



Alignment Document
State of Georgia and Aventa Learning

Math 7

Strand	Common Curriculum Goal	Standard	Lesson Name
M7N Students will further develop their understanding of the concept of rational numbers and apply them to real world situations.	M7N1 Students will understand the meaning of positive and negative rational numbers and use them in computation.	M7N1.a Find the absolute value of a number and understand it as the distance from zero on a number line.	Lesson 1: Integers
		M7N1.b Compare and order rational numbers, including repeating decimals.	Lesson 9: Place Value, Round, Compare, Order Decimals Lesson 14: Connect Fractions, Decimals, Percents
		M7N1.c Add, subtract, multiply and divide positive and negative rational numbers.	Lesson 5: Addition and Subtraction of Fractions Lesson 6: Multiplication and Division of Fractions Lesson 11: Addition and Subtraction of Decimals Lesson 12: Multiplicaiton and Division of Decimals



Alignment Document
State of Georgia and Aventa Learning

Math 7

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		M7N1.d Solve problems using rational numbers.	Lesson 5: Addition and Subtraction of Fractions Lesson 6: Multiplication and Division of Fractions Lesson 8: Solving Equations with Fractions Lesson 11: Addition and Subtraction of Decimals Lesson 12: Multiplicaiton and Division of Decimals Lesson 13: Solving Equations with Decimals
<p>M7G Students will further develop and apply their understanding of plane and solid geometric figures through the use of constructions and transformations. Students will explore the properties of similarity and further develop their understanding of 3-dimensional figures.</p>	<p>M7G1 Students will construct plane figures that meet given conditions.</p>	<p>M7G1.a Perform basic constructions using both compass and straight edge, and appropriate technology. Constructions should include copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</p>	



Alignment Document
State of Georgia and Aventa Learning

Math 7

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		M7G1.b Recognize that many constructions are based on the creation of congruent triangles.	Lesson 24: Quadrilaterals and Other Polygons
	M7G2 Students will demonstrate understanding of transformations.	M7G2.a Demonstrate understanding of translations, dilations, rotations, reflections, and relate symmetry to appropriate transformations.	Lesson 28: Transformations
		M7G2.b Given a figure in the coordinate plane, determine the coordinates resulting from a translation, dilation, rotation, or reflection.	Lesson 28: Transformations
	M7G3. Students will use the properties of similarity and apply these concepts to geometric figures.	M7G3.a Understand the meaning of similarity, visually compare geometric figures for similarity, and describe similarities by listing corresponding parts.	Lesson 31: Ratios and Proportions
		M7G3.b Understand the relationships among scale factors, length ratios, and area ratios between similar figures. Use scale factors, length ratios, and area ratios to determine side lengths and areas of similar geometric figures.	Lesson 27: Volumes and Surface Areas Lesson 31: Ratios and Proportions
		M7G3.c Understand congruence of geometric figures as a special case of similarity: The figures have the same size and shape.	Lesson 24: Quadrilaterals and Other Polygons
	M7G4. Students will further develop their understanding of three-dimensional figures.	M7G4.a Describe three-dimensional figures formed by translations and rotations of plane figures through space.	



Alignment Document
State of Georgia and Aventa Learning

Math 7

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		M7G4.b Sketch, model, and describe cross-sections of cones, cylinders, pyramids, and prisms.	
M7A Students will demonstrate an understanding of linear relations and fundamental algebraic concepts.	M7A1 Students will represent and evaluate quantities using algebraic expressions.	M7A1.a Translate verbal phrases to algebraic expressions.	Lesson 32: Number Concepts
		M7A1.b Simplify and evaluate algebraic expressions, using commutative, associative, and distributive properties as appropriate.	Lesson 3: Order of Operations Lesson 33: Properties of Numbers and Variable Expressions
		M7A1.c Add and subtract linear expressions.	
	M7A2 Students will understand and apply linear equations in one variable.	M7A2.a Given a problem, define a variable, write an equation, solve the equation, and interpret the solution.	Lesson 32: Number Concepts Lesson 33: Properties of Numbers and Variable Expressions
		M7A2.b Use the addition and multiplication properties of equality to solve one- and two-step linear equations.	Lesson 32: Number Concepts Lesson 33: Properties of Numbers and Variable Expressions
	M7A3 Students will understand relationships between two variables.	M7A3.a Plot points on a coordinate plane.	Lesson 35: Functions, Graphs, and Linear Equations
		M7A3.b Represent, describe, and analyze relations from tables, graphs, and formulas.	Lesson 35: Functions, Graphs, and Linear Equations



Alignment Document
State of Georgia and Aventa Learning

Math 7

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		M7A3.c Describe how change in one variable affects the other variable.	
		M7A3.d Describe patterns in the graphs of proportional relationships, both direct ($y = kx$) and inverse ($y = k/x$).	
M7D Students will demonstrate understanding of data analysis by posing questions, collecting data, analyzing the data using measures of central tendency and variation, and using the data to answer the questions posed. Students will understand the role of probability in sampling.	M7D1 Students will pose questions, collect data, represent and analyze the data, and interpret results.	M7D1.a Formulate questions and collect data from a census of at least 30 objects and from samples of varying sizes.	
		M7D1.b Construct frequency distributions.	Lesson 30: Graphs and Data Analysis
		M7D1.c Analyze data using measures of central tendency (mean, median, and mode), including recognition of outliers.	Lesson 19: Mean, Median, Mode, Range
		M7D1.d Analyze data with respect to measures of variation (range, quartiles, interquartile range).	Lesson 19: Mean, Median, Mode, Range Lesson 30: Graphs and Data Analysis



Alignment Document
State of Georgia and Aventa Learning

Math 7

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		M7D1.e Compare measures of central tendency and variation from samples to those from a census. Observe that sample statistics are more likely to approximate the population parameters as sample size increases.	
		M7D1.f Analyze data using appropriate graphs, including pictographs, histograms, bar graphs, line graphs, circle graphs, and line plots introduced earlier, and using box-and-whisker plots and scatter plots.	Lesson 26: Circles Lesson 30: Graphs and Data Analysis
		M7D1.g Analyze and draw conclusions about data, including describing the relationship between two variables.	
M7P The following process standards are essential to mastering each of the mathematics content standards. They emphasize critical dimensions of the mathematical proficiency that all students need.	M7P1 Students will solve problems (using appropriate technology).	M7P1.a Build new mathematical knowledge through problem solving.	Lesson 14: Connect Fractions, Decimal, Percents Lesson 18: Solving Equations with Percents Lesson 20: Probability Lesson 21: Combinations and Permutations



Alignment Document
State of Georgia and Aventa Learning

Math 7

Strand	Common Curriculum Goal	Standard	Lesson Name
		M7P1.b Solve problems that arise in mathematics and in other contexts.	Lesson 18: Solving Equations with Percents Lesson 21: Combinations and Permutations
		M7P1.c Apply and adapt a variety of appropriate strategies to solve problems.	Lesson 20: Probability Lesson 21: Combinations and Permutations
		M7P1.d Monitor and reflect on the process of mathematical problem solving.	
	M7P2 Students will reason and evaluate mathematical arguments.	M7P2.a Recognize reasoning and proof as fundamental aspects of mathematics.	
		M7P2.b Make and investigate mathematical conjectures.	
		M7P2.c Develop and evaluate mathematical arguments and proofs.	
		M7P2.d Select and use various types of reasoning and methods of proof.	
	M7P3 Students will communicate mathematically.	M7P3.a Organize and consolidate their mathematical thinking through communication.	Lesson 31: Ratios and Proportions Lesson 32: Number Concepts
		M7P3.b Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.	Lesson 31: Ratios and Proportions Lesson 32: Number Concepts
		M7P3.c Analyze and evaluate the mathematical thinking and strategies of others.	
		M7P3.d Use the language of mathematics to express mathematical ideas precisely.	Lesson 31: Ratios and Proportions Lesson 32: Number Concepts



Alignment Document
State of Georgia and Aventa Learning

Math 7

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	M7P4 Students will make connections among mathematical ideas and to other disciplines.	M7P4.a Recognize and use connections among mathematical ideas.	Lesson 14: Connect Fractions, Decimals, Percents Lesson 31: Ratios and Proportions
		M7P4.b Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	Lesson 14: Connect Fractions, Decimals, Percents
		M7P4.c Recognize and apply mathematics in contexts outside of mathematics.	
	M7P5 Students will represent mathematics in multiple ways.	M7P5.a Create and use representations to organize, record, and communicate mathematical ideas.	
		M7P5.b Select, apply, and translate among mathematical representations to solve problems.	Lesson 14: Connect Fractions, Decimals, Percents
		M7P5.c Use representations to model and interpret physical, social, and mathematical phenomena.	
M7RC1 Students will enhance reading in all curriculum areas by:	M7RC1.a Reading in all curriculum areas	M7RC1.a.1 Read a minimum of 25 grade-level appropriate books per year from a variety of subject disciplines and participate in discussions related to curricular learning in all areas.	
		M7RC1.a.2 Read both informational and fictional texts in a variety of genres and modes of discourse.	
		M7RC1.a.3 Read technical texts related to various subject areas.	



Alignment Document
State of Georgia and Aventa Learning

Math 7

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	M7RC1.b Discussing books.	M7RC1.b.1 Discuss messages and themes from books in all subject areas.	
		M7RC1.b.2 Respond to a variety of texts in multiple modes of discourse.	
		M7RC1.b.3 Relate messages and themes from one subject area to messages and themes in another area.	
		M7RC1.b.4 Evaluate the merit of texts in every subject discipline.	
		M7RC1.b.5 Examine author's purpose in writing.	
		M7RC1.b.6 Recognize the features of disciplinary texts.	
	M7RC1.c Building vocabulary knowledge	M7RC1.c.1 Demonstrate an understanding of contextual vocabulary in various subjects.	Math vocabulary throughout course
		M7RC1.c.2 Use content vocabulary in writing and speaking.	
		M7RC1.c.3 Explore understanding of new words found in subject area texts.	Math vocabulary throughout course
	M7RC1.d Establishing context	M7RC1.d.1 Explore life experiences related to subject area content.	
		M7RC1.d.2 Discuss in both writing and speaking how certain words are subject area related.	
		M7RC1.d.3 Determine strategies for finding content and contextual meaning for unknown words.	