7th-Grade Math- Curriculum Map

Last Updated: 10/28/24

| Quarter 1 | | |
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| **Essential Question/Topic** | **Standards** | **Parent Resources** |
| Relate Integers and Their Opposites | CC.7.N.S.A.1a: Describe situations in which opposite quantities combine to make 0. | Envision Website & Teacher Google Classroom<br><br>Parent Resources for Lessons |
| Add Integers | CC.7.N.S.A.1b: 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><br>CC.7.NS.A.1d: Apply properties of operations as strategies to add and subtract rational numbers. | Teacher Google Classroom<br><br>Parent Resources for Lessons |
| Subtract Integers | CC.7.NS.A.1c: 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><br>CC.7.NS.A.1d: Apply properties of operations as strategies to add and subtract rational numbers. | Teacher Google Classroom<br><br>Parent Resources for Lessons |
| Multiple & Divide Integers | CC.7.NS.A.2a: 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><br>CC.7.NS.A.2b: 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><br>CC.7.NS.A.2c: Apply properties of operations as strategies to multiply and divide rational numbers. | Teacher Google Classroom<br><br>Parent Resources for Lessons |
| Understand Rational Numbers | CC.7.N.S.A.2d: 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. | Teacher Google Classroom |

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| | | Parent Resources for Lessons |
| Add & Subtract Rational Numbers | CC.7.N.S.A.1b: 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><br>CC.7.NS.A.1c: 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><br>CC.7.NS.A.1d: Apply properties of operations as strategies to add and subtract rational numbers. | Teacher Google Classroom<br><br>Parent Resources for Lessons |
| Multiply Rational Numbers | CC.7.NS.A.2a: 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><br>CC.7.NS.A.2c: Apply properties of operations as strategies to multiply and divide rational numbers | Teacher Google Classroom<br><br>Parent Resources for Lessons |
| Divide Rational Numbers | CC.7.NS.A.2b: 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><br>CC.7.NS.A.2c: Apply properties of operations as strategies to multiply and divide rational numbers | Envision Website & Teacher Google Classroom |
| Solve Problems with Rational Numbers | CC.7.NS.A.3: Solve real world mathematical problems involving the four operations with rational numbers.<br><br>CC.7.EE.B.3: Solve multi-step real life and mathematical problems posed with positive and negative 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. | Envision Website & Teacher Google Classroom |
| Mean, Median, Mode, & Range | CC.7.SP.B. 4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two | Envision Website & Teacher Google Classroom |

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| Quarter 2 | | |
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| **Essential Question/Topic** | **Standards** | **Parent Resources** |
| Connect Ratios, Rates, and Unit Rates | CC.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. | Envision Website & Teacher Google Classroom |
| Determine Unit Rates with Ratios of Fractions | CC.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. | Envision Website & Teacher Google Classroom |
| Understand Proportional Relationships: Equivalent Ratios | CC.7.RP.2 Analyze proportional relationships and use them to solve real-world and mathematical problems. Recognize and represent proportional relationships between quantities. | Envision Website & Teacher Google Classroom |
| Describe Proportional Relationships: Constant of Proportionality | CC.7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. | Envision Website & Teacher Google Classroom |
| Graph Proportional Relationships | CC.7.RP.2d 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 | Envision Website & Teacher Google Classroom |
| Apply Proportional Reasoning to Solve Problems | CC.7.RP.2 Analyze proportional relationships and use them to solve real-world and mathematical problems. Recognize and represent proportional relationships between quantities | Envision Website & Teacher Google Classroom |
| Analyze Percents of Numbers | CC.7.RP.3 Analyze proportional relationships and use them to solve real-world and mathematical problems. Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error | Envision Website & Teacher Google Classroom |
| Connect Percent and Proportion | CC.7.RP.3 Analyze proportional relationships and use them to solve real-world and mathematical problems. Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error | Envision Website & Teacher Google Classroom |
| Represent and | CC.7.RP.3 Analyze proportional relationships and use | Envision Website & |

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| Use the Percent Equation | them to solve real-world and mathematical problems. Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error | Teacher Google Classroom |
| Solve Percent Change and Percent Error Problems | CC.7 RP.3 Analyze proportional relationships and use them to solve real-world and mathematical problems. Use proportional relationships to solve multistep ratio and percent problems. | Envision Website & Teacher Google Classroom |
| Solve Markup and Markdown Problems | CC.7 RP.3 Analyze proportional relationships and use them to solve real-world and mathematical problems. Use proportional relationships to solve multistep ratio and percent problems. | Envision Website & Teacher Google Classroom |
| Solve Simple Interest Problems | CC.7 RP.3 Analyze proportional relationships and use them to solve real-world and mathematical problems. Use proportional relationships to solve multistep ratio and percent problems. | Envision Website & Teacher Google Classroom |

| **Quarter 3** | | |
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| **Essential Question/Topic** | **Standards** | **Parent Resources** |
| Write and Evaluate Algebraic Expressions | CC.7.EE.4 Solve real-life and mathematical problems using numerical and algebraic expressions and equations. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.<br><br>CC.7.EE.3 Solve real-life and mathematical problems using numerical and algebraic expressions and equations. 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 as strategies to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation. | Envision Website & Teacher Google Classroom |
| Generate Equivalent Expressions | CC.7.EE.1 Use properties of operations to generate equivalent expressions. Apply properties of operations as strategies to add, subtract, factor, and expand linear | Envision Website & Teacher Google Classroom |

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| | expressions with rational coefficients. | |
| Simplify Expressions | CC.7.EE.1 Use properties of operations to generate equivalent expressions. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. | Envision Website & Teacher Google Classroom |
| Expand Expressions | CC.7.EE.1 Use properties of operations to generate equivalent expressions. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. | Envision Website & Teacher Google Classroom |
| Factor Expressions | CC.7.EE.1 Use properties of operations to generate equivalent expressions. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. | Envision Website & Teacher Google Classroom |
| Add Expressions | CC.7.EE.1 Use properties of operations to generate equivalent expressions. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. | Envision Website & Teacher Google Classroom |
| Subtract Expressions | CC.7.EE.1 Use properties of operations to generate equivalent expressions. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. | Envision Website & Teacher Google Classroom |
| Analyze Equivalent Expressions | CC.7.EE.2 Use properties of operations to generate equivalent expressions. 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. For example, a + 0.05a = 1.05a means that “increase by 5%” is the same as “multiply by 1.05.” | Envision Website & Teacher Google Classroom |
| Write Two-Step Equations | CC.7.EE.4 Solve real-life and mathematical problems using numerical and algebraic expressions and equations. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities | Envision Website & Teacher Google Classroom |
| Solve Two-Step Equations | CC.7.EE.4 Solve real-life and mathematical problems using numerical and algebraic expressions and equations. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities | Envision Website & Teacher Google Classroom |
| Solve Equations Using the Distributive Property | CC.7.EE.4 Solve real-life and mathematical problems using numerical and algebraic expressions and equations. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities | Envision Website & Teacher Google Classroom |

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| Solve Inequalities Using Addition or Subtraction | CC.7.EE.4b 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. For example, As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions | Envision Website & Teacher Google Classroom |
| Solve Inequalities Using Multiplication or Division | CC.7.EE.4b 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. For example, As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions | Envision Website & Teacher Google Classroom |
| Solve Two-Step Inequalities | CC.7.EE.4b 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. For example, As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions | Envision Website & Teacher Google Classroom |
| Solve Multi-Step Inequalities | CC.7.EE.4b 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. For example, As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions | Envision Website & Teacher Google Classroom |

| **Quarter 4** | | |
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| **Essential Question/Topic** | **Standards** | **Parent Resources** |
| Solve Problems using Angle Relationships | CC.7.G.B.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. | Envision Website & Teacher Google Classroom |
| Solve Problems Involving Circumference of a Circle | CC.7.G.B.4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.<br><br>CC.7.EE.B.4a 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 | Envision Website & Teacher Google Classroom |

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| | fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? | |
| Solve Problems Involving Area of a Circle (compound shapes & shaded area shapes) | CC.7.G.B.4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. | Envision Website & Teacher Google Classroom |
| Describe Cross Sections | CC. 7.G.A.3 describe the two-dimensional figures that result from slicing three-dimensional figures. For example, students might describe the plane sections of right rectangular prisms and pyramids. | Envision Website & Teacher Google Classroom |
| Solve Problems Involving Surface Area (rectangular, triangular and hexagonal prisms) | CC.7.G.B.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.<br><br>CC.7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems. | Envision Website & Teacher Google Classroom |
| Solve Problems Involving Volume (prisms and pyramids) | CC.7.G.B.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.<br><br>CC.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.<br><br>CC.7.EE.B.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.<br><br>CC.7.EE.B.4a 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. | Envision Website & Teacher Google Classroom |
| Understand Likelihood and Probability | CC.7.EE.B.3: solving multi-step real-life and mathematical problems involving positive and negative rational numbers (whole numbers, fractions, decimals) using various strategies, including converting between forms and assessing the reasonableness of answers through estimation and mental math. | Envision Website & Teacher Google Classroom |

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| | CC. 7.SP.C.5: the concept that the probability of a chance event is a number between 0 and 1, where larger numbers indicate a greater likelihood of the event occurring; essentially, it teaches students to understand the scale of probability and how to interpret probability values between 0 and 1. | |
| Understand Theoretical Probability | CC.7.SP.C.6: students are expected to approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency; essentially, learning to estimate probabilities by conducting experiments and analyzing patterns in repeated trials.<br><br>CC.7.RP.2c Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn. | Envision Website & Teacher Google Classroom |
| Understand Experimental Probability | CC.7.SP.6 Investigate chance processes and develop, use, and evaluate probability models. 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. | Envision Website & Teacher Google Classroom |
| Use Probability Models | CC.7.SP.8 Investigate chance processes and develop, use, and evaluate probability models. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. | Envision Website & Teacher Google Classroom |
| Determine Outcomes of Compound Events | CC.7.SP.8a 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. | Envision Website & Teacher Google Classroom |
| Find Probabilities of Compound Events | CC.7.SP.8 Investigate chance processes and develop, use, and evaluate probability models. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation | Envision Website & Teacher Google Classroom |
| Simulate Compound Events | CC.7.SP.8c Design and use a simulation to generate frequencies for compound events. For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood? | Envision Website & Teacher Google Classroom |
| Populations and Samples | CC.7.SP.1 Use random sampling to draw inferences about a population. 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 | Envision Website & Teacher Google Classroom |

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| | produce representative samples and support valid inferences. | |
| Draw Inferences from Data | CC.7.SP.2 Use random sampling to draw inferences about a population. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. | Envision Website & Teacher Google Classroom |
| Make Comparative Inferences About Populations | CC.7.SP.3 Draw informal comparative inferences about two populations. 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. | Envision Website & Teacher Google Classroom |