TABLE 2: STRUCTURE OF THE GPF

An 'x' means there are global proficiency descriptors (GPDs) for the grade in question. An 'a' means there are no GPDs for this grade level. Learners are considered to have developed the knowledge and skills for these subconstructs at earlier grade levels.

Domain		Construct		Subconstruct		Grade								
						1	2	3	4	5	6	7	8	9
N	Number and operations	N1	Whole numbers	N1.1	Identify, count in and identify the relative magnitude of whole numbers	x	x	x	x	x	x	a	a	a
				N1.2	Represent whole numbers in equivalent ways	x	x	x	x	x	x	a	a	a
				N1.3	Solve operations using whole numbers	x	x	x	x	x	x	see integers		
				N1.4	Solve real-world problems involving whole numbers	x	x	x	x	x	x	see integers		
		N2	Fractions	N2.1	Identify and represent fractions using objects, pictures, and symbols, and identify relative magnitude			x	x	x	x	x	a	a
				N2.2	Solve operations using fractions			x	x	x	x	a	a	
				N2.3	Solve real-world problems involving fractions			x	x	x	x	a	a	
		N3	Decimals	N3.1	Identify and represent decimals using objects, pictures, and symbols, and identify relative magnitude					x	x	x	a	a
				N3.2	Represent decimals in equivalent ways (including fractions and percentages)					x	x	x	x	a
				N3.3	Solve operations using decimals					x	x	x	x	a
				N3.4	Solve real-world problems involving decimals						x	x	x	a
		N4	Integers	N4.1	Identify and represent integers using objects, pictures, or symbols, and identify relative magnitude							x	a	a
				N4.2	Solve operations using integers							x	x	a
				N4.3	Solve real-world problems involving integers							x	x	a
		N5	Exponents and roots	N5.1	Identify and represent quantities using exponents and roots, and identify the relative magnitude							x	x	x
				N5.2	Solve operations involving exponents and roots									x
		N6	Operations across number	N6.1	Solve operations involving integers, fractions, decimals, percentages, and exponents								x	x
M	Measurement	M1	Length, weight, capacity, volume, area and perimeter	M1.1	Use non-standard and standard units to measure, compare, and order	x	x	x	x	x	x	x	x	a
				M1.2	Solve problems involving measurement				x	x	x	x	x	x
		M2	Time	M2.1	Tell time	x	x	x	x	x	a	a	a	a
				M2.2	Solve problems involving time		x	x	x	x	x	x	x	x

Domain		Construct		Subconstruct		Grade								
						1	2	3	4	5	6	7	8	9
		M3	Currency	M3.1	Use different currency units to create amounts	x	x	x	a	a	a	a	a	a
G	Geometry	G1	Properties of shapes and figures	G1.1	Recognize and describe shapes and figures	x	x	x	x	x	x	x	x	x
		G2	Spatial visualizations	G2.1	Compose and decompose shapes and figures	x	x	x		x	x	x	x	x
		G3	Position and direction	G3.1	Describe the position and direction of objects in space	x	x	x	x	x	x	x	x	x
S	Statistics and probability	S1	Data Management	S1.1	Retrieve and interpret data presented in displays	x	x	x	x	x	x	x	x	x
				S1.2	Calculate and interpret central tendency							x	x	x
		S2	Chance and probability	S2.1	Describe the likelihood of events in different ways						x	x	x	x
				S2.2	Identify permutations and combinations									x
A	Algebra	A1	Patterns	A1.1	Recognize, describe, extend, and generate patterns	x	x	x	x	x	x	x	a	a
		A2	Expressions	A2.1	Evaluate, model, and compute with expressions							x	x	x
		A3	Relations and functions	A3.1	Solve problems involving variation (ratio, proportion, and percentage)						x	x	x	x
				A3.2	Demonstrate an understanding of equivalency	x	x	x	x	x	x	a	a	a
				A3.3	Solve equations and inequalities							x	x	x
				A3.4	Interpret and evaluate functions									x

TABLE 3: KEY KNOWLEDGE AND SKILLS, BY GRADE LEVEL

Domain		Construct		Subconstruct		Knowledge or Skill	Grade								
							1	2	3	4	5	6	7	8	9
N	Number and operations	N1	Whole numbers	N1.1	Identify, count in and identify the relative magnitude of whole numbers	Count, read, and write whole numbers		x	x	x	x				
						Compare and order whole numbers		x	x	x	x	x			
						Skip count forwards or backwards		x	x	x	x	x			
				N1.2	Represent whole numbers in equivalent ways	Determine or identify the equivalency between whole numbers represented as objects, pictures, and numerals	x	x							
						Use place-value concepts			x	x	x	x			
						Round whole numbers				x	x	x	x		
				N1.3	Solve operations using whole numbers	Add, subtract, multiply and divide whole numbers	x	x	x	x	x	x			
						Find the double or half of a set of objects	x	x							
						Demonstrate fluency with basic addition, subtraction, multiplication and division facts	x	x	x	x					
						Identify factors and multiples of whole numbers		x	x	x	x	x			
						Peform calculations involving two or more operations on whole numbers		x	x	x	x	x			
				N1.4	Solve real-world problems involving whole numbers	Solve real-world problems involving the addition, subtraction, multiplication, and division of whole numbers, including with measurement and currency units	x	x	x	x	x	x			
		N2	Fractions	N2.1	Identify and represent fractions using objects, pictures, and symbols, and identify relative magnitude	Express a visual representation of a fraction (picture, objects) in fractional notation			x	x					
						Identify equivalent fractions, including identifying equivalances between improper fractions and mixed numbers				x	x	x			
						Compare and order fractions and mixed numbers, including when they are positive and negative				x	x	x	x		

Domain		Construct		Subconstruct		Knowledge or Skill	Grade								
							1	2	3	4	5	6	7	8	9
				N2.2	Solve operations using fractions	Add and subtract fractions and mixed numbers				x	x	x	x		
						Multiply and divide fractions by whole numbers, fractions, and mixed numbers					x	x	x		
				N2.3	Solve real-world problems involving fractions	Solve real-world problems involving the addition, subtraction, multiplication, and division of fractions (proper and improper); whole numbers; and mixed numbers					x	x	x	x	
		N3	Decimals	N3.1	Identify and represent decimals using objects, pictures, and symbols, and identify relative magnitude	Identify and represent quantities using decimal notation				x	x	x			
						Compare and order decimal numbers, including when they are positive or negative					x	x	x		
				N3.2	Represent decimals in equivalent ways (including fractions and percentages)	Round decimal numbers					x	x	x		
						Express fractions as decimals and vice versa					x	x	x		
						Compare and order decimals, fractions, and percentages, including when they are positive and negative						x	x	x	
						Express percentages as fractions or mixed numbers (and vice versa)								x	x
				N3.3	Solve operations using decimals	Add and subtract decimals, including positive and negative decimals					x	x	x		
						Multipy and divide decimals by whole numbers or decimals; divide whole numbers by decimals							x	x	
				N3.4	Solve real-world problems involving decimals	Solve real-world problems involving the addition, subtraction, multiplication, and division of decimals, including currency or money problems						x	x	x	
		N4	Integers	N4.1	Identify and represent integers using	Compare and order integers							x		

Domain		Construct		Subconstruct		Knowledge or Skill	Grade								
							1	2	3	4	5	6	7	8	9
						objects, pictures, or symbols, and identify relative magnitude									
				N4.2	Solve operations using integers	Multiply and divide integers							x		
						Identify factors and multiples, including common factors and common multiples, of whole numbers							x	x	
				N4.3	Solve real-world problems involving integers	Solve real-world problems involving the addition, subtraction, multiplication, and division of integers							x	x	
		N5	Exponents and roots	N5.1	Identify and represent quantities using exponents and roots, and identify the relative magnitude	Identify the square and cube, and the square and the cube root, of whole numbers							x		
						Identify and represent numbers using scientific notation and exponents								x	x
						Compare and order numbers expressed in scientific notation								x	x
				N5.2	Solve operations involving exponents and roots	Add, subtract, multiply, and divide quantities expressed in exponential notation, including scientific notation									x
		N6	Operations across number	N6.1	Solve operations involving integers, fractions, decimals, percentages, and exponents	Perform calculations involving two or more operations on integers, decimals, fractions, and exponents									x
M	Measurement	M1	Length, weight, capacity,	M1.1	Use non-standard and standard	Use non-standard units to estimate, measure, and compare length, weight, volume, and capacity	x	x	x						

Domain	Construct		Subconstruct		Knowledge or Skill	Grade								
						1	2	3	4	5	6	7	8	9
		volume, area and perimeter		units to measure, compare, and order	Use standard unts to estimate, measure, and compare the length, weight, capacity, and volume of two objects			x	x					
					Convert between units of measures of length, weight, volume, and capacity within a standard measurement system or between different systems of measurement					x	x	x	x	
					Read scales on a variety of measuring tools involving fractions and decimals					x	x	x		
			M1.2	Solve problems involving measurement	Solve problems involving the perimeter of polygons				x	x	x	x		
					Solve problems involving the circumference of circles									x
					Solve problems involving the area of rectangles, triangles, or circles or of compound shapes composed of rectangles or triangles				x	x	x	x	x	x
					Solve problems involving the surface area of a familiar polyhedron									x
					Solve problems involving the volume of prisms								x	x
					Solve problems involving the application of Pythagoras' theorem									x
	M2	Time	M2.1	Tell time	Distinguish between parts of the day, and sequence and describe events in time, using informal comparisons	x								
					Tell time using an analog clock		x	x	x					
					Identify equivalence between analog and digital representations of time					x				
					Identify or solve problems involving equivalences between different units of time		x	x		x				
			M2.2	Solve problems involving time	Solve problems involving the calendar		x							
					Solve problems involving elapsed time, including when times are presented in a schedule				x	x	x	x		
					Solve problems involving conversions of time: 12-hour and 24-hour time (7), time zones, and different units of time							x	x	x

Domain	Construct		Subconstruct		Knowledge or Skill	Grade								
						1	2	3	4	5	6	7	8	9
		M3	Currency	M3.1	Use different currency units to create amounts	Count or or create combinations of currency denominations	x	x	x						
						Recognize and name two-dimensional shapes and three-dimensional figures; Distinguish between regular and irregular shapes	x	x	x						
						Identify the attributes of 2-dimensional shapes or 3-dimensional figures				x					
						Classify complex two-dimensional shapes by their defining attributes							x		
						Recognize and name different types of lines			x						
						Recognize and name types of quadrilaterals						x			
		G1	Properties of shapes and figures	G1.1	Recognize and describe shapes and figures	Recognize and name parts of the circle, and identify the relationship between the radius and the diameter								x	
						Recognize angles and estimate their size							x	x	
						Solve problems involving the angle sum of a triangle, or angles formed by intersecting lines or parallel lines intersected by a transverse line								x	x
						Recognize two-dimensional shapes that have been rotated or reflected		x							
						Identify the line of symmetry of two-dimensional shapes			x						
						Recognize and describe the congruence and similarity of two-dimensional shapes			x						
						Recognize two-dimensional shape transformations that are expressed quantitatively or describe and implement such transformations							x	x	x
						Compose larger two-dimensional shapes from smaller shapes; decompose a larger shape into smaller shapes	x	x	x						
		G2	Spatial visualizations	G2.1	Compose and decompose shapes and figures	Identify the net of familiar, three dimensional shapes or particular sides represented in a net					x			x	
						Identify different views of three-dimentional shapes, including cross sections						x	x		x

Domain	Construct		Subconstruct		Knowledge or Skill	Grade								
						1	2	3	4	5	6	7	8	9
	G3	Position and direction	G3.1	Describe the position and direction of objects in space	Use positional terms, including left and right, to describe the location of an object	x	x	x						
					Use maps, including grid maps with compass directions, to describe locations or give directions			x	x	x				
					Use a Cartesian coordinate system to locate and plot points, describe or calculate distances between locations, and draw shapes						x	x	x	
					Describe or implement transformations								x	x
S	S1	Data management	S1.1	Retrieve and interpret data presented in displays	Retrieve information from or solve problems involving data displays (i.e., tally charts, bar graphs, or pictographs) with single or multi-unit scales and up to four categories of data	x	x	x	x	x				
Statistics and probability					Construct data displays using categories of data and single- or multi-unit scales				x					
					Retrieve information from, or solve problems involving, data displays with single- or multi-unit scales and categories and sub-categories of data						x			
					Retrieve information from or construct pie charts and Venn diagrams (for categorical data) and line graphs and dot plots (for bivariate data) to represent data							x	x	
					Understand, describe, and use relationships within displays of bivariate data									x
			S1.2	Calculate and interpret central tendency	Solve problems involving means, medians, and modes, including the effect of outliers on means and medians							x	x	x
					Compare key features of the distribution of two different but related sets of data, or the distribution of subcategories wiithin a set of data							x	x	
					Identify desirable characteristics of sampling methods									x
	S2	Chance and probability	S2.1	Describe the likelihood of events in different ways	Use words to describe the likelihood of an event happening, or to compare the likelihood of two events happening						x	x		
					Calculate the probability of events happening or place probabilty values or events on a continuum from 0 (impossible) to 1 (certain)							x		

Domain		Construct		Subconstruct		Knowledge or Skill	Grade								
							1	2	3	4	5	6	7	8	9
						Identify, or calculate the probability of, specific outcomes of simple or compound events, experimentally or otherwise								x	x
				S2.2	Identify permutations and combinations	Identify all the possible outcomes (sample space) for a situation involving a compound event comprised of two simple events, with and without replacement									x
A	Algebra	A1	Patterns	A1.1	Recognize, describe, extend, and generate patterns	Copy, recognize, describe, or extend repeating patterns, or identify missing elements of such patterns	x	x	x						
						Describe increasing or decreasing numerical patterns, or identify missing elements of such patterns				x	x				
						Generate a pattern from a given rule or match a pattern to a given rule				x					
						Recognize and extend non-linear patterns, including squaring patterns, when they are supported or not by a visual representation							x		
		A2	Expressions	A2.1	Evaluate, model, and compute with expressions	Use expressions to represent problem situations with single or multple variables							x	x	
						Add and subtract linear exprressions							x		
						Multiply, divide, simplify, and factor linear expressions								x	x
						Evaluate, simplify, and factor exponential expressions								x	x
		A3	Relations and functions	A3.1	Solve problems involving variation (ratio, proportion, and percentage)	Reason proportionally to solve problems involving ratio, when the ratio is expressed informally or formally						x	x		
						Solve prooblems involving equal ratios							x	x	
						Solve problems involving percentages							x	x	x
				A3.2	Demonstrate an understanding of equivalency	Represent equivalencies using objects and/or pictures	x	x							
						Create numerical expressions to model addition, subtraction, multiplication, or division situations			x	x					

Domain	Construct	Subconstruct		Knowledge or Skill	Grade								
					1	2	3	4	5	6	7	8	9
				Represent real-world problems by number sentences, with a symbol or blank to represent the missing value				x		x			
				Find the missing value in a number sentence			x		x	x			
		A3.3	Solve equations and inequalities	Represent and solve real-world problems involving equations							x	x	
				Graph linear equations, and identify the x-and y-intercepts or the slope of a line									x
				Represent and solve real-world problems using two linear equations									x
				Solve inequalities									x
		A3.4	Interpret and evaluate functions	Identify a function presented in a graph									x