost of the items, and which store has the cheaper prices.

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