

Suggested Timeframe	Objective(s)	Concepts
Variables and Patters (15 Days)	SWBAT identify quantitative variables in SWBAT recognize situations where changes SWBAT describe patterns of change shown SWBAT construct tables and graphs to SWBAT observe how a change in SWBAT use algebraic symbols to write and SWBAT use table, graphs, and equations to OPTIONAL: SWBAT use graphing calculators	Creating a table and graph, determining independent and dependent variables, interpreting data, and analyzing tables and graphs
Moving Straight Ahead (12 Days)	SWBAT recognize problem situations in	Linear relationships in tables
	SWBAT construct tables, graphs, and	
	SWBAT understand the connections between linear equations and the patterns in the tables and graphs of those equations: rate of change, slope, and y-intercept	
	SWBAT solve linear equations through tables, graphs, and equations.	
Stretching and Shrinking (13 Days)	SWBAT identify simialr figures by comparing corresponding parts.	Finding and comparing similar figures, corresponding sides and angles, ratios and scale factors of similar figures, and finding missing lengths and heights.

SWBAT use scale factors and ratios to describe relationships among the side lengths of similar figures.

SWBAT construct similar polygons.

SWBAT draw shapes on coordinate grids and then use coordinate rules to stretch and shrink those shapes.

SWBAT predict the ways that stretching or shrinking a figure affect lengths, angle measures, perimeters, and areas.

	<p>SWBAT use the properties of similarity to calculate distances and heights that can't be directly measured.</p>	
<p>Accentuate the Negative (20 Days)</p>	<p>SWBAT use appropriate notation to indicate positive and negative numbers.</p> <p>SWBAT locate rational numbers (pos. and neg. rational numbers) on a number line as well as compare and order them.</p> <p>SWBAT develop algorithms for adding, subtracting, multiplying, and dividing positive and negative numbers.</p> <p>SWBAT describe the relationship between a rational number and its opposite and its inverse.</p> <p>SWBAT write and use fact families.</p> <p>SWBAT use order of operations to simplify expressions.</p> <p>SWBAT apply the Commutative and Distributive properties.</p> <p>SWBAT graph in four quadrants.</p>	<p>Comparing and ordering positive and negative numbers, adding and subtracting integers, multiplying and dividing integers, order of operations, and distribution property.</p>
	<p>SWBAT use positive and negative numbers to model and answer questions about problem situations</p>	

Filling and Wrapping (17 Days)

SWBAT compare and contrast filling and wrapping, ie. volume vs. surface area.

Surface area and volume of rectangular prisms, volume of prisms and cylinders, surface area of prisms and cylinders, comparing volumes and surface areas, and applying scale factors to surface area and volume.

SWBAT develop strategies for finding the volume and surface area of objects

SWBAT explore patterns among the volumes of cylinders, cones, and spheres.

SWBAT design and use nets for rectangular prisms and cylinders to calculate surface area.

SWBAT explore patterns and develop strategies for finding volumes of 3-D shapes.

SWBAT use surface area and volume to solve a variety of real-world problems.

<p>What do you Expect? (15 Days)</p>	<p>SWBAT apply the usefulness of probabilities to appropriate real-world phenomena</p> <p>Review strategies for identifying possible outcomes and analyzing probabilities, such as using lists or tree diagrams.</p> <p>SWBAT explain fairness in a game of chance and distinguish between likely and no-equally likely events</p> <p>SWBAT analyze situations that involve binomial outcomes</p> <p>SWBAT develop strategies for finding both experimental and theoretical probabilities</p> <p>SWBAT compare and contrast experimental and theoretical probabilities</p> <p>SWBAT analyze situations that involve two stages by using area models</p> <p>SWBAT determine the expected value of a probability situation</p> <p>SWBAT use probability and expected value to make a decision.</p>	<p>Interpreting experimental and theoretical probabilities, analyzing probabilities, comparing expected values, fair vs. unfair, area models</p>
<p>Data Distributions (20 Days)</p>	<p>SWBAT develop strategies for comparing distributions of data</p> <p>SWBAT make informed decisions about which graph and which of the measures of center (mean, median, mode) and range may be used to describe a distribution of data</p>	<p>Finding data distributions, finding mean, median, mode, comparing distributions</p>

SWBAT identify sources of variability, including natural variability and variability that results from errors in measurement.

SWBAT understand and use counts or percents to report frequencies of occurrence of data.

SWBAT use the shape of a distribution to estimate the location of the mean and the median

SWBAT compare the distributions of data sets using their centers, variability, and shape.

SWBAT represent distributions of data using line plots, bar graphs, stem-and-leaf plots, and coordinate graphs

Standard(s)	Standards for Math Practice	Vocabulary
<p><b>CC.2.2.7.B.3</b>  M07.B-E.2.1.1 Apply properties of operations to solve word problems involving rational numbers in real-world contexts.</p> <p>M07.B-E.2.2.1 Solve word problems involving addition, subtraction, multiplication, and division of rational numbers in real-world contexts.</p> <p>M07.B-E.2.2.2 Solve word problems involving addition, subtraction, multiplication, and division of rational numbers in real-world contexts.</p> <p>M07.B-E.2.3.1 Determine the unknown in a proportion.</p>	<p><u>1, 2, 4, 5, 6, 7, 8</u></p>	<p>Coordinate graph, coordinate pair, dependent/independent variable, equation, formula, pattern, relationship, rule, scale, table, variable, constant of proportionality, x- and y-axis.</p>
<p><b>CC.2.2.7.B.1</b>  M07.B-E.1.1.1 - Apply properties of operations to solve real-world problems.</p> <p><b>CC.2.2.7.B.3</b>  M07.B-E.2.1 - Solve multi-step real-world and mathematical problems posed with positive and negative rational numbers. M07.B-E.2.1.1 - Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate.</p>	<p><u>1, 2, 4, 5, 6, 7, 8</u></p>	<p>coefficient, constant term,</p>
<p><b>CC.2.1.7.E.1</b>   M07.A-N.1.1.1 Apply properties of operations to add and subtract rational numbers, including real-world contexts.</p>	<p><u>1, 2, 3, 4, 5, 6, 7, 8</u></p>	<p>complementary angles, corresponding, equivalent ratios, image, midpoint, nested triangles, ratio, rep-tile, scale factor, similar, supplementary angles.</p>

M07.A-N.1.1.2 Represent addition and subtraction on a horizontal or vertical number line.

M07.A-N.1.1.3 Apply properties of operations to multiply and divide rational numbers, including real-world contexts; demonstrate that the decimal form of a rational number terminates or eventually repeats.

**CC.2.1.7.D.1**

M07.A-R.1.1.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.

M07.A-R.1.1.2 Determine whether two quantities are proportionally related (e.g., by testing for equivalent ratios in a table, graphing on a coordinate plane and observing whether the graph is a straight line through the origin).

M07.A-R.1.1.3 Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

M07.A-R.1.1.5 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.

M07.A-R.1.1.6 Use proportional relationships to solve multi-step ratio and percent problems

**CC.2.3.7.A.2** M07.C-G.1.1.3

M07.C-G.1.1.4

M07.C-G.1.1.1 Solve problems involving scale drawings of geometric figures, including finding length and area.

<p><b>CC.2.1.7.E.1</b> M07.A-N.1.1.1 Apply properties of operations to add and subtract rational numbers, including real-world contexts.M07.A-N.1.1.2 Represent addition and subtraction on a horizontal or vertical number line. M07.A-N.1.1.3 Apply properties of operations to multiply and divide rational numbers, including real-world contexts; demonstrate that the decimal form of a rational number terminates or eventually repeats.</p>	<p><u>1, 2, 5, 6, 7, 8</u></p>	<p>Inverse, reciprocal, multiplicative opposite, rational number, integer, opposite, absolute value, algorithm, decimal, terminating and repeating, rational numbers, irrational numbers, real numbers, expressions, quadrant, properties of multiplication and addition (Distributive, Associative, Commutative).</p>

**CC.2.3.7.A.1**

1, 2, 4, 5, 6, 7, 8

base, cone, cube, cylinder,  
edge, face, height, net,  
oblique prism, rectangular  
prism, pyramid, sphere,  
surface area, unit cube,  
volume.

M07.C-G.2.1.1 - Identify and use properties of supplementary, complementary, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure.  
M07.C-G.2.1.2 - Identify and use properties of angles formed when two parallel lines are cut by a transversal (e.g., angles may include alternate interior, alternate exterior, vertical, corresponding).

M07.C-G.2.2.1 - Find the area and circumference of a circle. Solve problems involving area and circumference of a circle(s).

M07.C-G.2.2.2 - 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.

<p><b>CC.2.4.7.B.3:</b> M07.D-S.3.1.1 - Predict or determine whether some outcomes are certain, more likely, less likely, equally likely, or impossible M07.D-S.3.2.1 - Determine the probability of a chance event given relative frequency. Predict the approximate relative frequency given the probability. M07.D-S.3.2.2 - Find the probability of a simple event, including the probability of a simple event not occurring. M07.D-S.3.2.3 - Find probabilities of independent compound events using organized lists, tables, tree diagrams, and simulation.</p>	<p>1, 2, 3, 4</p>	<p>area model, binomial probability, tree diagram, theoretical probability, outcomes, fair game, law of large numbers, experimental, random, probability, equally likely, event, trial, probable, odds, expected value, payoff, sample space.</p>
<p><b>CC.2.4.7.B.2</b></p> <p>M07.D-S.2.1.1 - Compare two numerical data distributions using measures of center and variability. M07.D-S.2.1 - Use statistical measures to compare two numerical data distributions.</p>	<p><u>1, 2, 4, 5, 6</u></p>	<p>bar graph, categorical data, coordinate graph, line plot, mean, median, mode, range, numerical data, stem-and-leaf plots, attribute, counts, distribution, measures of center, ordered value bar graph, value of an attribute, outliers, scatter plot, range, variability of a set of numerical data.</p>

**CC.2.4.7.B.1**

M07.D-S.1.1.1 - Determine whether a sample is a random sample

given a real-world situation.

M07.D-S.1.1.2 - Use data from a random sample to draw inferences about a population with an unknown

characteristic of interest.

M07.D-S.1.1 - Use random samples.