Unit 1 Ratios and Proportions

Unit 1A- Understanding ratio concepts RP.1 and RP.2 **TEST 8/27**

6.RP.1- Describe a ratio relationship between two quantities (in lowest terms) in three forms.

6.RP.2- Understand the concept of a unit rate.

 MAP Shell Lesson Using Proportional Reasoning

 <https://www.map.mathshell.org/lessons.php?unit=6230&collection=8>

Unit 1B- Use ratio and rate reasoning to solve problems RP.3 **TEST 9/6**

 6.RP.3- a.) Make tables of equivalent ratios relating quantities and find missing values in tables, plot values from tables and compare ratios from tables. b.) Solve rate problems involving unit pricing and constant speed. c.) Use ratio reasoning to convert measurements.

 Big Ideas Math Lesson Pg. 128 What’s the best deal?

 Big Ideas Math Lesson Pg. 136 How fast do you walk?

Unit 2 The Number System

Unit 2A- Apply and extend previous understandings of multiplication and division to divide fractions by fractions NS.1 **TEST 10/9**

 6.NS.1- Interpret and compute quotients of fractions and solve word problems involving division of fractions.

 MAP Shell Lesson Interpreting Multiplication and Division

 <https://www.map.mathshell.org/lessons.php?unit=6115&collection=8>

Unit 2B- Compute fluently with multi digit numbers and find LCM and GCF NS.2, NS.3, NS.4 **TEST 10/9**

 6.NS.2- Divide multi-digit numbers, convert a rational number to a decimal using long division, know that the decimal forms of a rational number terminates in 0s or eventually repeats.

 MAP Shell Lesson Using Standard Algorithms for Number Operations

 <https://www.map.mathshell.org/lessons.php?unit=6105&collection=8>

 MAP Shell Lesson Converting Fractions, Decimals, and Percents

 <https://www.map.mathshell.org/lessons.php?unit=6120&collection=8>

 6.NS.3- Add, subtract, multiply, and divide multi-digit decimals using the standard algorithm.

 6.NS.4- Use distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of two whole numbers with no common factors.

MAP Shell Lesson Finding Factors and Multiples <https://www.map.mathshell.org/lessons.php?unit=6110&collection=8>

Unit 2C- Apply and extend previous understandings of numbers to the system of rational numbers NS.5, NS.6, NS.7, NS.8 **TEST 11/20**

 6.NS.5- Positive and negative numbers are used together to describe quantities having opposite directions or values; use positive and negative numbers to describe quantities in the real world.

 6.NS.6- Understand a rational number as a point on the number line and extend number line diagrams and coordinate axes. Place positive and negative numbers on the number line or on a coordinate plane. Understand that positives and negatives are opposites because they are on opposite sides of the number line.

 Big Ideas Math Lesson Pg. 94 Understanding negative numbers through symmetry

 6.NS.7- Understand ordering and absolute value of rational numbers. Interpret statements of inequality as statements about the position of two numbers on a number line. Write interpret and explain statements of order for rational numbers and understand the absolute value of a rational number is its distance from 0 on the number line.

 Big Ideas Math Lesson Pg. 101 Number line bounce

 6.NS.8- Solve real world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Find distance between points using absolute value.

 Big Ideas Math Lesson Pg. 107 Investigating the coordinate plane

Unit 3 Understanding Expressions and Equations

Unit 3A- Apply and extend previous understandings of arithmetic to algebraic expressions EE.1, EE.2, EE.3, EE.4 **TEST 12/19**

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

 6.EE.2- Write expressions that record operations with numbers and with letters standing for numbers. Identify parts of an expression using mathematical terms. Evaluate expressions for specific values of their variables. Perform arithmetic operations, including whole number exponents, in the conventional order when there are no parenthesis to specify a particular order.

 Big Idea Math Lesson Pg. 195 Cuisenaire rods

 6.EE.3- Apply the properties of operations to generate equivalent expressions.

 6.EE.4- Identify when two expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.

 Big Ideas Math Lesson Pg. 204 Math Mobiles

Unit 3B- Reason and solve one variable equations EE. 5, EE.6, EE.7, EE.8 **TEST 2/5**

 6.EE.5- Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

 6.EE.6- Use variables to represent numbers and write expressions when solving a real-world or mathematical problem.

 6.EE.7- Solve real world and mathematical problems by writing and solving equations (one step).

 Big Ideas Math Lesson Pg. 215 Radial Patterns

 MAP Shell Lesson Modeling Relationships: Car Skid Marks

 <https://www.map.mathshell.org/lessons.php?unit=6210&collection=8>

 6.EE.8- Write an inequality and represent them on a number line.

 MAP Shell Lesson Evaluating Statements About Number Operations

 <https://www.map.mathshell.org/lessons.php?unit=6225&collection=8>

Unit 3C- Represent and analyze quantitative relationships between independent and dependent variables EE. 9 **TEST 2/14**

 6.EE.9- Identify independent and dependent variables and write equations to express one quantity as dependent on the other.

Unit 4 Geometry

Unit 4- Solve real world problems involving area, surface area, and volume G.1, G.2, G.3, G.4 **TEST 3/19**

 6.G.1- Find the area of right triangles, other triangles, special quadrilaterals and polygons by composing into rectangles or decomposing into triangles and quadrilaterals.

 Big Ideas Math Lesson Pg. 26 Finding the area of irregular polygons

 MAP Shell Lesson Optimizing Coverage

 <https://www.map.mathshell.org/lessons.php?unit=6305&collection=8>

 6.G.2- Find the volume of right rectangular prisms with rational number edge lengths. Apply the formula v = lwh and v = Bh to find volumes.

 Bid Ideas Math Lesson Pg. 46 Visualizing the volume of solids

 MAP Shell Lesson Using Space Efficiently: Packing a Truck

 <https://www.map.mathshell.org/lessons.php?unit=6310&collection=8>

 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 or second coordinate.

 MAP Shell Lesson Using Coordinates to Interpret and Represent Data

 <https://www.map.mathshell.org/lessons.php?unit=6320&collection=8>

 6.G.4- Classify 3-D figures incluing cubes, prisms, pyramids, cones, and spheres. Emphasis on classifying shapes by their attributes.

Unit 5 Statistics and Probability

Unit 5A- Develop an understanding of statistical variability SP.1, SP.2, SP.3 **TEST 4/3**

 6.SP.1- Recognize a statistical question as one that anticipates variability in data related to the question and accounts for it in the answers.

 6.SP.2- Understand that a set of numerical data has a distribution which can be described by its center, shape, and spread.

 6.SP.3- Recognize that a measure of center (mean, median, mode) for a numerical set of data summarizes all of its values with a single number to describe a typical value, while a measure of variation (range, IQR, MAD) describes how the values in the distribution vary.

 Big Ideas Math Lesson Pg. 178 What does mean, mean?

Unit 5B- Summarize and describe distributions SP.4, SP.5 **TEST 4/29**

 6.SP.4- Display the distribution of numerical data in plots on a number lines, including dot plots, histograms, and box plots.

 6.SP.5- Summarize numerical data sets in relation to their context (number of observations, describing the nature of the attribute under investigation, determining quantitative measures of center, describing distributions of numerical data using terms such as skew left skew right cluster mode and outlier)

Big Ideas Math Lesson Pg. 167 Exploring shape, center and spread of data by examining hurricane data