6th Grade Math Curriculum Map Overview

Topic	Focus	Duration
1	Factors and Multiples	2 weeks
2	Decimals	2 weeks
3	Integers and the Coordinate Plane	4 weeks
4	Operations with Fractions	3 weeks
5	Rates and Ratios	4 weeks
6	Measures of Central Tendency	4 weeks
7	Writing and Evaluating Expressions	3 weeks
8	Writing and Solving Equations	2 weeks
9	Writing, Solving and Graphing Inequalities	2 weeks
10	2-D Geometry	2 weeks
11	3-D Geometry	2 weeks

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Focus Topic 1: Factors and Multiples   Duration: 2 weeks

6.NS.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).

Learning Targets	Vocabulary	Instructional Strategies and Differentiation	Instructional Notes and Resources	Assessment
- I can determine the Greatest Common Factor of two whole numbers less than or equal to 100. - I can determine the Least Common Multiple of two whole numbers less than or equal to 12. - I can apply the Distributive Property to rewrite addition problems by factoring out the Greatest Common Factor.	Greatest Common Factor Least common multiple Distributive property Parenthesis Numerical expression Evaluate Equivalent Factors multiples	Prerequisite: Prime/composite numbers, divisibility rules/multiplication and division facts LCM: Line students up and give multiples different colored chips. Discuss who received each color and who got multiple colors. GCF: Use T-charts to organize factors. Use manipulatives to make different arrangements using common factors and the greatest common factor.	Be deliberate about representing the sum of two whole numbers with a common factor as a product of the common factor and a binomial using the distributive property. Apply the distributive property to perimeter. Greatest Common Factor Lesson**:** This lesson is a resource for teachers or for students after participating in lessons exploring GCF. Factoring - Greatest Common Factor (GCF) - First Glance	Whiteboards Checklists Entrance/exit tickets Observation Formative Assessment Tasks: http://map.mathshell.org/materials/tasks.php Teacher-made assessment Sample questions: Explain why 3 is not the GCF of 30 and 36. Which of the following is the LCM of 2 and 12….. Use the GCF to draw flower arrangements for my party using…

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Focus Topic 2: Decimals   **Duration 2 weeks**

6.NS.3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

Learning Targets	Vocabulary	Instructional Strategies and Differentiation	Instructional Notes and Resources	Assessment
• I can add multi-digit decimals using the standard algorithm for each operation with accuracy. • I can subtract multi-digit decimals using the standard algorithm for each operation with accuracy. • I can multiply multi-digit decimals using the standard algorithm for each operation with accuracy. • I can divide multi-digit decimals using the standard algorithm for each operation with accuracy.	Sum Difference Product Quotient algorithm	Prerequisite: Students must understand decimals as part of a whole and their relationship to fractions and percent. Use decimal models for understanding of the answer to decimal operations. Group students using pre-assessment with some groups focusing on the algorithm and other groups using decimal operations to solve problems.	Supporting standards do not have to be directly incorporated into instruction for all students, but for students that have mastered the focus and foundational standards, supporting standards should be incorporated. The following two sites show examples of how to step students through the standard algorithm of division: http://www.coolmath4kids.com/long-division/long-division-lesson-1.html or http://homeschoolmath.net/teaching/md/twodigitdivisor.php	Whiteboards Checklists Entrance/exit tickets Observation Formative Assessment Tasks: http://map.mathshell.org/materials/tasks.php Teacher-made assessment Sample questions: Find the product of 74.5 and 7.103. Find the perimeter of a rectangle with a length of 6.8 and a width of 2.4. How wide is a rectangular strip of land with length ¾ mi and area ½ mile?

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Focus Topic 3: Integers and the coordinate Plane   Duration: 4 weeks

6.NS.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.

6.NS.6. Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
a. 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, e.g., –(–3) = 3, and that 0 is its own opposite.
b. 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.
c. 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.7. Understand ordering and absolute value of rational numbers.
a. 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.*
b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3 oC > –7 oC to express the fact that –3 oC is warmer than –7 oC.*
c. 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. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.*
d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*

6.NS.8. Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute

Learning Targets	Vocabulary	Instructional Strategies and Differentiation	Instructional Notes and Resources	Assessment
• I can use integers to represent quantities in real-world contexts.	Integer Opposite Coordinate	Use origami frogs to determine the distance between positive and	Teach absolute value in context (credit/debit, above/below sea level, account balance,	Whiteboards Entrance/exit tickets Formative

• I can explain the meaning of 0 in real-world contexts. • I can identify a number and its opposite on a number line. • I can identify the quadrant of the coordinate plane a point is based on the sign of the numbers in the point's ordered pair. • I can determine that when two ordered pairs differ only by signs, the location of the points are related by reflections across one or both axes. • I can find and position rational numbers on a number line and on a coordinate plane. • I can represent an inequality on a number line. • I can write statements of order for rational numbers in a real-world context. • I can give the absolute value of a rational number as a distance from 0 on a number line. • I can apply the ideas of absolute value to real-world quantities. • I can solve real-world and mathematical problems by graphing points on a four-quadrant plane. • I can use the coordinates and absolute value to find the distance between points that have the same first or second coordinate.	plane Origin Quadrant x-axis y-axis ordered pair rational number inequality absolute value coordinate positive negative	negative integers. Have students jump themselves on an integer line and record the distance. Integrate math into social studies: Find time between events using timelines with dates BC/AD Find the distance between cities above and below sea levels. Use lunch account balances to relate positive and negative values. Review geometric 2-dimensional figures on the coordinate plane. Smart Notebook: Integers and the Coordinate Plane	temperature Incorporate absolute values in finding the distance between two points on the coordinate plane. Use as an introduction to integer operations: when you subtract a negative, you change both signs to positive because you are adding the absolute values of the two numbers.	Assessment Tasks: http://map.mathshell.org/materials/tasks.php checklist Teacher-made assessment Sample questions: What's the difference in elevation between a city 45 feet below sea level and a city 214 feet above sea level? If the coordinates of a point are opposite of each other, what quadrants of the coordinate plane could the point be located? Name the coordinate pair that is the reflection across the x asix from (3, -5) Billy and Sally are arguing whether -3 degrees is warmer or colder than -7 degrees. Write a letter explaining which temperature is warmer and why. Find the distance between........

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Focus Topic 4: Operations with Fractions   **Duration: 2 weeks**

 6.NS. 1 – Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fractions models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) - ad/bc). How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and are 1/2 square mi?*

Learning Targets	Vocabulary	Instructional Strategies and Differentiation	Instructional Notes and Resources	Assessment
- I can compute quotients of fractions divided by fractions. - I can interpret quotients of fractions. - I can solve word problems involving division of fractions by fractions by using multiple representations.	Fraction Numerator Denominator Equivalent Simplest form Quotient Mixed number Proper fraction Improper fraction	Pre-assessment: multiplication of fractions, converting between mixed numbers and improper fractions, simplifying fractions to group students for remediation. Introduction: ask questions such as: How many halves are in 3? How many thirds are in 5? Draw the models. Advanced learners: choose multiplication or division of fractions to solve problems.	Models for Multiplying and Dividing Fractions This teacher resource gives shows how the area model can be used in multiplication and division of fractions. There is also a section on the relationship to decimals. Models for Multiplying and Dividing Fractions This teacher resource gives shows how the area model can be used in multiplication and division of fractions. There is also a section on the relationship to decimals. Session 9, Part A: Models for the Multiplication and Division of Fractions	Whiteboards Entrance/exit tickets Formative Assessment Tasks: http://map.mathshell.org/materials/tasks.php checklist Teacher-made assessment Draw models to illustrate the answer to fraction operations.

			From the National Library of Virtual Manipulatives: Fractions - Rectangle Multiplication Use this virtual manipulative to graphically demonstrate, explore, and practice multiplying fractions. Fractions - Rectangle Multiplication - NLVM Students may believe that dividing by is the same as dividing in half. Dividing by half means to find how many s there are in a quantity, whereas, dividing in half means to take a quantity and split it into two equal parts. Thus 7 divided by = 14 and 7 divided in half equals 3 . Comparing Fractions View all Illustrations | IMPS	

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Focus Topic 5: Rates and Ratios   **Duration: 4 weeks**

6.RP.1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*

6.RP.2. Understand the concept of a unit rate a/b associated with a ratio *a:b* with *b* ☐ 0, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*

6.RP.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.
a. 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.
b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*
c. 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.
d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Learning Targets	Vocabulary	Instructional Strategies and Differentiation	Instructional Notes and Resources	Assessment
• I can write ratio notation in three ways. • I can explain why order matters when writing a ratio. • I can use ratio language to describe the relationship between two quantities. • I can create tables of equivalent ratios relating quantities. • I can find missing values in a table of equivalent ratios. • I can plot pairs of values that	Ratio Percent Proportion Double number line diagram Equivalent ratios Tape diagram Unit rate	Smart notebook: ratios and proportions Introduction: choosing a daycare Make ratios of things in the classroom such as boys to girls, doors to windows, chairs to desks. Find the best buy at different stores using unit rates.	Unit rate: per one Something Fishy: Students will estimate the size of a large population by applying the concepts of ratio and proportion through the capture-recapture statistical procedure. http://www-tc.pbs.org/teachers/mathline/les	Whiteboards Entrance/exit tickets Formative Assessment Tasks: http://map.mathshell.org/materials/tasks.php checklist Teacher-made assessment

represent equivalent ratios on a graph. • I can use tables to compare ratios given a real-world or mathematical problem. • I can solve real-world problems involving unit pricing using tables of equivalent ratios, tape diagrams, double-line diagrams or equations. • I can solve real-world problems involving constant speed. • I can find a percent of a number as a rate per 100 given a real-world or mathematical problem. • I can find the whole given a part and a percent. • I can apply ratio reasoning to convert measurement units.		Integrate math into social studies: map scale using proportions. Real life: find tax, tip and discounts using proportions and percent. Use 100 grids for modeling percents. Compare and order fractions, decimals and percent.	sonplans/pdf/msmp/somethingfishy.pdf How Many Noses Are in Your Arm? Students will apply the concept of ratio and proportion to determine the length of the Statue of Liberty's torch-bearing arm. http://www-tc.pbs.org/teachers/mathline/lessonplans/pdf/msmp/noses.pdf If You Hopped Like a Frog This book introduces the concepts of ratio and proportion by comparing what humans would be able to do if they had the capabilities of different animals. Ohio Resource Center > for Mathematics Educators > Math Bookshelf > Measurement PARCC: http://www.parcconline.org/sites/parcc/files/Grade6-ProportionsofInstruments.pdf	Sample Questions: The recipe asks for ¼ cup of sugar for every 2 cups of flour. What is the ratio of sugar to flour? Explain the difference between the ratio of one head to four feet and a unit rate. Write three fractions equivalent to 2/5. Find the m issing fraction in the table. John is traveling at a rate of 8 miles for each 30 minutes. At this rate how long will it take him to travel 20 miles?

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Focus Topic 6: Measures of Central Tendency   **Duration: 4 weeks**

6.SP.1. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.
For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.

6.SP.2. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

6.Sp.3. Recognize that a measure of center 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.4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

6.SP.5. Summarize numerical data sets in relation to their context, such as by:
a. Reporting the number of observations.
b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Learning Targets	Vocabulary	Instructional Strategies and Differentiation	Instructional Notes and Resources	Assessment
• I can recognize that a measure of center for a data set (mean, median, and mode) describes its values with a single number. • I can recognize that a measure of variance for a data set (range, mean absolute deviation,	Mean Median Mode Range Box plot Dot plot Line plot Histogram Inter-quartile	Origami frog jumping competition: analyze the results and complete a line plot and histogram of the data. http://www.wikihow.com/Make-an-Origami-Jumping-Frog	From the National Council of Teachers of Mathematics, Illuminations: Numerical and Categorical Data. In this unit of three lessons, students formulate and refine questions, and collect, display and analyze data. http://illuminations.nctm.org/Le	Whiteboards Entrance/exit tickets Formative Assessment Tasks: http://map.mathshell.org/materials/tasks.php checklist Teacher-made

interquartile range) describes its values with a single number. • I can recognize that data can have variability. • I can recognize a statistical question by checking for variability in the answers to the question. • I can recognize that a set of data for a statistical question has a distribution. • I can describe a distribution by its measures of center, spread and shape. • I can create a dot plot (line plot) to display a set of numerical data. • I can create a histogram to display a set of numerical data. • I can create a box plot to display a set of numerical data.	range Absolute deviation Measures of center Statistical variability Cluster Gap Outlier Frequency table Symmetrical skew	Review line graphs, bar graphs and circle graphs by incorporating questions with percents for advanced students and remediating with students who have difficulties. SmartNotebook: data analysis, measures of central tendency, frog jumping	sson.aspx?id=1363 Students can use the appropriate applet from this page of virtual manipulatives to create graphical displays of the data set. This provides an important visual display of the data without requiring students to spend time hand-drawing the display. Classroom time can then be spent discussing the patterns and variability of the data. NLVM 6 - 8 - Data Analysis & Probability Manipulatives Hollywood Box Office This rich problem focuses on measures of center and graphical displays. Ohio Resource Center > Promise > Math > Hollywood Box Office Wet Heads In this lesson, students create stem-and-leaf plots and back-to-back stem-and-leaf plots to display data collected from an investigative activity. http://www.pbs.org/teachers/mathline/lessonplans/msmp/wetheads/wetheads_procedure.shtm Stella's Stumpers Basketball Team Weight: This problem situation uses the mean to determine a missing data	assessment Sample questions: When a large number is added to a distribution, does the mean or median change the most, and why? Name two sets of data that have the same median and very different variation. Use the line plot given to create a box plot. By looking at the data set, explain the number of observations that took place. Calculate the interquartile range from a box plot that is shown.

			element. http://ohiorc.org/for/math/stella/problems/problem.aspx?id=438	
			Learning Conductor Lessons. Use the interactive applets in these standards-based lessons to improve understanding of mathematical concepts. Scroll down to the statistics section for your specific need. Ohio Resource Center > for Mathematics Educators > Learning Conductor > Lessons	
			From the National Council of Teachers of Mathematics, Illuminations: Height of Students in our Class. This lesson has students creating box-and-whisker plots with an extension of finding measures of center and creating a stem-and-leaf plot. Heights of Students in Our Class	

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Focus Topic 7: Writing and Evaluating Expressions   Duration: 3 weeks

6.EE.1. Write and evaluate numerical expressions involving whole-number exponents.

6.EE.2. Write, read, and evaluate expressions in which letters stand for numbers.
a. Write expressions that record operations with numbers and with letters standing for numbers. EX. express the calculation "Subtract y from 5" as $5 – y$.
b. 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. For example, describe the expression $2 (8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.
c. 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). For example, use the formulas $V = s3$ and $A = 6 s2$ to find the volume and surface area of a cube with sides of length $s = 1/2$.

6.EE.3. Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression $3 (2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6 (4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.

6.EE. 4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands

6.EE.6. 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.
for.

Learning Targets	Vocabulary	Instructional Strategies and Differentiation	Instructional Notes and Resources	Assessment
• I can write numerical expressions involving whole-number exponents. • I can evaluate numerical expressions involving whole-number exponents. • I can write algebraic expressions with numbers and letters standing for numbers.	Algebraic expressions Coefficient Entity Equivalent Factor Numerical expressions Operations	Teach exponents before expressions. Use variables as exponents. Review symbols for operations in algebra, such as the dot or parenthesis for multiplication and the fraction line for division.	http://mathpractices.edc.org/view-all-illustrationsConsecutive Sums http://mathpractices.edc.org/view-all-illustrationsSolving Problems by Creating Expressions—Dollar Bills	Whiteboards Entrance/exit tickets Formative Assessment Tasks: http://map.mathshell.org/materials/tasks.php checklist

• I can identify parts of an expression using mathematical terms. • I can identify parts of an expression as a single entity. • I can evaluate specific values for variables in real-world problems. • I can apply order of operations when there are no parentheses. • I can evaluate expressions that arise from formulas in real-world problems. • I can apply the properties of operations to generate equivalent expressions. • I can recognize that a variable can represent an unknown number. • I can write expressions with numbers and variables when solving a real-world or mathematical problem.	Product Quotient Sum Term Difference Variables Exponents Commutative Associative distributive	From the National Library of Virtual Manipulatives: Online algebra tiles that can be used to represent expressions and equations. algebra tiles Online game Late Delivery. In this game, the student helps the mail carrier deliver five letters to houses with numbers such as 3(a + 2). http://education.ohio.gov/getattachment/Topics/Academic-Content-Standards/Mathematics/Grade_6_Math_Model_Curriculum_October2013.pdf.aspx	http://mathpractices.edc.org/view-all-illustrationsWriting Numerical Expressions—Hexagon Tables Strings activity (smartnotebook) to write expressions	Teacher-made test Sample Questions: What is the value of… Which of the following expressions is equivalent to half the value of x? How many terms re in the expression… Find the surface area of a cube with sides = 9 inches. Using the distributive property, write an equivalent expression to 12-4x

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Focus Topic 8: Writing and Solving Equations   Duration: 3 weeks

6.EE.5. 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.

6.EE.7. Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.

6.EE.9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.

Learning Targets	Vocabulary	Instructional Strategies and Differentiation	Instructional Notes and Resources	Assessment
- I can recognize solving an equation as a process of answering a question. - I can show that the solution set of an equation the values that make it true. - I can use substitution to determine whether a given number in a specified set makes an equation true. - I can write and solve equations for real-world or mathematical problems containing one unknown. - I can use variables to represent two quantities in a real-world problem that change in	Dependent variable Independent variable Equation Inequality Rational numbers Set substitution	SmartNotebook: algebraic equations, writing equations Create a table using an algebraic equation (ex. Rate of pay, make a table showing 1-5 hours.)	Use graphic organizers as tools for connecting various representations. Pedal Power – NCTM illuminations lesson on translating a graph to a story. http://education.ohio.gov/getattachment/Topics/Academic-Content-Standards/Mathematics/Grade_6_Math_Model_Curriculum_October2013.pdf.aspx	Whiteboards Entrance/exit tickets Formative Assessment Tasks: http://map.mathshell.org/materials/tasks.php checklist Teacher-made test

relationship to one another. • I can write an equation to express one quantity (dependent variable) in terms of the other quantity (independent variable.) • I can analyze the relationship between the dependent variable and independent variable using tables and graphs.				

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Focus Topic 9: Writing, Solving, and Graphing Inequalities   Duration: 2 weeks

6.EE.5. 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.

6.EE.8. Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Learning Targets	Vocabulary	Instructional Strategies and Differentiation	Instructional Notes and Resources	Assessment
• I can recognize solving an inequality as a process of answering a question. • I can show that the solution set of an inequality as the values that make it true. • I can use substitution to determine whether a given number in a specified set makes an inequality true. • I can represent solutions to inequalities with infinitely many solutions on number line diagrams.	Infinite Inequality Number line diagram Set Solution Substitution variable	Connect to real world: Write an inequality expression that represents the legal age to vote in our state. If I have 3 dollars in my lunch account, graph how much I can spend. Struggling students: Choose solutions from a given set of numbers. Advanced students: incorporate fractions and decimals.	Students substitute solutions by choosing a number on their graph to see if it is true. Show the difference between graphing an equation (one solution) and graphing an inequality (infinite solutions)	Whiteboards Entrance/exit tickets Formative Assessment Tasks: http://map.mathshell.org/materials/tasks.php checklist Teacher-made test

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Focus Topic 10: 2-D Geometry   Duration: 2 weeks

6.G.1. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

6.G.3. 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.

Learning Targets	Vocabulary	Instructional Strategies and Differentiation	Instructional Notes and Resources	Assessment
• I can find the area or triangles by decomposing rectangles. • I can find the area of rectangles by composing triangles. • I can find the area of special quadrilaterals and polygons by decomposing/composing triangles and rectangles to solve mathematical and real world problems.	Area plane Perimeter Compose Coordinate Decompose Polygon Quadrilateral Rectangle Square Triangle Vertex Side Equilateral Isosceles Scalene Right Obtuse Acute Parallelogram Trapezoid Rhombus Parallel perpendicular	Use floor plans as a real world situation for finding the area of composite shapes. Design a playground activity.	Illuminations lessons on area http://mathpractices.edc.org/view-all-illustrationsIsosceles Triangles on a Geoboard http://mathpractices.edc.org/view-all-illustrationsFinding Parallelogram Vertices http://mathpractices.edc.org/view-all-illustrationsFinding Triangle Vertices	Whiteboards Entrance/exit tickets Formative Assessment Tasks: http://map.mathshell.org/materials/tasks.php checklist Teacher-made test

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Focus Topic 11: 3-D Geometry   **Duration: 2 weeks**

6.G.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 $V = l\,w\,h$ and $V = b\,h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

6.G.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.

Learning Targets	Vocabulary	Instructional Strategies and Differentiation	Instructional Notes and Resources	Assessment
- I can calculate the volume of a right rectangular prism. - I can apply volume formulas for right rectangular prisms to solve real-world and mathematical problems involving right rectangular prisms with fractional edge lengths. - I can model the volume of a right rectangular prism. - I can represent three-dimensional figures using nets made up of rectangles and triangles. - I can use nets to find the surface area of thre-dimensional figures. - I can solve real-world and mathematical problems involving three-dimensional figures using nets.	Net Pyramid Prism Rectangular prism Triangular prism Surface area Volume Face Edge vertex	Contest: make the package with the greatest volume using the same surface area. Lesson on 3-D figures: http://map.mathshell.org.uk/materials/lessons.php	Use surface and area to solve problems (performance task) http://map.mathshell.org.uk/materials/tasks.php?taskid=273&subpage=expert Volume performance task: http://map.mathshell.org.uk/materials/tasks.php?taskid=284&subpage=expert	Whiteboards Entrance/exit tickets Formative Assessment Tasks: http://map.mathshell.org/materials/tasks.php checklist Teacher-made test