Southern Cayuga Central School District
Emily Howland Elementary
Curriculum Map 2023-2024

Subject: Math

Grade: 6

Instructional Days: September and October		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Ratios and Unit Rates **Representing and Reasoning about Ratios** 6.RP.A.1 6.RP.A.3a **Collections of Equivalent Ratios** 6.RP.A.3a **Unit Rates** 6.RP.A.2 6.RP.A.3b 6.RP.A.3d **Percent** 6.RP.A.3c	What is a unit rate and how do you calculate it? How do you calculate constant speed? How are ratios used in real world to describe relationships between quantities? How do you convert from one unit to another within the same system? How are percents used in real world situations?	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. Understand the concept of a unit rate a/b associated with a ratio a:b with b $\neq$ 0 (b not equal to zero), and use rate language in the context of a ratio relationship. Use ratio and rate reasoning to solve real-world and mathematical problems. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. Solve unit rate problems. Find a percent of a quantity as a rate per 100. Solve problems that involve finding the whole given a part and the percent, and finding a part of a whole given the percent. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Resources and Major Assessments	
Web Sites Super Teacher Engage NY IXL Math Snacks* Math Playground	Texts and Assessments Eureka Math Squared Assessments Teacher created resources
Vocabulary	**Tools and Representations**
equivalent ratio percent quantity rate ratio unit of measurement unit rate value of a ratio	tape diagram double line graph ratio table coordinate plane

Instructional Days: November		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Dividing Fractions by Fractions 6.NS.A.1 6.NS.B.3 6.NS.B.2 6.NS.B.3 6.NS.B.4	How do you change a mixed number to an improper fraction? Interpret and compute quotients of fractions, and solve How do you convert a mixed number to a decimal and an improper fraction to a decimal? What is the relationship between a fraction and its reciprocal? How do you divide a fraction by a whole number? How do you divide a fraction by another	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions. Fluently divide multi-digit numbers using a standard algorithm. Fluently add, subtract, multiply, and divide multi-digit decimals using a standard algorithm for each operation. Find the greatest common factor of two whole numbers less than or equal to 100. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor other than 1. Find the least common multiple of two whole numbers less than or equal to 12.

	fraction? How do you divide a mixed number by a mixed number? When do we perform operations with fractions in real world situations?	

Resources and Major Assessments

Web Sites		Texts and Assessments
Brain Pop	Super Teacher	Eureka Math Squared Assessments
Engage NY	Math Playground	Teacher created resources
Problem Attic	Math Snacks	
Learn Zillion	IXL	

Vocabulary	**Tools and Representations**
greatest common factor least common multiple multiplicative inverse reciprocal multiple factor prime number composite number	counters tape diagrams area models

Instructional Days: December- January		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Rational Numbers Understanding Positive and Negative Numbers on the Number Line 6.NS.C.5 6.NS.C.6a 6.NS.C.6c Order and Absolute Value 6.NS.C.6c 6.NS.C.7 Rational Numbers and the Coordinate Plane 6.NS.C.6b 6.NS.C.6c 6.NS.C.8	How do you locate rational numbers on a number line? How are integers and absolute value used in real world situations? How are decimals and fractions related? Understand the difference between a terminating and repeating decimal What are equivalent fractions? How do you reduce a fraction using the greatest common factor?	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values. Use positive and negative numbers to represent quantities in real world contexts, explaining the meaning of 0 in each situation. Understand a rational number as a point on the number line. Use number lines and coordinate axes to represent points on a number line and in the coordinate plane with negative number coordinates. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line. Recognize that the opposite of the opposite of a number is the number itself, and that 0 is its own opposite. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane. Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. Find and position integers and other rational numbers on a horizontal or vertical number line. Find and position pairs of integers and other rational numbers on a coordinate plane. Understand ordering and absolute value of rational numbers. Interpret statements of inequality as statements about the relative position of two numbers on a number line.

		Write, interpret, and explain statements of order for rational numbers in real-world contexts. Understand the absolute value of a rational number as its distance from 0 on the number line. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. Distinguish comparisons of absolute value from statements about order. Solve real-world and mathematical problems by graphing points on a coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Resources and Major Assessments

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Engage NY	Math Playground	
Math Snacks	Problem Attic	Teacher created resources
Learn Zillion	IXL	

Vocabulary	**Tools and Representations**
absolute value integer magnitude opposite quadrant	horizontal and vertical number lines coordinate plane

Instructional Days: February		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Expressions and Equations Relationships of the Operations 6.EE.A.3 Special Notations of Operations 6.EE.A.1 6.EE.A.2c Replacing Letters and number 6.EE.A.2c 6.EE.A.4 Expanding, Factoring and Distributing Expressions 6.EE.A.2a 6.EE.A.2b 6.EE.A.3 6.EE.A.4	How can we identify the parts of an expression? How can we identify mathematical properties? How can we create equivalent expressions applying the properties of operations? How can we solve an expression when variables are equal to a given number? How can we translate and write numerical expressions? How can we write and identify inequality solutions on a number line?	Write and evaluate numerical expressions involving whole-number exponents. Write, read, and evaluate expressions in which letters stand for numbers. Write expressions that record operations with numbers and with letters standing for numbers. Identify parts of an expression using mathematical terms (term, coefficient, sum, difference, product, factor, and quotient); view one or more parts of an expression as a single entity. Evaluate expressions given specific values for their variables. Include expressions that arise from formulas in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order (Order of Operations). Apply the properties of operations to generate equivalent expressions. Identify when two expressions are equivalent. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Expressing Operations in Algebraic Form 6.EE.A.2a 6.EE.A.2b Writing and Evaluating Expressions and Formulas 6.EE.A.2a 6.EE.A.2c 6.EE.B.6 Solving Equations 6.EE.B.5 6.EE.B.6 6.EE.B.7 Applications of Equations 6.EE.B.5 6.EE.B.6 6.EE.B.7 6.EE.B.8 6.EE.C.9	How can we solve one step algebraic equations given a variable? How can we solve two-step algebraic equations given a variable?	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem. Understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. Solve real-world and mathematical problems by writing and solving equations of the form x + p = q; x – p = q; px = q; and *xx pp* = q for cases in which p, q, and x are all nonnegative rational numbers. Write an inequality of the form x > c, x ≥ c, x ≤ c, or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of these forms have infinitely many solutions; represent solutions of such inequalities on a number line. Use variables to represent two quantities in a real-world problem that change in relationship to one another.

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<u>Vocabulary</u>	**<u>Tools and Representations</u>**
equation equivalent equations expression solution variable combine like terms terms coefficient constant	bar model geometric representations

Instructional Days: March-May		
Content (What Students Should Know)	**Essential Questions**	**Skills (What Students Should Be Able To Do)**
Area, Surface, Area, and Volume Problems Area of Triangles, Quadrilaterals, and Polygons 6.G.A.1 Polygons on the Coordinate Plane 6.G.A.3 Volume of Right Rectangular Prisms 6.G.A.2 Nets and Surface Area 6.G.A.4 Statistics Understanding Distributions 6.SP.A.1	What is the difference between volume and area? How can we use nets to help us calculate the surface area of three dimensional shapes?	Find area of triangles, trapezoids, and other polygons by composing into rectangles or decomposing into triangles and quadrilaterals. Apply these techniques in the context of solving real-world and mathematical problems. Find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. Draw polygons in the coordinate plane given coordinates for the vertices. Use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. Recognize that a statistical question is one that anticipates variability in the data related to the question and accounts for it in the answers. 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 the method and sample size used to collect data for a particular question is intended to reduce the difference between a population and a sample taken from the population so valid inferences can be drawn

6.SP.A.2 6.SP.B.4 6.SP.B.5b Summarizing a Distribution That is Approximately Symmetric Using the Mean and Mean Absolute Deviation 6.SP.A.2 6.SP.A.3 6.SP.B.4 6.SP.B.5 Summarizing a Distribution That is Skewed Using the Median and the Interquartile Range 6.SP.A.2 6.SP.A.3 6.SP.B.4 6.SP.B.5 Summarizing and Describing Distributions 6.SP.B.4 6.SP.B.5		about the population. Generate multiple samples (or simulated samples) of the same size to recognize the variation in estimates or predictions. Understand that a set of quantitative data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. Recognize that a measure of center for a quantitative data set summarizes all of its values with a single number while a measure of variation describes how its values vary with a single number.

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Vocabulary	Tools and Representations
triangle cube surface area volume height hexagon net prism pyramid	coordinate planes nets prisms rulers

Priority Standard

Standards of Concern

Standards of Concern