

Grade 6 Curriculum Map

Unit	Week(s)	Topics	Oregon Standards	Learning Goals
1. Area and Surface Area	1–4	Areas of triangles, quadrilaterals , and polygons; volume of rectangular prisms; nets; surface area	6.G.A.1: Find the area of right triangles, other triangles, special quadrilaterals , and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in real-world and mathematical problems.6.G.A.2: Find the volume of right rectangular prisms with fractional edge lengths using unit cubes and the formulas $V = lwh$ and $V = bh$ 6.G.A.4: Represent	Students will decompose and compose figures to determine area; find volume with fractional edge lengths; construct and interpret nets; calculate and explain surface area in real-world contexts.

			three-dimensional figures using nets made of rectangles and triangles and use nets to find surface area.	
2. Introducing Ratios	5–8	Ratio language; equivalent ratios; ratio tables; tape diagrams; double number lines; coordinate representations	6.RP.A.1: Understand the concept of a ratio and use ratio language to describe relationships between quantities.6.RP.A.3: Use ratio and rate reasoning to solve real-world and mathematical problems.6.RP.A.3.A: Make tables of equivalent ratios, find missing values, plot pairs on the coordinate plane, and use tables to compare ratios.	Students will describe ratio relationships precisely; generate equivalent ratios; use tables, diagrams, and graphs; solve missing-value and comparison problems.
3. Unit Rates and Percentages	9–12	Unit rates; unit pricing; constant speed;	6.RP.A.3: Use ratio and rate reasoning to solve	Students will calculate and interpret unit rates; solve

		percents; percent of a quantity; finding the whole; measurement conversions	problems involving equivalent ratios, unit rates, percents, and measurement units.6.RP.A.3 .B: Solve unit-rate problems, including unit pricing and constant speed.6.RP.A .3.C: Find a percent of a quantity as a rate per 100 and solve problems involving finding the whole.6.RP.A. 3.D: Use ratio reasoning to convert measurement units.	percent problems using multiple representations; determine missing wholes or parts; convert units using ratio reasoning.
4. Dividing Fractions	13–15	Meaning of fraction division; visual models; equations; contextual problems; relationship between multiplication and division	6.NS.A.1: Interpret and compute quotients of fractions and solve word problems involving division of fractions by fractions using visual models and equations.	Students will interpret fraction quotients; model division with diagrams; connect fraction division to multiplication; solve and explain real-world problems.

5. Arithmetic in Base Ten	16–19	Multi-digit division; decimal operations; rational-number computation; greatest common factor; least common multiple; distributive property	6.NS.B.2: Fluently divide multi-digit numbers using the standard algorithm.6.NS.B.3: Fluently add, subtract, multiply, and divide positive rational numbers using accurate, efficient, and flexible strategies and algorithms.6.NS.B.4: Find greatest common factors and least common multiples and use the distributive property to rewrite sums.	Students will compute accurately and efficiently with multi-digit numbers and decimals; select appropriate strategies; determine GCF and LCM; use factors and the distributive property to solve problems.
6. Expressions and Equations	20–24	Exponents; evaluating expressions; variables; equivalent expressions; substitution; equations; inequalities; number-line	6.EE.A.1: Write and evaluate numerical expressions involving whole-number exponents.6.EE.A.2: Write, read, and	Students will evaluate and write expressions; use properties to create equivalent expressions; represent situations

		representations	evaluate expressions in which letters stand for numbers.6.E.E.A.3: Apply properties of operations to generate equivalent expressions.6.EE.A.4: Identify when two expressions are equivalent.6.EE.B.5: Use substitution to determine whether values make equations or inequalities true.6.EE.B.6: Use variables to represent numbers and write expressions for real-world and mathematical problems.6.EE.B.7: Solve equations of the form $x + p = q$ and $px = q$ for nonnegative rational numbers.6.E	with variables; solve and verify one-step equations; write, graph, and interpret inequalities.
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			E.B.8: Write and graph inequalities of the form $x > c$ or $x < c$ and recognize that they have infinitely many solutions.	
7. Rational Numbers	25–28	Integers; opposites; number lines; coordinate planes; quadrants; ordering rational numbers; absolute value; real-world comparisons	6.NS.C.6.A: Recognize opposite signs as locations on opposite sides of zero and understand opposites.6.NS.C.6.B: Interpret signs in ordered pairs and relate points through reflections.6.NS.C.6.C: Locate integers and rational numbers on number lines and coordinate planes.6.NS.C.7: Interpret inequalities and explain order and absolute value in	Students will locate and compare rational numbers; explain opposites and absolute value; graph points in all four quadrants; interpret inequalities and absolute value in meaningful contexts.

			authentic applications.6 .NS.C.7.A: Interpret inequalities as relative positions on a number line.6.NS.C.7.B: Write, interpret, and explain order statements for rational numbers in real-world contexts.6.NS.C.7.C: Understand absolute value as distance from zero and magnitude in context.6.NS.C.7.D: Distinguish comparisons of absolute value from statements about order.	
8. Data Sets and Distributions	29–33	Statistical questions; variability; distributions; center; spread; dot plots; histograms; box plots; mean; median; interquartile	6.SP.A.1: Recognize statistical questions as questions that anticipate variability.6.S.P.A.2: Describe distributions by center, spread, and	Students will distinguish statistical from nonstatistical questions; represent data appropriately; calculate and interpret measures of

		range; mean absolute deviation	overall shape.6.SP.A. 3: Recognize that measures of center summarize data and measures of variation describe how data vary.6.SP.B.4: Display numerical data in dot plots, histograms, and box plots.6.SP.B.5 : Summarize numerical data sets in relation to their context.6.SP. B.5.C: Give quantitative measures of center and variability and describe patterns and deviations in context.	center and variability; describe distribution shape, clusters, gaps, and outliers.
9. Putting It All Together	34–36	Cumulative review; mathematical modeling; multi-step problem solving; standards-ba sed projects;	Integrate standards from Units 1–8, including geometry, ratios, number systems, expressions	Students will apply multiple representatio ns and strategies; connect concepts across units; justify

		assessment and reflection	and equations, and statistics.	solutions; complete a cumulative performance task; reflect on mathematical growth.
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Grade 7 Curriculum Map

Unit	Week(s)	Topics	Oregon Standards	Learning Goals
1. Scale Drawings	1–4	Scale factors; scale drawings; actual and drawing lengths; area relationships; reproducing drawings	7.G.A.1: Solve problems involving scale drawings, including computing actual lengths and areas and reproducing drawings at different scales.7.RP.A.2: Recognize and represent proportional relationships.7.RP.A.2.A: Determine whether quantities are proportional using equivalent ratios, tables, or graphs through the origin.7.RP.A.2.B: Identify	Students will use scale factors to calculate lengths and areas; determine whether relationships are proportional; identify and interpret constants of proportionality; create scaled representations.

			the constant of proportionality in tables, graphs, equations, diagrams, and descriptions.	
2. Introducing Proportional Relationships	5–8	Unit rates with fractions; proportional tables; graphs; equations; constants of proportionality; interpreting points	7.RP.A.1: Compute unit rates associated with ratios of fractions.7.RP.A.2: Represent proportional relationships in tables, graphs, equations, diagrams, and verbal descriptions.7.RP.A.2.C: Represent proportional relationships by equations.7.RP.A.2.D: Explain the meaning of points on graphs of proportional relationships, especially $(0, 0)$ and $(1, r)$.	Students will calculate unit rates involving fractions; represent proportional relationships in multiple ways; write equations; explain the meaning of points and constants of proportionality.
3. Measuring Circles	9–11	Circumference; area;	7.G.B.4: Know and	Students will identify radius

		radius; diameter; pi; informal derivation of circle formulas	use formulas for the area and circumference of a circle and give an informal derivation of the relationship between circumference and area.	and diameter; use and explain circle formulas; estimate and calculate circumference and area; justify the role of pi.
4. Proportional Relationships and Percentages	12–15	Percent increase and decrease; discounts; tax; tips; markups; multistep percent problems; rational-number applications	7.RP.A.3: Use proportional relationships to solve multistep ratio and percent problems. 7.E E.B.3: Solve multistep real-life and mathematical problems with positive and negative rational numbers, use tools strategically, and assess reasonableness.	Students will solve multistep percent problems; represent changes with equations, tables, and diagrams; compute with rational numbers; estimate and evaluate the reasonableness of solutions.
5. Rational Number Arithmetic	16–19	Addition, subtraction, multiplication, and division of rational numbers; signs; absolute value;	7.NS.A.1: Apply and extend understanding of addition, subtraction, and absolute value to add and subtract	Students will compute with rational numbers accurately; explain sign rules using models and properties;

		decimals, fractions, and percents	rational numbers; understand subtraction as adding an additive inverse.7.NS.A.2.A: Extend multiplication to rational numbers while preserving properties of operations and interpret signed products in context.7.NS.A.2.B: Understand division of integers with nonzero divisors and interpret rational quotients.7.NS.A.2.C: Apply properties of operations to multiply and divide rational numbers.7.NS.A.2.D: Convert rational numbers to decimals using long division and recognize terminating or	convert among fractions, decimals, and percents; apply rational-number operations to real-world situations.
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			repeating decimals.7.N S.A.3: Solve problems involving the four operations with rational numbers.	
6. Expressions, Equations, and Inequalities	20–23	Combining like terms; distributive property; equivalent expressions; equations; inequalities; contextual modeling	7.EE.A.1: Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients.7. EE.A.2: Explain how rewriting expressions in different forms reveals relationships among quantities.7.E E.B.4.A: Solve equations of the forms $px + q = r$ and $p(x + q) = r$ and compare algebraic and arithmetic solutions.7.E E.B.4.B: Solve inequalities of the forms $px + q > r$	Students will simplify and transform expressions; solve multistep equations and inequalities; compare solution methods; graph and interpret solution sets; model real-world constraints algebraically.

			or $px + q < r$, graph solution sets, and interpret them in context.	
7. Angles, Triangles, and Prisms	24–27	Angle relationships; triangle construction; slicing solids; area, volume, and surface area of composite figures	7.G.A.2: Draw geometric shapes with given conditions and determine whether conditions create one, more than one, or no triangle.7.G.A. .3: Describe two-dimensio nal figures resulting from slices of three-dimensi onal figures.7.G.B. 5: Use angle relationships to write and solve equations for unknown angles.7.G.B. 6: Solve problems involving area, volume, and surface area of composite two- and	Students will construct and classify triangles; use angle relationships to solve for unknowns; visualize cross-section s; solve measurement problems involving composite figures.

			three-dimensional objects.	
8. Probability and Sampling	28–33	Populations and samples; random sampling; inference; variability in samples; probability models; experimental and theoretical probability; compound events	7.SP.A.1: Use samples to gain information about populations and understand the importance of representative random samples.7.SP.A.2: Use random-sample data to draw inferences and generate multiple samples to gauge variation.7.SP.B.3: Informally assess visual overlap of distributions by comparing centers and variability.7.SP.B.4: Use measures of center and variability to make informal comparative inferences.7.SP.C.5: Understand probability as	Students will distinguish populations from samples; design or evaluate random samples; make cautious inferences; compare distributions; calculate and estimate probabilities; construct models for compound events.

			a number between 0 and 1 expressing likelihood.7.S P.C.6: Approximate probability using long-run relative frequency and predict relative frequency from probability.7.S P.C.7: Develop probability models, compare model probabilities with observed frequencies, and explain discrepancies .7.SP.C.8: Find probabilities of compound events using lists, tables, tree diagrams, and simulations.	
9. Putting It All Together	34–36	Cumulative review; modeling; proportional reasoning; algebraic	Integrate standards from Units 1–8, including proportional reasoning,	Students will select appropriate strategies; connect representatio

		problem solving; geometry; statistics and probability; final assessment	rational-number arithmetic, expressions and equations, geometry, statistics, and probability.	ns; solve multistep problems; justify conclusions with mathematical evidence; complete a cumulative performance task and reflection.
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Grade 8 Curriculum Map

Unit	Week(s)	Topics	Oregon Standards	Learning Goals
1. Rigid Transformations and Congruence	1–4	Translations; reflections; rotations; coordinate rules; congruence; sequences of transformations	8.G.A.1: Verify experimentally the properties of rotations, reflections, and translations.8.G.A.2: Understand congruence as the result of a sequence of rotations, reflections, and translations and describe such sequences.8.G.A.3: Describe the effects of dilations,	Students will perform and describe rigid transformations; use coordinates to verify transformation properties; determine whether figures are congruent; justify congruence through transformation sequences.

			translations, rotations, and reflections on figures using coordinates.	
2. Dilations, Similarity, and Introducing Slope	5–8	Dilations; scale factors; similar figures; angle relationships; proportional relationships; slope; rate of change	8.G.A.4: Understand similarity as the result of rotations, reflections, translations, and dilations and describe sequences producing similar figures.8.G.A.5: Use informal arguments about triangle angles, parallel lines, transversals, and angle-angle similarity.8.EE.B.5: Graph proportional relationships, interpret unit rate as slope, and compare proportional relationships.8.EE.B.6: Use similar triangles to explain slope and derive equations of lines through	Students will use dilations to analyze similarity; justify triangle similarity informally; calculate and interpret slope; connect proportional relationships, similar triangles, graphs, and linear equations.

			or not through the origin.	
3. Linear Relationships	9–12	Functions; input and output; tables; graphs; equations; rate of change; initial value; linear and nonlinear relationships	8.F.A.1: Understand a function as a rule assigning each input exactly one output and interpret its graph as ordered pairs. 8.F.A.2: Compare properties of functions represented algebraically, graphically, numerically, or verbally. 8.F.A.3: Interpret $y = mx + b$ as a linear function and identify examples of non-linear functions. 8.F.B.4: Construct a function to model a linear relationship and determine and interpret rate of change and initial value. 8.F.B.5: Describe	Students will identify and represent functions; compare functions across representations; distinguish linear from nonlinear relationships; determine and interpret slope and initial value; model situations with linear functions.

			functional relationships by analyzing graphs and sketch graphs from verbal descriptions.	
4. Linear Equations and Linear Systems	13–17	Solving linear equations; distributive property; rational coefficients; one, none, or infinitely many solutions; systems; graphing; substitution; real-world systems	8.EE.C.7: Solve linear equations in one variable.8.EE.C.7.A: Identify equations with one, infinitely many, or no solutions by transforming them into equivalent forms.8.EE.C.7.B: Solve linear equations with rational coefficients, including equations requiring distribution and combining like terms.8.EE.C.8: Analyze and solve pairs of simultaneous linear equations.8.EE.C.8.A: Understand	Students will solve and verify linear equations; classify solution sets; solve systems using graphs and algebraic methods; interpret intersections; model and solve contextual systems.

			systems solutions as points of intersection of graphs.8.EE.C.8.B: Solve systems algebraically, by graphing, or by inspection.8.EE.C.8.C: Solve real-world and mathematical problems leading to systems of two linear equations.	
5. Functions and Volume	18–21	Functions in context; qualitative graph interpretation; cylinders; cones; spheres; volume formulas; composite applications	8.F.A.1: Understand functions as input-output rules with corresponding ordered pairs.8.F.B.5: Describe qualitative functional relationships by analyzing and sketching graphs.8.G.C.9: Know and use formulas for volumes of cones, cylinders, and spheres.	Students will interpret and sketch graphs describing changing quantities; connect functions to real-world situations; select and apply volume formulas; explain units and reasonableness of results.

6. Associations in Data	22–25	Bivariate data; scatter plots; association; clusters; outliers; lines of fit; linear models; two-way tables; relative frequencies	8.SP.A.1: Construct and interpret scatter plots to investigate associations between two quantities.8.S.P.A.2: Informally fit lines to scatter plots and assess model fit.8.SP.A.3: Use linear models to solve problems and interpret slope and intercept in context.8.SP.A.4: Construct and interpret two-way tables and relative frequencies to describe possible associations between categorical variables.	Students will construct and interpret scatter plots; describe positive, negative, linear, nonlinear, and weak associations; fit and evaluate linear models; interpret slope and intercept; analyze two-way tables.
7. Exponents and Scientific Notation	26–28	Integer exponents; equivalent expressions; square and cube roots; powers of ten; scientific	8.EE.A.1: Apply properties of integer exponents to generate equivalent numerical	Students will apply exponent properties; interpret and estimate roots; express

		notation; operations and estimation	expressions.8.EE.A.2: Use square- and cube-root symbols, evaluate roots of small perfect powers, and recognize that $\sqrt{2}$ is irrational.8.EE.A.3: Use scientific notation to estimate and compare very large and very small quantities.8.EE.A.4: Perform operations with numbers expressed in scientific notation and interpret technology-generated notation.	quantities in scientific notation; compare magnitudes; perform operations and select appropriate units.
8. Pythagorean Theorem and Irrational Numbers	29–33	Pythagorean theorem; converse; proofs; distance in the coordinate plane; right triangles in two and three dimensions; rational and	8.G.B.6: Explain a proof of the Pythagorean Theorem and its converse.8.G.B.7: Apply the Pythagorean Theorem to determine unknown side	Students will explain and apply the Pythagorean theorem and converse; solve right-triangle and coordinate-distance problems;

		irrational numbers; approximations	lengths in right triangles in two and three dimensions.8. G.B.8: Apply the Pythagorean Theorem to find distance between two points in a coordinate system.8.NS. A.1: Know that real numbers that are not rational are irrational and understand decimal expansions of rational and irrational numbers.8.N S.A.2: Use rational approximations of irrational numbers to compare, locate, and estimate values.	classify numbers as rational or irrational; approximate and compare irrational values.
9. Putting It All Together	34–36	Cumulative review; functions; systems; geometry; data modeling; scientific	Integrate standards from Units 1–8, including transformations, similarity, linear relationships,	Students will synthesize concepts across domains; choose efficient representatio

		notation; irrational numbers; final performance task	equations and systems, volume, data, exponents, scientific notation, the Pythagorean theorem, and the real number system.	ns and methods; model complex situations; communicate reasoning; complete a cumulative performance task and reflect on readiness for high school mathematics.
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