Grade Six Year Overview

Grade Six Year Overview: Mathematics and Numeracy

Term One Mathematics Learning Standards	Numeracy Connections
Number concepts involving small to large numbers (understanding place value from thousandths to billions, writing/reading numbers)	What is numeracy? Where do we use math in our lives and in other areas of learning? Creating, reading, and interpreting different types of graphs, including line graphs, and visual information, connected to other areas of learning or school and community events.
Order of operations (all operations, including brackets but not exponents)	
Multiplication and division facts to 100 (developing computational fluency through mental math strategies such as number patterns, multiples, decomposing, using known facts; develop fluency with 2x, 3x, 4x, 5x & 10x questions; practice through routines, games, etc)	
Multiples and factors (prime and composite numbers; decomposing a number into factors and prime factors, factor trees; sequence of multiples, finding lowest common multiple between two numbers)	
Fractions and Decimals (review of fraction and decimal concepts including to hundredths, comparing and ordering fractions along a number line using benchmark numbers, equivalent fractions, addition and subtraction of decimal numbers; note review is not assessed as this are learning standards from grades 4&5)	
Percents (after reviewing fractions and decimals, introduce concept of percents as another form of proportional relationship; represent percents using concrete materials such as base ten blocks, grid paper and symbolic notation)	
Communicating and Representing curricular competencies	
Line graphs (understand specific purpose of line graph: to measure change over time; collect data, graphing data using graph paper or with support of technology, comparing and interpreting data)	
Single outcome probability (predict and test the results of single event or outcome experiments such as rolling a die, spinning one spinner, tossing a coin; predict results based in theoretical probability, conduct experiments (ie 10 rolls of a die), record experimental probability results with tally marks/chart/graph)	

Term Two Mathematics Learning Standards	Numeracy Connections
Number concepts involving small to large numbers (decomposition of and flexibility with quantities from thousandths to billions, ordering numbers using benchmark numbers)	What is numeracy? Where do we use math in our lives and in other areas of learning? Reasoned Estimate numeracy task such as: Two students need lengths of wood for a box they are each designing and making for an ADST project. About how much would they need to each build a box? How are lengths of wood sold? Could they combine their orders to save money? About how much would each box cost to make? What might you need to consider?
Multiplication and division facts to 100 (developing computational fluency through mental math strategies using known facts such as 3x7 to calculate 6x7 by doubling; use of doubling or tripling with known facts and commutative property)	
Multiplication and division of decimal numbers (to tenths; using whole-number strategies such as decomposing, compensation, distributive and commutative properties, repeated addition or subtraction, use of arrays)	
Mixed numbers (represent and compare improper fractions and mixed numbers in concrete, pictorial and symbolic forms)	
Percents (develop concept of percents through problem-solving experiences and applying operations; example questions such as, What is 25% of 200? and having students solve using multiple strategies; connect to financial literacy and % discounts)	
Introduction to ratios (representing part to part and part to whole ratios with concrete materials and with symbolic notation)	
Reasoning and Analyzing and Understanding and Solving curricular competencies	
One-step equations (connect to number patterns, including whole number coefficients/solutions, connect to line graphs from 1st term)	
Angle measurement (classifying different types of angles: straight, acute, right, obtuse, reflex, estimating angles, measuring angles with a protractor, using referent angles to compare angles)	
Triangles (classifying and comparing types of triangles: scalene, isosceles, equilateral, right, acute, obtuse; connect to angles)	
Combinations of transformations (combinations of two or more single 2D shape movement visually– slide/translation, flip/reflection, turn/rotation in the first quadrant of the Cartesian plane)	
Increasing/decreasing patterns (using expressions, tables, & graphs to show linear relationships, connect to line graphs from first term)	

Term Three Mathematics Learning Standards	Numeracy Connections
Number concepts involving small to large numbers (fluency with numbers from thousandths to billions, understanding scale, relationships, and place value)	What is numeracy? Where do we use math in our lives and in other areas of learning? Plan and Design numeracy task such as: Plan and design a storage shed for an outdoor learning space at your school. What dimensions would it need to be to hold the tools and materials needed? Plan a budget for the costs associated with building the shed.
Multiplication and division facts to 100 (developing computational fluency through mental math strategies using flexible thinking with known facts; practice through Number Talks, apps such as Multiples, math games, order of operations practice)	
Multiplication and division of decimal numbers (to the thousandths; using whole-number strategies such as decomposing, compensation, distributive and commutative properties, repeated addition or subtraction, use of arrays, problem-solving)	
Mixed numbers (compare and order along number line using benchmarks using concrete, pictorial and symbolic forms; represent fractions in different yet equivalent forms such as 6/4 = 1½; apply understanding of multiples and factors)	
Multiples and factors, ratios, percents (practice and application - divisibility rules, percentage discounts, problem-solving)	
Connecting and Reflecting curricular competencies	
Volume and capacity (understanding different between volume and capacity; using cm cubes and graph paper to build 3D shapes and calculate volume; using metric units to measure capacity)	
Perimeter and area measurement (perimeter of complex/combined shapes using grid paper, geoboards or colour tiles; area of triangles, parallelograms, and trapezoids using grid paper, decomposing shapes, deriving formulae, connecting to understanding of area of a rectangle)	
Financial literacy – simple budgeting and consumer math (record financial calculations using decimal numbers, make budget goals and plans using charts or tables and explain/justify choices or decisions, plan for saving for a purchase and calculating sale price of an item using percentage discount)	

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