JOHNSON CITY SCHOOLS
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Math – Sixth Grade

First Quarter 2024-2025

Week 1…Aug. 5-9… Establish Routines and Procedures, Pre-assessment and Factors
Mathematical Practices (MP1-MP8)–Begin to set-up classroom and problem-solving routines(ongoing).

6.NS.B.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. 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. *For example, express 36 + 8 as 4 (9 + 2).*

Week 2…Aug. 12-16… Factors
6.NS.B.4 cont.

Week 3…Aug. 19-23… Factors and Decimals
6.NS.B.2 Fluently divide multi-digit numbers using a standard algorithm.
6.NS.B.3 Fluently add, subtract, multiply, and divide multi-digit decimals using a standard algorithm and making connections to previous conceptual work with each operation.

Week 4…Aug. 26-30… Decimals
6.NS.B.2, 6.NS.B.3 cont.

Week 5…Sept. 2-6… Decimals and Fractions
6.NS.A.1 Interpret and compute quotients of fractions, and solve real-world and mathematical problems involving division of fractions by fractions (*e.g., connecting visual fraction models and equations to represent the problem is suggested*).

Week 6…Sept. 9-13… Fractions and Numerical Expressions
6.NS.A.1 cont.
6.EE.A.1 Write and evaluate numerical expressions involving whole-number exponents.

Week 7…Sept. 16-20…Numerical Expressions and Ratios
6.EE.A.1 cont.
6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. Make a distinction between ratios and fractions.
6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems (*e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations*).

Week 8…Sept. 23-27... Ratios and Rates
6.RP.A.1, 6.RP.A.3 cont.
6.RP.A.3a 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.

Week 9…Sept. 30-Oct. 4…Ratios and Rates
6.RP.A.1, 6.RP.A.3, 6.RP.3a cont.

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Math – Sixth Grade — Second Quarter 2024-2025

Week 1… Oct. 14-18... Rates and Ratios

6.RP.A.3a cont.
6.RP.A.3b. Solve unit rate problems including those involving unit pricing and constant speed.
6.RP.A.2 Understand the concept of a unit rate *a*/*b* associated with a ratio *a*:*b* with *b* ≠ 0. Use rate language in the context of a ratio relationship.
6.RP.A.3d. Use ratio reasoning to convert customary and metric measurement units (within the same system); manipulate and transform units appropriately when multiplying or dividing quantities.

Week 2… Oct. 21-25... Percents

6.RP.A.3c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
6.NS.C.7 Understand ordering ~~and absolute value~~ of rational numbers.
6.NS.C.7a.* Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram(comparing and ordering fractions, decimals percents only)*.
6.NS.C.7b. Write, interpret, and explain statements of order for rational numbers in real-world contexts.

Week 3… Oct. 28-Nov. 1… Algebraic Expressions and Properties

6.RP.A.3c, 6.NS.C.7 cont.
6.EE.A.2b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.
6.EE.A.2c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).

Week 4… Nov. 4-8… Algebraic Expressions and Properties

6.EE.A.2a Write expressions that record operations with numbers and with variables.
6.EE.A.3 Apply the properties of operations (including, but not limited to, commutative, associative, and distributive properties) to generate equivalent expressions.
6.EE.A.4 Identify when expressions are equivalent (i.e., when the expressions name the same number regardless of which value is substituted into them).

Week 5… Nov.11-15… Algebraic Expressions and Properties

6.EE.A.3, 6.EE.A.4, 6.EE.A.2b cont.
6.NS.B.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. 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.

Week 6… Nov. 18-22… Equations

6.EE.B.5 Understand that a solution to an equation or inequality is the value(s) that makes that statement true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
6.EE.B.6 Use variables to represent numbers and write expressions when solving real-world and mathematical problems; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
6.EE.B.7 Solve real-world and mathematical problems by writing and solving one- step equations of the form $x + p = q$, $px = q$, $x – p = q$, and $x/p = q$ for cases in which p, q, and x are all nonnegative rational numbers and $p \neq 0$.

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Week 7… Nov. 25-29… Equations **Thanksgiving Week**
6.EE.B.5, 6.EE.B.6, 6.EE.B.7 cont.

Week 8… Dec. 2-6… Equations
6.EE.B.6 cont.
6.EE.C.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another.
6.EE.C.9a Write an equation in the form of y = px where y, p, and x are all non-negative and p ≠ 0, to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable.
6.EE.C.9b Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.

Week 9… Dec. 9-13… Area, Surface Area, and Volume
6.EE.A.2c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order.
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; know and apply these techniques in the context of solving real-world and mathematical problems.

Week 10… Dec. 16-20… Finish Area, Surface Area, and Volume
6.EE.A.2c, 6.G.A.1 cont..

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Math – Sixth Grade — Third Quarter 2024-2025

Week 1… Jan. 7-10… Area, Surface Area, and Volume

6.G.A.1 cont.

6.G.A.4 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.

Week 2… Jan 13-17... Area, Surface Area, and Volume

6.G.A.4 cont.

6.G.A.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = lwh and V = Bh where B is the area of the base to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

Week 3… Jan. 20-24… Area, Surface Area and Volume

6.EE.A.2c, 6.G.A.1, 6.G.A.2. 6.G.A.4 cont.

Week 4… Jan. 27-31... Integers and Number Lines

6.NS.C.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real- world contexts, explaining the meaning of 0 in each situation as well as describing situations in which opposite quantities can combine to make 0.

6.NS.C.6a 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. For example, – (–3) = 3, and that 0 is its own opposite.

6.NS.C.6c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

6.NS.C.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.

6.NS.C.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write –3° C > –7° C to express the fact that –3° C is warmer than –7° C.

Week 5… Feb. 3-7… Integers and Number Lines

6.NS.C.5, 6.NS.C.6a, 6.NS.C.6c, 6.NS.C.7a, 6.NS.C.7b cont.

6.NS.C.7c Understand the absolute value of a rational number as its distance from 0 on the number line and distinguish comparisons of absolute value from statements about order in a real-world context. For example, an account balance of -24 dollars represents a greater debt than an account balance - 14 dollars because -24 is located to the left of -14 on the number line.

6.NS.C.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Week 6… Feb. 10-14… The Coordinate Plane and Inequalities

6.NS.C.6c, 6.NS.C.8 cont.

6.G.A.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side that joins two vertices (vertical or horizontal segments only). Apply these techniques in the context of solving real-world and mathematical problems.

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6.NS.C.6b 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.
6.EE.B.5 Understand that a solution to an equation or inequality is the value(s) that makes that statement true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
6.EE.B.6 Use variables to represent numbers and write expressions when solving real-world and mathematical problems; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
6.EE.B.8 Interpret and write an inequality of the form $x > c$, $x < c$, $x \leq c$, or $x \geq c$ which represents a condition or constraint in a real-world or mathematical problem. Recognize that inequalities have infinitely many solutions; represent solutions of inequalities on number line diagrams.

Week 7… Feb.17-21… Inequalities

6.EE.B.5, 6.EE.B.6, 6.EE.B.8 cont.

Week 8… Feb. 24-28… Statistical Measures

6.SP.A.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.
6.SP.A.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its measures of center (mean, median, mode), measures of variation (range only), and overall shape.
6.SP.A.3 Recognize that a measure of center (mean, median, mode) for a numerical 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.
6.SP.B.4 Display a single set of numerical data using dot plots (line plots), box plots, pie charts and stem plots.
6.SP.B.5 Summarize numerical data sets in relation to their context.
6.SP.B.5a Report the number of observations.
6.SP.B.5b Describe the nature of the attribute under investigation, including how it was measured and its units of measurement.
6.SP.B.5c Give quantitative measures of center (median and/or mean) and variability (range) as well as describing any overall pattern with reference to the context in which the data were gathered.

Week 9… Mar.3-7… Statistical Measures

6.SP.A.2, 6.SP.A.3, 6.SP.B.5c cont.

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Math – Sixth Grade — Fourth Quarter 2024-2025

Week 1… Mar 10-14… Statistical Measures
6.SP.A.2, 6.SP.A.3, 6.SP.B.5c cont.

Week 2… Mar. 24-28… Data Displays
6.SP.A.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its measures of center (mean, median, mode), measures of variation (range only), and overall shape.
6.SP.B.4 Display a single set of numerical data using dot plots (line plots), box plots, pie charts and stem plots.
6.SP.B.5d Relate the choice of measures of center to the shape of the data distribution and the context in which the data were gathered.

Week 3… Mar 31-Apr. 4… Data Displays
6.SP.A.2, 6.SP.B.4 cont.
6.SP.B.5c Give quantitative measures of center (median and/or mean) and variability (range) as well as describing any overall pattern with reference to the context in which the data were gathered.

Week 4… Apr. 7-11… Strengthen and Target Lowest Performing Standards

Week 5…Apr. 14-18… Strengthen and Target Lowest Performing Standards

(TCAP Window Open)

Week 6…Apr. 21-25… Strengthen and Target Lowest Performing Standards

(TCAP Window Open)

Week 7…Apr. 28-May 2… Strengthen Fluency: Adding/Subtracting Fractions
Prepare students for 7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.) by **revisiting 5.NF.A.1** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

Week 8…May 5-9…Preview Operations with Integers (+, −, ×, ÷)
7.NS.A.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.
7.NS.A.1c. Apply properties of operations as strategies to add and subtract rational numbers.
7.NS.A.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. **7.NS.A.2c.** Apply properties of operations as strategies to multiply and divide rational numbers.

Week 9…May 12-16…Preview Finding Area and Circumference of Circles
7.G.B.3 Know the formulas for the area and circumference of a circle and use them to solve problems. Explore the relationships between the radius, the circumference, and the area of a circle, and the number π.
Prepare students for 7.G.A.2 Draw triangles with given conditions: three angle measures or three side measures. Notice when the conditions determine a unique triangle, more than one triangle, or no triangle. By **revisiting 4.MD.C.6** Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

Week 10…May 19-23…
Strengthen and Assess Fluency

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