| Domain | Standard | Learning Targets | Resources |
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| **Ratios and Proportional Relationships** | **7.RP.1** Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. | Write ratios in simplest form<br>Write a rate as a unit rate<br>Compare unit rates | Big Ideas:<br>5.1 Ratios and Rates<br><br>IXL:<br>G14, J1, J5, M3, M4 |
| | **7.RP.2** Recognize and represent proportional relationships between quantities.<br>a. Decide whether two quantities are in a proportional relationship.<br>b. Identify the constant of proportionality (unit rate) in tables, graphs, equations,<br>diagrams, and verbal descriptions of proportional relationships.<br>c. Represent proportional relationships by equations.<br>d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r ) where r is the unit rate. | Determine if ratios form a proportion<br>Determine whether two quantities are proportional based on a chart, graph, or situation<br>Use a table to write proportions<br>Use mental math, multiplication property of equality, and cross products to solve proportions<br>Find slope given a graph, table, or two points<br>Interpret slope<br>Identify direct variation given a table, graph or equation<br>Find the constant of proportionality | Big Ideas:<br>5.2 Proportions<br>5.2extension Graphing Proportional Relationships<br>5.3 Writing Proportions<br>5.4 Solving Proportions<br>5.5 Slope<br>5.6 Direct Variation<br><br>IXL:<br>J2, J4, J8, J9, J11, K1, K2, K3, K4, K5, K6, K7, K8, |
| | **7.RP.3** Use proportional relationships to solve multistep ratio and percent problems. | Use the percent proportion or the percent equation to find the percent, the part or the whole amount in given situations<br>Find a new amount if given a percent increase or decrease<br>Find the percent of increase or decrease when given the new and old amounts<br>Find original price, percent of discount, discount amount or sale price<br>Find cost to store, percent of markup, markup amount or selling price<br>Use the simple interest formula to find interest, principal, interest rate, time or balance | Big Ideas:<br>5.1 Ratios and Rates<br>5.3 Writing Proportions<br>6.3 The Percent Proportions<br>6.4 The Percent Equation<br>6.5 Percent of Increase and Decrease<br>6.6 Discounts and Markups<br>6.7 Simple Interest<br><br>IXL:<br>J12, L4, L5, L6, L7, L8, L9, L10, M4, M5, M6, M7, M8, M9, M10, M11, M12, DD3 |
| **The Number System** | **7.NS.1** Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.<br>a. Describe situations in which opposite quantities combine to make 0. | Find absolute value of and integer<br>Compare and order integers and absolute values<br>Add and subtract integers and rational numbers | Big Ideas:<br>1.1 Integers and Absolute Value<br>1.2 Adding Integers |

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| | b. Understand p + q as the number located a distance \|q\| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.<br>c. Understand subtraction of rational numbers as adding the additive inverse, p - q = p + (-q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.<br>d. Apply properties of operations as strategies to add and subtract rational numbers. | Evaluate expressions involving addition and subtraction of integers and rational numbers | 1.3 Subtracting Integers<br>2.2 Adding Rational Numbers<br>2.3 Subtracting Rational Numbers<br><br>IXL:<br>B1, B2, B4, B6, C1, C3, C4, C5, D3, E1, G1, G3, H3, H6, H7, R9 |
| | **7.NS.2** Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.<br>a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (−1)(−1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.<br>b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then –(p/q) = (–p)/q =p/(–q). Interpret quotients of rational numbers by describing real-world contexts.<br>c. Apply properties of operations as strategies to multiply and divide rational numbers.<br>d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. | Find absolute value of and integer<br>Compare and order integers and absolute values<br>Write rational numbers in fraction or decimal form<br>Compare and order rational numbers<br>Multiply and divide integers and rational numbers<br>Evaluate expressions involving multiplication and division of integers and rational numbers | Big Ideas:<br>1.1 Integers and Absolute Value<br>1.4 Multiplying Integers<br>1.5 Dividing Integers<br>2.1 Rational Numbers<br>2.4 Multiplying and Dividing Rational Numbers<br><br>IXL:<br>A3, A4, A10, C6, C7, C8, E3, E5, E6, F1, G7, G9, G10, G12, G13, G14, H1, H8, H9, R9 |
| | **7.NS.3** Solve real-world and mathematical problems involving the four operations with rational numbers. | Solve problems involving adding, subtracting, multiplying and dividing rational numbers | Big Ideas:<br>1.1  Integers and Absolute Value<br>1.2 Adding Integers<br>1.3 Subtracting Integers<br>1.4 Multiplying Integers<br>1.5 Dividing Integers<br>2.2 Adding Rational Numbers<br>2.3 Subtracting Rational Numbers |

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| **Expressions and Equations** | **7.EE.1** Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. | Identify terms and like terms<br>Simplify expressions by distributing and/or combining like terms<br>Factor out the GCF, the coefficient of the variable or a given value | Big Ideas:<br>3.1 Algebraic Expressions<br>3.2 Adding and Subtracting Linear Expressions<br>3.2extension Factoring Expressions<br><br>IXL:<br>R9, R10, R12, R13, R14, R15, R16 |
| | **7.EE.2** Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related | Identify terms and like terms<br>Simplify expressions by distributing and/or combining like terms | Big Ideas:<br>3.1 Algebraic Expressions<br>3.2 Adding and Subtracting Linear Expressions<br><br>IXL: |
| | **7.EE.3** Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. | Write rational numbers in equivalent forms (fractions, decimals, and percents)<br>Compare fractions, decimals and percents<br>Use the percent equation to find the percent, the part , or the whole amount | Big Ideas:<br>6.1 Percents and Decimals<br>6.2 Comparing and Ordering Fractions, Decimals and Percents<br>6.4 The Percent Equation<br><br>IXL:<br>A8, A9, C9, D4, E7, E9, E10, E11, F2, F3, F6, F7, F8, F9, F10, G6, G15, G17, G18, H1, I8, J6, L2, L3, M4, M5, N1, N2, N3, N4, N5, N6, S9 |
| | **7.EE.4** Use variables to represent quantities in a real-world or | Solve one- and two-step equations using | Big Ideas: |

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| mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities<br>a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.<br>b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. | addition, subtraction, multiplication, or division properties of equality.<br>Solve one- and two-step inequalities using addition, subtraction, multiplication, or division properties of inequality.<br>Write an equation or inequality when given a graph or word sentence<br>Graph an inequality on a number line<br>Tell whether a given value is a solution to an equation or inequality | 3.3 Solving Equations Using Addition or Subtraction<br>3.4 Solving Equations Using Multiplication or Division<br>3.5 Solving Two-Step Equations<br>4.1 Writing and Graphing Inequalities<br>4.2 Solving Inequalities using Addition or Subtraction<br>4.3 Solving Equations Using Multiplication or Division<br>4.4 Solving Two-Step Inequalities<br><br>IXL:<br>J11, R11, S3, S5, S6, S7, S8, S9, T1, T2, T3, T4, T5, T6, T7, U4 |
| **Geometry**    **7.G.1** Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. | Use scale to find actual or model dimensions<br>Find scale and scale factor<br>Find actual perimeter or area if given scale of drawing/figure | Big Ideas:<br>7.5 Scale Drawings<br><br>IXL:<br>J7, X9, X10, X11, X12, X13, AA9 |
| **7.G.2** Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. | Classify triangles and quadrilaterals<br>Understand and create constructions of triangles<br>Use the quadrilateral angle sum to find angle measures of quadrilaterals<br>Understand and create constructions of quadrilaterals | Big Ideas:<br>7.3 Triangles<br>7.4 Quadrilaterals<br><br>IXL: |
| **7.G.3** Describe the two-dimensional figures that result from slicing three- dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. | Describe the intersection of a plane and a solid | Big Ideas:<br>9.5extension Cross Sections of Three-Dimensional Figures<br><br>IXL:<br>Z1, Z3, Z4 |
| **7.G.4** Know the formulas for the area and circumference of a circle | Find radius, diameter, and circumference of a | Big Ideas: |

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| | and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. | circle (exact and estimate)<br>Find perimeter of a semicircle<br>Estimate perimeter and area using grid paper<br>Find perimeter of a composite figure (exact and estimate)<br>Find areas of circles, semicircles and composite figures (exact and estimated)<br>Find surface area and lateral surface area of cylinders (exact and estimated) | 8.1 Circles and Circumference<br>8.2 Perimeter of Composite Figures<br>8.3 Areas of Circles<br>9.3 Surface Areas of Cylinders<br><br>IXL:<br>W16, AA5, AA6, |
| | **7.G.5** Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. | Name adjacent and vertical angles<br>Classify complementary and supplementary angles<br>Use angle relationships to find missing measures<br>Use the triangle angle sum to find angle measures of triangles | Big Ideas:<br>7.1 Adjacent and Vertical Angles<br>7.2 Complementary and Supplementary Angles<br>7.3 extension Angle Measures of Triangles<br><br>IXL:<br>W12, W13 |
| | **7.G.6** Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. | Estimate area using grid paper<br>Find areas of composite figures (exact and estimated)<br>Find surface areas of prisms, regular pyramids and composite solids involving each<br>Find volumes of prisms, pyramids and composite solids involving each | Big Ideas:<br>8.4 Areas of Composite Figures<br>9.1 Surface Areas of Prisms<br>9.2 Surface Areas of Pyramids<br>9.4 Volumes of Prisms<br>9.5 Volumes of Pyramids<br><br>IXL:<br>Z2, AA2, AA3, AA4, AA7, AA8, AA12, AA13 |
| **Statistics and Probability** | **7.SP.1** Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. | Identify sample and population in a situation<br>Identify a biased or unbiased sample<br>Determine validity of conclusions<br>Make predictions | Big Ideas:<br>10.6 Samples and Populations<br><br>IXL:<br>CC6 |
| | **7.SP.2** Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate | Determine validity of conclusions<br>Make predictions | Big Ideas:<br>10.6 Samples and |

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| multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. | | Populations<br><br>IXL:<br>J12 |
| **7.SP.3** Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. | Use the mean, mean absolute deviation and interquartile range to compare populations | Big Ideas:<br>10.7 Comparing Populations<br><br>IXL: |
| **7.SP.4** Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. | Use the mean, mean absolute deviation and interquartile range to compare populations | Big Ideas:<br>10.7 Comparing Populations<br><br>IXL:<br>CC1, CC2, CC3, CC4 |
| **7.SP.5** Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. | Identify and count outcomes<br>Describe the likelihood of an event<br>Find and compare theoretical probability of events<br>Use theoretical probability to make a prediction | Big Ideas:<br>10.1 Outcomes and Events<br>10.2 Probability<br>10.3 Experimental and Theoretical Probability<br><br>IXL:<br>DD1 |
| **7.SP.6** Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. | Find and compare experimental and theoretical probability of an event<br>Use experimental probability to make a prediction | Big Ideas:<br>10.3 Experimental and Theoretical Probability<br><br>IXL:<br>DD3, DD4 |
| **7.SP.7** Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.<br>  a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.<br>  b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. | Use theoretical and experimental probability to make predictions | Big Ideas:<br>10.2 Probability<br>10.3 Experimental and Theoretical Probability<br><br>IXL:<br>DD1, DD3 |
| **7.SP.8** Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.<br>a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. | Find a sample space (lists, tables, and tree diagrams)<br>Use the fundamental counting principle and sample spaces to find total possible outcomes<br>Identify compound events as dependent or | Big Ideas:<br>10.4 Compound Events<br>10.5 Independent and Dependent Events<br>10.5extension Simulations |

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| | b.  Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.<br>c.  Design and use a simulation to generate frequencies for compound events. | independent<br>Find the probability of compound events, dependent events and independent events<br>Perform simulations to find probabilities of compound events | IXL:<br>DD2, DD5, DD6, DD7, DD8, DD9, DD10, DD11 |