

8th Grade Math

Curriculum Guide

To support strong classroom instruction, the TDOE has created instructional focus documents for mathematics. These documents were developed to target the mathematics standards where statewide data indicated students struggled the most and are optional supplements for educators to consider. The purpose of these documents is to provide teachers with examples of learning across all performance levels to help educators determine the depth of a student's conceptual understanding of the Tennessee mathematics standards. You may access these documents using the **Best for All Central** website:

<https://bestforall.tnedu.gov/lessons-and-learning-item?content-id=7321>

1 st Quarter-44 school days				
Standard(s)	Learning Objective(s)	Savvas Alignment	Assessments	Pacing
8.NS.A.1	Write repeating decimals as fractions	Lesson 1-1: Rational Numbers as Decimals		2
8.NS.A.1	Identify an irrational number	Lesson 1-2: Understand Irrational Numbers		2
8.NS.A.2	Compare and order rational and irrational numbers	Lesson 1-3: Compare and Order Real Numbers		2
8.EE.A.2	Find square roots and cube roots of rational numbers	Lesson 1-4: Evaluate Square Roots and Cube Roots		2
8.EE.A.2	Solve equations and problems, in real world contexts, involving square roots and cube roots.	Lesson 1-5: Solve Equations Using Square Roots and Cube Roots		2
		Page 39	Mid-Topic Checkpoint and Performance Task	2
8.EE.A.1	-Understand the properties of exponents -Generate equivalent expressions with exponents	Lesson 1-6: Use Properties of Integer Exponents (Positive)		3
8.EE.A.1	-Simplify expressions with negative and zero exponents -Evaluate expressions with negative and zero exponents	Lesson 1-7: More Properties of Integer Exponents (Negative)		3
			Lesson 1-6 & 1-7 Quizzes	1

8.EE.A.3	Estimate very large and very small quantities by rounding and then writing that number as a single digit times a power of 10	Lesson 1-8: Use Powers of 10 to Estimate Quantities		2
8.EE.A.4	-Use scientific notation to write very large or very small quantities -Convert numbers written in scientific notation to standard form	Lesson 1-9: Understand Scientific Notation		3
8.EE.A.4	Apply number properties to calculations with numbers in scientific notation	Lesson 1-10: Operations with Numbers in Scientific Notation		3
		Page 81	Topic Assessment and Performance Task	2
8.EE.C.7.b	-Combine like terms -Solve equations with like terms on one side of the equation -Make sense on scenarios and represent them with equations	Lesson 2-1: Combine Like Terms to Solve Equations		3
8.EE.C.7.b	-Solve equations with like terms on both sides of the equation -Make sense of scenarios and represent them with equations	Lesson 2-2: Solve Equations with Variables on Both Sides		3
8.EE.C.7.b	Plan multiple solution pathways and choose one to find the solution	Lesson 2-3: Solve Multistep Equations		3
8.EE.C.7.a	Determine the number of solutions to an equation.	Lesson 2-4: Equations with No Solutions or Infinitely Many Solutions		3
		Page 115	Mid-Topic Checkpoint and Performance Task	3

2nd Quarter-42 school days

Standard(s)	Learning Objective(s)	Savvas Alignment	Assessments	Pacing
8.EE.B.5	Analyze equations, linear graphs, and tables to find unit rates and compare proportional relationships	Lesson 2-5: Compare Proportional Relationships		2
8.EE.B.6	-Find the slope of a line using different strategies -Interpret a slope in context and relate it to steepness on a graph	Lesson 2-6: Connect Proportional Relationships and Slope		2
8.EE.B.6	-Understand how the constant of proportionality and the slope relate in a linear equation. -Write and graph a linear equation in the form $y = mx$.	Lesson 2-7: Analyze Linear Equations $y = mx$		2

8.EE.B.6	-Interpret and extend the table or graph of a linear relationship to find its y-intercept -Analyze graphs in context to determine and explain the meaning of the y-intercept	Lesson 2-8: Understand the y-Intercept of a Line		2
8.EE.B.6	-Graph a line from an equation in the form $y = mx + b$ -Write an equation that represents the given graph of a line	Lesson 2-9: Analyze Linear Equations $y = mx + b$		3
8.EE.C.9	-Graph the solution set of a linear inequality in two variables -Analyze a given graph to determine the solution set of a linear inequality	Lesson TN-1* (Student Companion): Graph the Solution Set of an Inequality on the Coordinate Plane		3
		Page 157 *TN standards assessed online and the very back of Volume 2	Topic Assessment and Performance Task	2
8.F.A.1	-Identify whether a relation is a function -Interpret a function	Lesson 3-1: Understand Relations and Functions		2
8.F.A.1	-Identify functions in different representations: equations, tables, and graphs	Lesson 3-2: Connect Representations of Functions		3
8.F.A.2 8.F.A.3	-Compare properties of linear functions in different representations -Compare properties of linear and nonlinear functions in different representations	Lesson 3-3: Compare Linear and Nonlinear Functions		3
		Page 183	Mid-Topic Checkpoint and Performance Task	1
8.F.B.4	-Construct a linear function to model a relationship using an equation in the form $y = mx + b$	Lesson 3-4: Construct Functions to Model Linear Relationships		3
8.F.B.5	-Describe qualitatively the behavior of a function by analyzing its graph -Describe the graph of a function at each interval	Lesson 3-5: Intervals of Increase and Decrease		2
8.F.B.5	-Draw a qualitative graph of a function based on a verbal description -Analyze and interpret the sketch of a graph of a function	Lesson 3-6: Sketch Functions from Verbal Descriptions		3
		Page 211	Topic Assessment and Performance Task	2
8.SP.A.1	-Construct a scatter plot graph to model paired data -Utilize a scatterplot to identify and interpret the relationship between paired data	Lesson 4-1: Construct and Interpret Scatterplots		2
8.SP.A.2 8.F.A.3	-Recognize whether the paired data has a linear association, a nonlinear association, or no association	Lesson 4-2: Analyze Linear Associations		2

8.F.B.4	-Draw a trend line to determine whether a linear association is positive or negative and weak or strong			
8.SP.A.3 8.F.A.3 8.F.B.4	-Use the slope and y-intercept of a trend line to make a prediction -Make prediction when no equation is given by drawing trend lines and writing the equation of a linear model	Lesson 4-3: Use Linear Models to Make Predictions		2
		Page 237	Mid-Topic Checkpoint and Performance Task	1

3rd Quarter-45 school days

Standard(s)	Learning Objective(s)	Savvas Alignment	Assessments	Pacing
8.SP.B.4	Use a tree diagram, a table, or an organized list to represent the sample space for a compound event	Lesson TN-2* (Student Companion): Determine outcomes of compound events		2
8.SP.B.4.a	-Organize information about a compound event on a table, a tree diagram, or an organized list -Find the probability of a compound event	Lesson TN-3* (Student Companion): Find probabilities of compound events		2
8.SP.B.4.b	-Use different tools to simulate a compound event -Model a real-world compound event and predict its outcome using a simulation	Lesson TN-4* (Student Companion): Simulate compound events		1
		*TN standards assessed online and the very back of Volume 2	Topic 4 Assessment (Omit frequency tables)	1
8.EE.C.8	-Examine graphs of linear systems of equations to determine the number of solutions, based on number of intersection points -Compare the equations in a linear system to look for a relationship between the number of solutions and the slopes and y-intercepts of the equations	Lesson 5-1: Estimate solutions by inspection		1
8.EE.C.8.a/b	Create and examine graphs of linear systems of equations to determine the solution	Lesson 5-2: Solve system of equations by graphing	Lesson 5-1/5-2 Quizzes	4
8.G.A.1 8.G.A.1.a/b/c	-Understand translations -Translate a figure on a coordinate plane -Describe a translation	Lesson 6-1: Analyze translations		2
8.G.A.1 8.G.A.1.a/b/c	-Understand and describe a reflection -Reflect two-dimensional figures	Lesson 6-2: Analyze reflections		2
8.G.A.1 8.G.A.1.a/b/c	-Identify and perform a rotation	Lesson 6-3: Analyze rotations		2

	-Determine how a rotation affects a two-dimensional figure			
8.G.A.1 8.G.A.1.a/b/c	-Understand a sequence of transformations -Describe and perform a sequence of transformations	Lesson 6-4: Compose transformations		2
8.G.A.1	-Understand congruence of figures using a series of transformations -Identify congruent figures	Lesson 6-5: Understand congruent figures		2
		Page 343	Mid-Topic Assessment/ Performance Assessment or Project	3
8.G.A.1 8.G.A.1.d	-Understand dilations -Dilate to enlarge or reduce a figure in a coordinate plane	Lesson 6-6: Describe dilations		2
8.G.A.1	-Understand similarity -Complete a similarity transformation -Identify similar figures	Lesson 6-7: Understand similar figures		2
8.G.A.2	- Understand the relationships of angles formed by parallel lines -find unknown angle measures	Lesson 6-8: Angles, lines, and transversals		3
8.G.A.2	-Understand the relationship of the interior angles of a triangle -Find unknown angle measures	Lesson 6-9: Interior and exterior angles of triangles		2
8.G.A.2	-Determine whether triangles are similar -Solve problems involving similar triangles	Lesson 6-10: Angle-angle triangle similarity		2
		Page 383	Topic 6 Assessment	1
8.G.B.3 8.G.B.4	-Understand the Pythagorean Theorem -Given two side lengths of a right triangles, use the Pythagorean theorem to find the side length of the third side	Lesson 7-1: Understand the Pythagorean Theorem		3
8.G.B.3 8.G.B.4	-Understand why the Converse of the Pythagorean theorem is true -Apply the Converse of the Pythagorean theorem to identify right triangles -Use the Converse of the Pythagorean theorem to analyze two-dimensional shapes	Lesson 7-2: Understand the converse of the Pythagorean Theorem		1
8.G.B.4	-Apply the Pythagorean theorem and its converse to solve real-world problems -Apply the Pythagorean theorem to solve problems that involve three dimensions	Lesson 7-3: Apply the Pythagorean Theorem to solve problems		3

8.G.B.5	-Apply the Pythagorean theorem to find the distance between two points on a map or coordinate plane -Find the perimeter of a figure on a coordinate plane -Identify the coordinates of the third vertex of a triangle on the coordinate plane	Lesson 7-4: Find distance in the coordinate plane		2
		Page 425	Topic 7 Assessment	1
4th Quarter-44 schooldays				
Standard(s)	Learning Objective(s)	Savvas Alignment	Assessments	Pacing
8.G.C.6	-Recognize the relationship between the volume of a rectangular prism and the volume of a cylinder -solve real-world problems involving the volume of a cylinder -Use the formula for the volume of a cylinder to find an unknown measure.	Lesson 8-2: Find volume of cylinders		3
8.G.C.6	- Recognize the relationship between the volume of a cylinder and the volume of a cone - Use the Pythagorean theorem when solving volume problems -Find the volume of a cone. Given the circumference of the base, find the volume of a cone	Lesson 8-3: Find volume of cones		3
8.G.C.6	- Recognize the relationship between the volume of a cone and volume of a sphere - Find the volume of a sphere. Given the surface area, find the volume of a sphere -Find the volume of a composite figure	Lesson 8-4: Find volume of spheres		3
		Page 467	Topic 8 Assessment (omit lesson 8-1)	1
Focus: Major Work standards	TN READY REVIEW: Review all Grade 8 standards	<ul style="list-style-type: none"> Standards Practice sheets Assessment Readiness Practice Tests 		20
8.EE.C.7	Algebra 1 Prep- Solving Linear Equations	Lesson 2-1: Combine Like Terms to Solve Equations Lesson 2-2: Solve Equations with Variables on Both Sides		4 days

		Lesson 2-3: Solve Multistep Equations Lesson 2-4: Equations with No Solutions or Infinitely Many Solutions		
8.F.A.1 8.F.A.2 8.F.A.3 8.F.B.4	Algebra 1 Prep- Functions	Lesson 3-1: Understand Relations and Functions Lesson 3-2: Connect Representations of Functions Lesson 3-3: Compare Linear and Nonlinear Functions Lesson 3-4: Construct Functions to Model Linear Relationships		4 days
8.EE.C.8	Algebra 1 Prep- Systems of Linear Equations	Lesson 5-1: Estimate solutions by inspection Lesson 5-2: Solve system of equations by graphing		3 days
8.EE.A.1 8.EE.A.2	Algebra 1 Prep- Exponents	Lesson 1-6: Use Properties of Integer Exponents (Positive) Lesson 1-7: More Properties of Integer Exponents (Negative)		3 days