Grade 8 Math

Big Ideas

*Number represents, describes, and compares the quantities of ratios, rates, and percents.

*Computational fluency and flexibility extend to operations with fractions.

*Discrete linear relationships can be represented in many connected ways and used to identify and make generalizations.

*The relationship between surface area and volume of 3D objects can be used to describe, measure, and compare spatial relationships.

*Analyzing data by determining averages is one way to make sense of large data sets and enables us to compare and interpret.

Curricular Competencies

		Reasoning and Analyzing						Understanding and Solving				Communicating and Representing				Connecting and Reflecting			
		A Use logic and patterns to solve puzzles and play games	B Use reasoning and logic to explore, analyze, and apply mathematical ideas	C Estimate reasonably	D Demonstrate and apply mental math strategies	E Use tools or technology to explore & create patterns & relationships, & test conjectures	F Model mathematics in contextualized experiences	G Apply multiple strategies to solve problems in both abstract and contextualized situations	H Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving	I Visualize to explore mathematical concepts	J Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, & other cultures	K Use mathematical vocabulary & language to contribute to mathematical discussions	L Explain and justify mathematical ideas and decisions	M Communicate mathematical thinking in many ways	N Represent mathematical ideas in concrete, pictorial, and symbolic forms	O Reflect on mathematical thinking	P Connect mathematical concepts to each other and to other areas and personal interests	Q Use mathematical arguments to support personal choices	R Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts
Content																			
perfect squares and cubes	1																		
square and cube roots	2																		
percents less than 1 and greater than 100 (decimal & fractional %)	3																		
numerical proportional reasoning (rates, ratio, proportions, & %)	4																		
operations with fractions (addition, subtraction, multiplication, division, & order of operations)	5																		
discrete linear relations (extended to larger numbers, limited to integers)	6																		
expressions- writing and evaluating using substitution	7																		
two-step equations with integer coefficients, constants, and solutions	8																		
surface area and volume of regular solids, including triangular and other right prisms and cylinders	9																		
Pythagorean theorem	10																		
construction, views, and nets of 3D objects	11																		
central tendency	12																		
theoretical probability with two independent events	13																		
financial literacy — best buys	14																		