

GRADE 7 MATHEMATICS

4 hours per week, all year

(Students may take Pre-Algebra, with permission)

QUARTER 1

Number Theory and Computation:

a. Directed Numbers

What is a number, natural numbers, whole numbers, why do we need negative numbers, opposites, absolute values, number lines, compare and order directed numbers, four basic operations using negative numbers, use of negative numbers, averages, order of operations (tie in with calculation on a computer) coordinate graphs with third and fourth quadrants

b. Square and Square Root.

What is meant by the square of a number, how is it written, square of numbers from 1 -15, and 25, area representation of a square positive number, perfect squares, squares of negative numbers, squares of decimal fractions such that $-1 < N < 1$, introduction to the square root and the radical sign, squares of multiples of 10, square root of large numbers that are multiples of ten, approximate square root of large numbers.

c. Exponents

Introduction to exponents and powers, expanded form, decimal form, positive exponents and negative exponents, multiplying and dividing powers, raising a power to a given power.

QUARTER 2

Algebra

a. Simplification of expression

Simplifying simple expressions, simplifying expressions with powers, simplifying expressions using the distributive property

b. Substitution in formulas and expressions

Substituting in formulas, substituting in expressions, word problems with substitutions, solving equations, solving simple one step equations, solving two steps equations, solving equations after simplification, solving equations with the unknown on both sides of the equal sign, word problems

c. *Patterns*

Finding the given term of a pattern, finding the general rule that identifies a pattern, graphing patterns, graphing linear patterns e.g. $y = 4x + 6$

d. *Solving Inequalities*

Solving inequalities, solving inequalities with negative coefficient of the unknown, word problems, graphing inequalities.

QUARTER 3

Statistics

- a. Organizing data - frequency, tables, line plot, stem and leaf
- b. Representing data in graphical form- Bar Graphs, Histograms, Pie Chart, Scatter Plots, Line Graphs, Box and Whiskers
- c. Interpreting graphs – Central tendencies, quartiles, percentiles, misrepresentation of graphs,

QUARTER 4

Geometry

Types of angles, angle relationships, types of polygons, properties of triangles and quadrilaterals, similar and congruent shapes, perimeter, area, solids, type of solids, nets, orthographic projections, surface area, volume.