Math 6 Curriculum Guide

First Quarter Curriculum Update:

1) Number, Number **Sense & Operations:**

Number & number systems

a) Decompose and recompose whole numbers using factors and exponents
b) Prime Factorization using GCF, LCM and factor trees
c) Recognizing rational numbers
d) Describe what it means to find a specific percent of a number
e) Relate concepts of ratio, proportion and %, by using models and pictures
f) Knowing %'s < 1 and > 100

Meaning of operations

a) Using order of operations (PEMDAS) with exponents, decimals and rational numbers
b) Use simple expressions involving integers to solve problems: what is the net gain/loss
c) Using multiplication and division situations involving fractions and decimals with visual representations
d) Use examples of how ratios are used to represent comparisons like; part-to-part, part-to-whole, whole-to-part
e) Recognize that a quotient may be larger than the dividend when the divisor is a fraction; ex. $10 \div ½ = 20$

Computation & Estimation

a) Using manipulatives or diagrams to perform fraction and decimal computations
b) Develop and analyze algorithms for computing with fractions and decimals, and showing fluency
c) Estimating reasonable solutions to problems involving fractions, and decimals
d) Be able to use proportional reasoning, ratios, and %'s to determine if solutions are reasonable
e) Determine the % of a number and solve related problems, such as markdown, and discounts

2nd Quarter Curriculum Update:

2) Measurement:

Measurement Units

a) Understand and describe the difference between surface area and volume

Using Measurement Techniques & Tools

a) Use strategies to find formulas for circumference and area of circles; and to determine the area of sectors, e.g., ½ circle, 2/3 circle, 1/3 circle, & ¼ circle
b) Estimating perimeter or circumferences and area for circles, triangles, and quadrilaterals
c) Estimate surface area and volume for prisms and cylinders
d) Determine which measure (perimeter, area, surface area, volume) matches the context for a problem situation
e) Understand the differences between perimeter and area
f) Describe what happens to the perimeter and area of a two-dimensional shape when the measurements of the shape are changed; length of sides are doubled

3) Geometry:

Characteristics & Properties

a) classify & describe 2 dimensional and 3-D geometric figures and objects using their properties
b) Recognize and use standard language to define geometric vocabulary; vertex, face, altitude, etc.
c) Use multiple classification criteria to classify triangles; ex. Right scalene triangle
d) Identify and define relationships between planes; i.e., parallel, perpendicular and intersecting

Spatial Relationships

a) predict and describe size, position, and orientation of 2dimensional shapes after transformations such as reflections, translations, rotations, & dilations

Transformations & Symmetry

a) draw similar figures that model proportional relationships

Visualization and Geometric Models

a) build 3-D objects with cubes and sketch the two-dimensional representations of each side;i.e., projections sets, graph sketches

3rd Quarter Curriculum Update:

4) Patterns, Functions, & Algebra:

Use Patterns, Relations, & Functions

a) represent and analyze patterns, rules and functions, using physical materials, tables and graphs
b) Use words and symbols to describe numerical and geometric patterns, rules and functions

Use Algebraic Representations

a) Recognize and generate equivalent forms of algebraic expressions, and explain how the commutative, associative and distributive properties can be used to generate equivalent forms
b) Solve simple linear equations and inequalities using physical models, paper and pencil, tables, and graphs
c) Produce and interpret graphs that represent the relationship between two variables
d) Evaluate simple expressions by replacing variables with given values, and use formulas in problem-solving situations

Analyze Change

a) Identify and describe situations with constant or varying rates of change, and compare them
b) Use technology to analyze change; showing rate of change in graphs

4th Quarter Curriculum Update:

Data Analysis & Probability:

Data Collection

a) Read, construct and interpret line graphs, circle graphs, & histograms
b) Select, create and use graphical representations that are appropriate for the type of data collected
c) Compare representations of the same data in different types of graphs, such as a bar graph, and circle graph

Statistical Methods

a) Understand the different info provided by measures of center (mean, median, and mode) and measures of spread (range)
b) Describe the frequency distribution of a set of data, as shown in a histogram or frequency table, by general appearance or shape; ex. Number of modes, middle of data, level of symmetry, and outliers
c) Make logical inferences from statistical data

Probability

a) Design an experiment to test a theoretical probability and explain how the results vary