

GRADE 7: UNIT OVERVIEWS

Unit	Multi-Hour Lessons	Summary	Class Hours	Content Standards Primary (Connections)
7-1 Probability	<ul style="list-style-type: none"> • Introduction to Probability • Flips, Rolls, and Sample Space Displays • Probability Experiments: Games and Puzzles 	Students perform experiments and play games to become familiar with probability vocabulary, notation, and common data displays. They learn the difference between theoretical and experimental probability. They explore repeating decimals.	3 lessons 13-14 hours	7.SP.5-8 7.NS.2
7-2 Percent and Scale	<ul style="list-style-type: none"> • Percent Increase and Decrease • Percent Applications • Scale Drawings 	<p>Students learn common vocabulary related to percent and solve real-life problems that include percent increases and decreases.</p> <p>They learn the meanings of scale and scale factors, and they interpret and make scale drawings.</p>	3 lessons 15-16 hours	7.RP.2,3 (7.NS.3) (7.EE.2,3) 7.G.1
7-3 Proportional Relationships	<ul style="list-style-type: none"> • An Introduction to Proportional Relationships • Digging Deeper into Proportional Relationships • Equations and Problems 	Students use unit rates and unit prices, tables, double number lines, graphs, and equations to explore what it means for a relationship between quantities to be proportional, and they identify the constant of proportionality. Students also solve problems using multiple strategies, including algebra.	3 lessons 13 hours	7.RP.1,2 (7.G.1) (7.NS.3) (7.EE.3)
7-4 Rational Number Addition and Subtraction	<ul style="list-style-type: none"> • Counters and Adding Integers • Counters and Subtracting Integers • Adding and Subtracting Rational Numbers 	Students use a temperature and counter model to make sense of and develop rules for adding and subtracting integers. They use number lines to extend these rules to non-integer rational numbers.	3 lessons 11-13 hours	7.NS.1 (7.SP.7,8)
7-5 Rational Number Multiplication and Division	<ul style="list-style-type: none"> • Multiplying and Dividing Integers • Multiplying and Dividing Rational Numbers • Order of Operations 	Students use a temperature and counter model and number lines to make sense of and develop rules for multiplying rational numbers, and they establish division rules through patterns and inverse operation relationships. Students apply the order of operations to evaluate numerical expressions and solve problems.	3 lessons 11-13 hours	7.NS.1,2, 3 (7.EE.3)
7-6 Expressions	<ul style="list-style-type: none"> • Expression-Investigations • Visual Patterns • Expressions with Cups and Counters • Fluency with Expressions 	Students generate equivalent numerical expressions to represent geometric patterns and generalize them using variable expressions. They use words, numbers, graphs, and equations (input-output rules) to describe visual patterns and revisit what it means for a relationship to be proportional. A hands-on model is used to create variable expressions. This leads to simplifying, evaluating, and solving problems involving variable expressions with rational coefficients.	4 lessons 15-17 hours	7.EE.1-3 7.RP.2, 3 (7.NS.3)

Ratio and Proportional Relationships Number Sense Expressions and Equations Statistics and Probability Geometry

GRADE 7: UNIT OVERVIEWS (Continued)

Unit	Multi-Hour Lessons	Summary	Class Hours	Content Standards Primary (Connections)
7-7 Equations and Inequalities	<ul style="list-style-type: none"> Solving Equations Using Substitution Solving Equations Using Algebra Inequalities Equations and Inequalities with Rational Numbers 	Students use “mental math” techniques for solving equations. They use balance scales and a hands-on model to solve equations, transitioning into solving them procedurally. They solve and graph inequalities, and they use inequalities to solve problems.	4 lessons 14-17 hours	7.EE.1,4 (7.RP.2) (7.NS.3)
7-8 Plane and Solid Figures	<ul style="list-style-type: none"> Angles Geometric Drawings Cross Sections 	Students learn facts about angles and use them to write equations and solve for unknowns in diagrams. They make geometric drawings freehand with rulers and protractors, and with technology. They explore two-dimensional cross-sections that result from slicing three-dimensional figures by planes.	3 lessons 13-14 hours	7.G.2,3,5 7.EE.4
7-9 Length, Area, and Volume	<ul style="list-style-type: none"> Circle Circumference Circle Area Area and Volume Applications 	Students explore the meaning of pi, derive and apply the formulas for the circumference and area of a circle, and extend prior knowledge about the area of polygons and volume prisms to more complicated figures.	3 lessons 12-13 hours	7.G.4,6 7.G.3 (7.RP.2,3) (NS.3) (7.EE.3) (7.SP.7)
7-10 Sampling	<ul style="list-style-type: none"> Introduction to Sampling Comparing Samples Fish in a Lake 	Students revisit the difference between theoretical and experimental probability to help highlight important aspects of statistics. They learn about populations and sampling. They use statistical measures and data displays to compare samples and make inferences about a sampling experiment.	3 lessons 12-13 hours	7.SP.1-4 7.SP.5,7,8 7.RP.3. (7.EE.3)

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Grade 7: Big Ideas and Connections

