

# Grade Seven Year Overview

## Grade Seven Year Overview: Mathematics and Numeracy

Term One Mathematics Learning Standards	Numeracy Connections
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)	<p>What is numeracy? Where do we use math in our lives and in other areas of learning? Look for connections across curriculum and in the community.</p> <p>Creating, reading, and interpreting different types of graphs, including circle graphs, and visual information, connected to other areas of learning or school and community events.</p>
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	Numeracy Connections
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 $8 \times 7$ to question such as $16 \times 7$ and $80 \times 700$ )	<p>What is numeracy? Where do we use math in our lives and in other areas of learning? Look for connections across the curriculum and in the community.</p> <p>Reasoned Estimate numeracy task such as: Determine how the amount of materials needed and their cost for each student in your class to create an ADST project. About how much will it cost for each student to complete the project? Explain the assumptions and considerations you made.</p>
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	Numeracy Connections
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)	<p>What is numeracy? Where do we use math in our lives and in other areas of learning? Look for connections across the curriculum and in the community.</p> <p>Plan and Design numeracy task such as: Plan and design a class or school event which involves proposing a budget for expenses such as ordering food or supplies. The budget will include sales tax and may include percentage discounts for bulk ordering. Justify your plan and budget for this event.</p>
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)	