Secondary Mathematics

EDITION 1

Content Organization

Acknowledgment

Thank you to all the Texas educators and stakeholders who supported the review process and provided feedback. These materials are the result of the work of numerous individuals, and we are deeply grateful for their contributions.

Notice

These learning resources have been built for Texas students, aligned to the Texas Essential Knowledge and Skills, and are made available pursuant to Chapter 31, Subchapter B-1 of the Texas Education Code.

If you have further product questions or to report an error, please email openeducationresources@tea.texas.gov.

CONTENT ORGANIZATION

The program is thoroughly and thoughtfully designed to ensure students build the foundation they'll need to experience ongoing growth in mathematics.

The arc of the mathematics develops coherently, building understanding by linking concepts together through a logically sequenced and connected scope and sequence, so students can learn mathematics more deeply and apply what they have learned to more complex problems in the future.

Seeing Connections: Connections are shown visually within and between courses in the instructional materials with icons. Topics with the same icon link concepts within and across grades. On the last page, a key is provided to show the concept that each icon represents.

GRADE 6

MODULE 1 Composing and Decomposing	MODULE 2 Relating Quantities	MODULE 3 Moving Beyond Positive Quantities	MODULE 4 Determining Unknown Quantities	MODULE 5 Describing Variability of Quantities
TOPIC 1 Factors and Multiples ■	TOPIC 1 Ratios ⬣	TOPIC 1 Signed Numbers and the Four Quadrants ■	TOPIC 1 Expressions ●	TOPIC 1 The Statistical Process ▲
TOPIC 2 Shapes and Solids ◊	TOPIC 2 Percents ⬣	TOPIC 2 Operating with Integers ■	TOPIC 2 Equations and Inequalities ●	TOPIC 2 Numerical Summaries of Data ▲
TOPIC 3 Decimals ■	TOPIC 3 Unit Rates and Conversions ⬣		TOPIC 3 Graphing Quantitative Relationships ⬣	
			TOPIC 4 Financial Literacy: Accounts, Credit, and Careers ★	

GRADE 7

MODULE 1 Thinking Proportionally	MODULE 2 Applying Proportionality	MODULE 3 Reasoning Algebraically	MODULE 4 Analyzing Populations and Probabilities	MODULE 5 Constructing and Measuring
TOPIC 1 Circles and Ratios ⬣	TOPIC 1 Proportional Relationships ⬣	TOPIC 1 Operating with Rational Numbers ■	TOPIC 1 Introduction to Probability ▲	TOPIC 1 Angle Relationships ◊
TOPIC 2 Fractional Rates ⬣	TOPIC 2 Financial Literacy: Interest and Budgets ★	TOPIC 2 Two-Step Equations and Inequalities ●	TOPIC 2 Compound Probability ▲	TOPIC 2 Area, Surface Area, and Volume ◊
TOPIC 3 Proportionality ⬣		TOPIC 3 Multiple Representations of Equations ●	TOPIC 3 Drawing Inferences ▲	

GRADE 8

MODULE 1 Transforming Geometric Objects	MODULE 2 Developing Function Foundations	MODULE 3 Data Data Everywhere	MODULE 4 Modeling Linear Equations	MODULE 5 Applying Powers
TOPIC 1 Rigid Motion Transformations ◊	TOPIC 1 From Proportions to Linear Relationships ⬣	TOPIC 1 Patterns in Bivariate Data ▲	TOPIC 1 Solving Linear Equations ●	TOPIC 1 Real Numbers ■
TOPIC 2 Similarity ◊	TOPIC 2 Linear Relationships ⬣	TOPIC 2 Variability and Sampling ▲	TOPIC 2 Systems of Linear Equations ●	TOPIC 2 The Pythagorean Theorem ◊
TOPIC 3 Line and Angle Relationships ◊				TOPIC 3 Financial Literacy: Your Financial Future ★
				TOPIC 4 Volume of Curved Figures ◊

ALGEBRA I

MODULE 1 Searching for Patterns	MODULE 2 Exploring Constant Change	MODULE 3 Linear Equations and Inequalities	MODULE 4 Investigating Growth and Decay	MODULE 5 Maximizing and Minimizing
TOPIC 1 Quantities and Relationships ⬣	TOPIC 1 Linear Functions ⬣ ▲	TOPIC 1 Linear Equations and Inequalities ●	TOPIC 1 Introduction to Exponential Functions ⬣	TOPIC 1 Introduction to Quadratic Functions ⬣
TOPIC 2 Sequences ■	TOPIC 2 Transformations and Comparisons of Linear Functions ⬣	TOPIC 2 Systems of Linear Equations and Inequalities ●	TOPIC 2 Using Exponential Equations ● ▲ ★	TOPIC 2 Polynomial Operations ■
				TOPIC 3 Solving Quadratic Equations ● ▲

Concept	Description
■ Relationships between sets of numbers and fluency with the mathematical operations of addition, subtraction, multiplication, and division	• Grade 6, Module 1: Students work with operations involving positive rational numbers. • Grade 6, Module 3: Students operate with integers. • Grade 7, Module 3: Students operate with positive and negative rational numbers. • Grade 8, Module 5: Students expand to the real number system. • Algebra I, Module 5: Students operate with polynomials.
⬣ Proportionality and Proportional Reasoning	• Grade 6, Module 2: Students build understanding of ratio and rates. • Grade 7, Modules 1 and 2: Students build to proportional relationships. • Grade 8, Module 2: Students move to linear relationships. • Algebra I, Module 2: Students move from linear relationships to linear functions. • Algebra I, Modules 4 and 5: Students expand understanding of non-proportional relationships by investigating exponential and quadratic functions.
● Equations, Expressions, and Relationships	• Grade 6, Module 4: Students work with expressions and one-step equations and inequalities. • Grade 7, Module 3: Students work with two-step equations and inequalities. • Grade 8, Module 4: Students model and solve one-variable equations with variables on both sides. • Algebra I, Module 3: Students solve linear equations with variables on both sides using the distributive property when necessary. • Algebra I, Module 5: Students expand to solving quadratic equations.
▲ Data Analysis and Probability	• Grade 6, Module 5: Students begin work with the statistical process and numerical summaries. • Grade 7, Module 4: Students develop an understanding of probability and draw inferences about populations from samples. • Grade 8, Module 3: Students begin work with bivariate data and trend lines. • Algebra I, Module 2, Topic 1: Students study the linear regression function. • Algebra I, Modules 4 and 5: Students expand to the exponential regression function and the quadratic regression function.
★ Financial Literacy	• Grade 6, Module 4, Topic 4: Students learn about credit cards and debit cards. • Grade 7, Module 2, Topic 2: Students learn about simple and compound interest, net worth, and budgets. • Grade 8, Module 5, Topic 3: Students build on their understanding of simple and compound interest. They investigate loans and discuss interest on credit cards. • Algebra I, Module 4, Topic 2: Students compare linear and exponential functions in the context of simple interest and compound interest situations.
◊ Geometric Relationships	• Grade 6, Module 1, Topic 2: Students learn about the sum of the interior angles of a triangle, compose and decompose figures to determine the areas of triangles, parallelograms, and trapezoids, and determine volumes of right rectangular prisms. • Grade 7, Module 5: Students learn how to determine lateral and total surface area using nets, distinguish between surface area and volume, and investigate special angle relationships. • Grade 8, Module 1: Students further explore the Triangle Sum theorem learned in Grade 6 and the special angle relationships learned in Grade 7 to develop the Exterior Angle theorem. Also, students extend their knowledge of special angle relationships to angle relationships in parallel lines. Finally, students investigate transformations of figures and develop an understanding of congruent and similar figures. • Algebra I, Modules 1–5: Students extend their knowledge of transformations by transforming and comparing functions.

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