COASTMETRO

ELEMENTARY MATH PROJECT

Grade 7

Year at a Glance

The following overview of the year is a suggested plan for grade 7 mathematics taking into consideration introducing new concepts in the first half of the year so there is time for spacing learning experiences over the year as well as balancing each term with number concepts and computational fluency alongside other areas of math.

Term One Mathematics Learning Standards
Multiplication and division facts to 100 (extending computational fluency through mental math strategies using flexible thinking with known facts; practice through routines such as Number Talks, apps such as Multiples and math games, order of operations practice)
Operations with decimals (review whole number strategies to apply to addition, subtraction, multiplication, and division with decimal numbers; introduce decimal numbers to order of operations problems)
Relationships between decimals, fractions, ratios and percents (review representing all four types of proportional relationships in different forms; make connections between tenths and hundredths)
Operations with integers (introduction to what integers are, contexts for integers, representing and ordering integers on a number line and with two-sided counters using zero pairing)
Communicating and Representing curricular competencies
Circumference and area of circles (investigate relationship between radius and circumference, use of circumference and area formulae utilizing pi, construct circles when provided radius, diameter, circumference, or area measurements)
Circle graphs (understand uses of circle graphs; collect data, graphing data using compass/protractor or with support of technology, comparing and interpreting data, connecting to use of percentages)
Experimental probability (predict and test the results of two independent event experiments such as rolling two dice; predict results based in theoretical probability, conduct experiments (ie 10 rolls of two dice), record experimental probability results with tally marks/chart/graph including circle graphs and compare and analyze theoretical vs experimental probability)

Term Two Mathematics Learning Standards

Multiplication and division facts to 100 (extending computational fluency through mental math strategies using flexible thinking with known facts; practice Number Talks, math games, etc; apply facts such as 8X7 to question such as 16x7 and 80x700)
Operations with decimals (fluency with multiple strategies for addition, subtraction, multiplication, and division with decimal numbers; decimal numbers included in order of operations problems)
Relationships between decimals, fractions, ratios and percents (comparing and ordering decimals, fractions and percents on a number line, conversions and equivalency between different forms)
Operations with integers (adding, subtracting, multiplying and dividing integers; applied in contextual problems, using the number line as a visual tool and two-sided counters using zero pairing as a concrete tool; add integers to order of operations questions)
Reasoning and Analyzing and Understanding and Solving curricular competencies
Discrete linear relations (using expressions, tables and graphs; x and y-intercepts, graphing on four quadrants of Cartesian plane)
Two-step equations (solving and verifying two-step equations including coefficients, connect to integers and Cartesian graphing)
Cartesian coordinates and graphing (point of origin, ordered pairs, connecting to integers and linear relations)

Term Three Mathematics Learning Standards
Multiplication and division facts to 100 (extending computational fluency through mental math strategies using flexible thinking with known facts; recall of multiplication and division facts within 100 and extending to related multiplication questions)
Operations with decimals (fluency with multiple strategies for addition, subtraction, multiplication and division with decimal numbers; application of these operations to financial literacy calculations; decimal numbers included in order of operations problems)
Relationships between decimals, fractions, ratios and percents (fluency and flexibility with strategies for thinking of different fractions as decimals or percentages or equivalency between ration and percentages; choosing appropriate number form for different contexts)
Operations with integers (ongoing practice of all four operations with integers in tasks, problems and order of operations questions using concrete, pictorial and symbolic forms)

Connecting and Reflecting curricular competencies
Volume of rectangular prisms & cylinders (build on understanding from grade six, connect to circle properties from term one)
Combinations of transformations (build on grade 6 transformations and apply to use with all four quadrants Cartesian plane from term 2, use of concrete materials and technology tools to visualize and transform shapes, connecting to integers)
Financial literacy – financial percentage tasks, problems and projects (apply understanding of percentage and computational fluency to calculate sales tax, tips, discounts and sales prices)