CURRICULUM OBJECTIVES

MATHEMATICAL OPERATIONS, AVERAGE, MEDIAN, AND MODE			
Review of Operations	1	define: whole numbers, even numbers, odd numbers, digit	
	2	define: addition, subtraction, multiplication, division	
	3	define and use: addend, sum, difference, multiple	
	4	define and use: operations, product, dividend, divisor	
	5	define and use: quotient, remainder	
	6	explain relation between: counting and addition	
	7	explain relation between: addition and subtraction	
	8	explain relation between: addition and multiplication	
	9	explain relation between: subtraction and division	
	10	addition, subtraction, division facts and times tables	
	11	perform addition and subtraction of whole numbers	
	12	perform multiplication and division of whole numbers	
	13	perform borrowing and carrying	
	14	use signs: +, -, x, ÷, =, <, >	
	15	perform mathematical operations in columns	
	16	explain importance of neat columns and legibility	
	17	explain importance of accuracy, checking for errors	
	18	checking for errors using inverse operations	
	19	explain zero and its effects on mathematical operations	
Average (Mean)	20	find the average of two numbers	
	21	find average of a group of numbers	
Median	22	find the median of three numbers	
	23	find the median of two numbers	
	24	find the median of an odd number of items	
	25	find the median of an even number of items	
	26	explain percentile	
	27	tallying	
Mode	28	finding the mode of a group of numbers	
	29	tallying	
Order of Operations	30	following the order of operations	
	31	mnemonic: BEDMAS	
FACTORS AND PRIME NUMBERS			
Terms	1	define factor	
	2	define product	

	3	define multiple	
	4	define GCF (Greatest Common Factor)	
	5	define LCM (Least Common Multiple)	
	6	define prime number and prime factor	
	7	define prime factorization	
Factors and Prime Numbers	8	use factor trees to find factors	
	9	use factor trees to explain prime factors	
	10	use divisibility test to find factors	
	11	find GCM	
	12	find LCM	
EXPONENTS			
Terms	1	define exponential form	
	2	define power, exponent, base	
	3	define exponential notation	
Exponents	4	express like factors using exponents	
	5	express exponents using factors, expanded form	
	6	identify the base and the exponent in power form	
	7	read power form as squared, cubed, to the fourth power, or fourth power	
PROBLEM SOLVING WITH WHOLE NUMBERS			
Types of Problems	1	any combination of mathematical operations with whole numbers	
	2	any combination of mathematical operations with averages, medians, modes, factors, prime numbers	
	3	any combination of mathematical operations with exponents	
Strategies	4	develop good work habits	
	5	read all parts of question carefully	
	6	determine what is asked for or required	
	7	separate information given from question being asked	
	8	record information given and solution required separately	
	9	decide what arithmetic process will solve the problem	
	10	work neatly and arrange work in rows where possible	
	11	label the answer in terms of values given in question	
	12	estimate an answer	
	13	check every step and compare with estimated answer	
	14	compare estimated answer with answer found	
	15	translate English statements into mathematical expressions	
	16	draw pictures of problem	
	17	supply missing information if necessary	
	18	write full statements to answer questions	
	19	develop calculator skills	

	20	use clue words to solve word problems; e.g. total, sum, how much, how many, increased, altogether, less, fewer, more, difference, left, remains, times, at, divide, and each	
FRACTIONS			
Terms	1	define fraction, numerator, denominator	
	2	define mixed number, proper fraction	
	3	define improper fractions	
	4	define common denominator	
Fractions	5	the proper way to write fractions	
	6	compare and reduce fractions	
	7	write equivalent fractions	
	8	add fractions: like and unlike denominators	
	9	add fractions: find common denominators	
	10	subtract fractions: like and unlike denominators	
	11	subtract fractions: find common denominators	
	12	reduce fractions to lowest terms	
	13	cancelling fractions	
	14	multiply fractions	
	15	divide fractions	
	16	use division rule: cancel, invert 2^{nd} fraction, then multiply	
	17	change mixed numbers to improper fractions, as appropriate	
	18	change improper fractions to mixed numbers, as appropriate	
	19	report answer in lowest terms or mixed numbers, as appropriate	
DECIMALS			
Terms	1	define: decimal, decimal system	
	2	define mixed decimal	
	3	define terminating decimals	
	4	define repeating decimals	
	5	define lowest common multiple (LCM)	
Decimals	6	use of the decimal point	
	7	convert mixed numbers to decimals	
	8	multiply and divide by powers of 10	
	9	zero as a place holder	
	10	add and subtract decimals	
	11	place decimal points under each other	
	12	borrowing and carrying decimals	
	13	multiply decimals and placement of decimal in final answer	
	14	divide decimals and placement of decimal in final answer	
	15	expressing remainders as decimals	
	16	round off decimals	
	17	estimate when working with decimals	
	18	work with money	
	19	compare decimals and fractions	
	20	convert decimals to fractions	

	21	convert fractions to decimals	
PERCENT			
Terms	1	define percent	
	2	use of the "%" sign	
Percent	3	add and subtract with percents	
	4	multiply and divide with percents	
	5	convert fraction to percent	
	6	convert percent to fraction	
	7	convert decimals to percents	
	8	convert percents to decimals	
	9	convert fractions to decimals to percents	
PROBLEM SOLVING WITH FRACTIONS, DECIMALS, PERCENTS			
Types of Problems	1	any combination of math operations involving fractions, decimals, and/or percents	
Strategies	2	develop good work habits	
	3	read all parts of question carefully	
	4	determine what is asked for or required	
	5	separate information given from question being asked	
	6	record information given and solution required separately	
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INTRODUCTION TO RATIO AND PERCENT			
Percent	1	definition and calculation of percent	
	2	use formula "$r/100 = P/W$" to find percent of a number	
	3	use formula "$r/100 = P/W$" to find what percent one number is of another	
	4	use formula "$r/100 = P/W$" to find a number when a percent	

		is given	
	5	discuss other terms: "r" represents Percent rate	
	6	discuss other terms: "P" represents part of the number	
	7	discuss other terms: "W" represents the whole (entire) number	
Ratio	8	define ratio	
	9	how to write ratios	
	10	reduce ratios	
	11	distinguish between equivalent and non-equivalent ratios	
	12	compare and write equivalent ratios	
PROBLEM SOLVING WITH PERCENT AND RATIO			
Types of Problems	1	requiring any combination of mathematical operations involving ratio and percent	
Strategies	2	develop good work habits	
	3	read all parts of question carefully	
	4	determine what is asked for or required	
	5	separate information given from question being asked	
	6	record information given and solution required separately	
	7	decide what arithmetic process will solve the problem	
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THE METRIC SYSTEM			
Metric System	1	explain metric system and its base of ten	
	2	explain International System (SI Units)	
	3	fundamental units: length – metre (m)	
	4	fundamental units: mass – gram (g)	
	5	fundamental units: capacity – litre (L)	
	6	fundamental units: time – second (s)	
	7	fundamental units: temperature (degrees C)	
	8	metric prefixes and abbreviations	

	9	milli, (m) e.g. mm, mg mL	
	10	centi, (c) e.g. cm, cg, cL	
	11	deci, (d) e.g. dm, dg, dL	
	12	Unit (metre, gram, litre) m, g, L	
	13	deka, (da) e.g. dam, dag, daL	
	14	hecto, (h) e.g. hm, hg, hL	
	15	kilo, (k) e.g. km, kg, kL	
	16	derived units such as area (square m.)	
	17	derived units such as volume (cubic cm.)	
	18	derived units such as capacity (cubic dm)	
	19	concept of place value	
	20	convert one metric unit of measure into another	
PROBLEM SOLVING INVOLVING MEASUREMENT			
Types of Problems	1	requiring any combination of mathematical operations involving the metric system	
Strategies	2	develop good work habits	
	3	read all parts of question carefully	
	4	determine what is asked for or required	
	5	separate information given from question being asked	
	6	record information given and solution required separately	
	7	decide what arithmetic process will solve the problem	
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INTRODUCTION TO INTEGERS			
Integers	1	review of thermometer temperature reading	
	2	definition of integers	
	3	using a number line	
	4	standard form of integers: signs of operation	
	5	standard form of integers: signs of quantity	
	6	use of negative and positive integers: + shows gain	

	7	use of negative and positive integers: - shows loss	
	8	order integers from least to greatest and vice versa	
	9	add, subtract, multiply, divide with integers	
	10	practical applications of integers (golf, banking, etc.)	
PROBLEM SOLVING WITH INTEGERS			
Types of Problems	1	requiring any combination of mathematical operations involving integers	
Strategies	2	develop good work habits	
	3	read all parts of question carefully	
	4	determine what is asked for or required	
	5	separate information given from question being asked	
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INTRODUCTION TO EQUATIONS: EQUALITIES AND INEQUALITIES			
Terms	1	define equation	
	2	use and understand: variable, constant	
	3	use and understand: algebraic expressions, term, factors, coefficient	
	4	use and understand: replacement and solution	
	5	order of operations (BEDMAS)	
	6	symbols: +, -, x, ÷, =, and√	
	7	equality and inequality	
	8	use of "·" in place of "x" for multiplying	
Equations	9	use letters to represent numbers	
	10	order of operations	
INTRODUCTION TO GRAPHS			

Types of Graphs	1	bar graph, line graph, pictograph	
Steps to Creating good Graphs	2	determine what type of graph to use	
	3	collect and organize information	
	4	prepare graph outline, name horizontal and vertical scales	
	5	name the graph and interpret graph	
	6	good use of space, scales accurate, neatness	
	7	descriptive titles, data expressed accurately with tally	
Line Graphs	8	define line graph	
	9	shows changes and relationships between quantities	
	10	construct line graph: determine scale	
	11	construct line graph: draw and label lines, name the graph	
	12	interpret line graphs	
	13	practical applications: e.g. comparing retail sales by month	
Bar Graphs	14	define bar graph	
	15	length of solid vertical bars shows its value	
	16	construct bar graph: determine scale	
	17	construct bar graph: draw and label "x" and "y" axis, plot the data	
	18	construct bar graph: draw bars (equal width), label and name graph	
	19	interpret bar graphs	
	20	practical applications: e.g. comparing profits by year	
Circle Graphs	21	define circle graph	
	22	emphasizes relative size of parts to whole	
PROBLEM SOLVING USING GRAPHS			
Types of Problems	1	requiring any combination of mathematical operations involving graphs	
	2	read and produce bar graphs and line graphs	
Strategies	3	develop good work habits	
	4	read all parts of question carefully	
	5	determine what is asked for or required	
	6	separate information given from question being asked	
	7	record information given and solution required separately	
	8	decide what arithmetic process will solve the problem	
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