

Curriculum – MATH 7/PRE-ALGEBRA

Standards/Eligible Content/Anchor	Standard	Code
1st Quarter		
WHOLE NUMBERS/DECIMALS/INTEGERS		
REVIEW -ADDITION, SUBTRACTION, MULTIPLICATION AND DIVISION OF WHOLE NUMBERS AND DECIMALS		
REVIEW- ESTIMATE ADDITION, SUBTRACTION, MULTIPLICATION AND DIVISION OF WHOLE NUMBERS AND DECIMALS		
REVIEW- COMPARE AND ORDER DECIMALS ON A NUMBER LINE		
TEACH- INTRODUCE ADDITION AND SUBTRACTION OF INTEGERS		
TEACH- COMPARE AND ORDER INTEGERS ON A NUMBER LINE		
TEACH- ABSOLUTE VALUE AND NUMBER LINE		
TEACH- ORDER OF OPERATION USING WHOLE NUMBERS AND INTEGERS		
TEACH- FIND A MISSING ELEMENT OF A PATTERN FOR WHOLE NUMBERS AND DECIMALS		
Estimate solutions of problems involving calculations with basic operations of whole numbers, decimals, fractions, or mixed numbers and check the reasonableness of those estimates	2.2.7.D	1
M7.A.3.2.1Solve problems involving (+,-,x,/) of whole numbers, decimals, fractions, or mixed numbers (straight computation or word problems),	2.2.7.B	1
M7.A.3.2.2 Solve problems involving addition and subtraction of integers(with and without a calculator)		
Model and compare values of integers, mixed numbers	2.1.7A	2
Represent and use numbers in equivalent forms integers,absolute value	2.1.7B	2
M7.A.2.1.1Use the order of operation to simplify numerical expressions(may use parenthesis, brackets,+,-,x,/ squares up to 10 to the second power and cubes up to 4 the third power, whole numbers).	2.2.7.C	2
M7.A.1.2.1Compare and/or order integers,mixed numbers,fractions, and decimals (fractions and decimals may be mixed- no more than 5 numbers in a set to be ordered)		
M7.A.1.2.2Locate/identify decimals, fractions, mixed numbers and/or integers on a number line(a mix of these number forms may be on the same number line)		
M7.A.3.1.1 Estimate answers to problems involving whole numbers, decimals, fractions or mixed numbers		

<u>Develop a plan to analyze a problem, identify the information needed to solve the problem, carry out the plan, apply estimation skills as appropriate, check whether the plan makes sense, and explain how the problem was solved in grade appropriate contexts.</u>	2.5.7.A
<u>Use appropriate mathematical language, notation, and representations, including numerical tables, expressions, and equations; including formulas, charts, graphs, and diagrams to explain and interpret results.</u>	2.5.7.B
M7.D.2.2.1 Identify expressions, equations or inequalities that model mathematical situations(using whole numbers or decimals, no more than two operations and one variable)	
M7,D,1,1,1 Describe,extend or find a missing element of a pattern (show 3 repetitions of the pattern)whole numbers-may use only one operation from +,-,x,divide or squares. Fraction or decimals – may use only one operation from +,-,or x.	
M7.B.1.1.1 Add,subtract,or convert measurements, using only the units below, with and without regrouping (4ft-2ft5in=1ft7in) Answer should be converted to the largest whole unit (37oz=2lb5oz or 39in=1yd3in)	1 0 3 1 1 3 1 2
GRAPHING	
TEACH IDENTIFY QUADRANTS, X AND Y COORDINATES	2
TEACH PLOT X AND Y COORDINATES ON A COORDINATE GRID	
M7.C.3.1.1 Plot and/or identify ordered ordered pairs on a coordinate plane(all four quadrants)	
M7.C.3.1.2 Identify Quadrants I,II,III,IV,the x- & y-axes and the origin on a coordinate plane	
<u>Identify on a 2-dimensional coordinate system the location of points with rational number coordinates; plot in a two-dimensional coordinate system a point represented by an ordered pair of rational numbers.</u>	2.9.7.C 1

2nd Quarter**ALGEBRA**

TEACH- WRITE AND EVALUATE EXPRESSIONS

TEACH- ORDER OF OPERATIONS USING SUSTITUTION OF VARIABLES

TEACH- WRITE EQUATIONS AND INEQUALITIES

REVIEW- USE PROPERTIES TO SIMPLIFY EXPRESSIONS

TEACH -SOLVE ONE-STEP EQUATIONS

TEACH-IDENTIFY THE RELATIONSHIP BETWEEN TWO VARIABLES(TIME TEMPERATURE)

TEACH-IDENTIFY AND DETERMINE THE RULE FOR A FUNCTION

Evaluate and simplify algebraic expressions and solve and graph linear equations and inequalities

2.8.7.B 3

Use the concept of equality to demonstrate understanding of properties applied to rational numbers(identity,distributive, associative, commutative)

2.8.7.A

M7.D.2.1.1 Select and/or use appropriate strategies to solve one-step equations(no negative numbers)

M7.D.2.1.2 Use substitution of one and/or two variables to simplify expressions(whole numbers only-use order of operations).

M7.D.2.2.1 Identify expressions, equations or inequalities that model mathematical situations(using whole numbers or decimals, no more than two operations and one variable)

M7.D.3.1.1 Solve problems involving a constant rate of change (word problems,graphs or data tables)

M7.D.3.1.2 Describe and/or use the relationship of data displayed on a rate of change graph(e.g. How does the x-axis data relate to the y-axis data)

<u>Determine a functional rule from given data or a situation.</u>	2.8.7D	
<u>Use combinations of symbols and numbers to create expressions, equations, and inequalities in one variable that model problem situations.</u>	2.8.7.E	
<u>Interpret the results of solving equations and inequalities in one variable in the context of the situation that motivated the model.</u>	2.8.7.F	
FRACTIONS, DECIMALS, PERCENTS		
REVIEW-IDENTIFY EQUIVALENT FRACTIONS		4
REVIEW-COMPARE AND ORDER FRACTIONS AND MIXED NUMBERS ON A NUMBER LINE		4
REVIEW-ESTIMATE TO ADD AND SUBTRACT FRACTIONS AND MIXED NUMBERS		4
REVIEW-ADD AND SUBTRACT FRACTIONS AND MIXED NUMBERS		5
REVIEW- SIMPLIFY FRACTIONS USING GCF USING VENN DIAGRAMS		4
REVIEW-ESTIMATE TO MULTIPLY AND DIVIDE FRACTIONS		4
MULTIPLY AND DIVIDE FRACTIONS		5
ESTIMATE TO SOLVE PROBLEMS		
REVIEW FIND A MISSING ELEMENT OF A PATTERN FOR FRACTIONS		
Apply concepts of prime and composite numbers to calculate GCFs and LCMs of numbers	2.1.7E	4
Apply place value concepts to order and compare decimals; use the number line to order and compare decimals. fractions, mixed numbers, and/or integers	2.1.7.D	
Model and compare values of fractions and decimals	2.1.7A	4 , 5
M7.A.1.1.1Convert between fractions,decimals and/or percents		
Represent and use numbers in equivalent forms (fractions, decimals,percents,exponents, powers,rand roots	2.1.7B	4 , 5
M7.A.1.2.2Locate/identify decimals, fractions, mixed numbers and/or integers on a number line(a mix of these number forms may be on the same number line)		

M7.A.3.1.1 Estimate answers to problems involving whole numbers, decimals, fractions or mixed numbers		
M7.A.3.2.1 Solve problems involving (+, -, x, /) of whole numbers, decimals, fractions, or mixed numbers (straight computation or word problems),		
M7.D.1.1,1 Describe, extend or find a missing element of a pattern (show 3 repetitions of the pattern) whole numbers - may use only one operation from +, -, x, divide or squares. Fraction or decimals - may use only one operation from +, -, or x. M7.A.1.2.1 Compare and/or order integers, mixed numbers, fractions, and decimals (fractions and decimals may be mixed - no more than 5 numbers in a set to be ordered)		
3rd Quarter		
RATIO PROPORTIONS AND PERCENTS		
TEACH-UNDERSTAND PERCENT		
TEACH-UNDERSTAND AND USE RATIO AND RATES		
TEACH-SCALING		
TEACH-USE PROPORTIONS TO ENLARGE OR REDUCE		
TEACH-ADD, SUBTRACT AND CONVERT MEASUREMENTS METRIC AND CUSTOMARY MEASUREMENTS		
TEACH-CONVERT UNITS OF LENGTH, WEIGHT AND MASS		
TEACH-CONVERT UNITS OF CAPACITY		
TEACH-CONVERT UNITS OF TIME AND AND SUBTRACT		
Use ratios and proportions to model relationships between quantities	2.1.7.C	7
Understand the concepts of ratio, proportion, percents, and rates to determine unknown quantities in equations	2.1.7.F	7
M7.A.2.2.1 Write ratios to compare quantities (ratio of boys to girls)		
M7.A.2.2.3 Use proportions to determine if two quantities are equivalent (similar figures, prices of different sized items, etc)		
M7.A.2.2.4 Calculate and/or apply unit rates or unit prices (terminating decimals through the hundredth place only)		
M7.A.2.2.5 Select and/or use ratios or proportions to solve problems		
M7.B.2.2.1 Interpret and/or apply scales shown on maps, blueprints, models, etc.		

M7.B.2.2.2Determine and/or apply an appropriate scale for reduction or enlargement		
Use conversions to add and subtract measurement quantities within the metric and within the customary systems	2.3.7.D	
GEOMETRY		
REVIEW -IDENTIFY PARTS OF A CIRCLE-DIAMETER, RADIUS, CHORD,CIRCUMFERENCE		
REVIEW- SOLVE PROBLEMS INVOLVING RADIUS AND DIAMETER		
REVIEW-IDENTIFY CONGRUENT FIGURES		
REVIEW- IDENTIFY SIMILAR FIGURES		
REVIEW -IDENTIFY PARALLEL ,PERPENDICULAR, AND/OR SEGMENTS WITHIN THREE DIMENSIONAL FIGURES		
TEACH IDENTIFY SKEW LINES		
TEACH FIND PERIMETER AND AREA OF A COMPOUND FIGURE		
REVIEW FIND CIRCUMFERENCE AND AREA OF A CIRCLE		
REVIEW-FIND AREA OF A TRIANGLE ,CIRCLE, QUADRILATERAL AND PARALLELOGRAM		
TEACH- IDENTIFY AND/OR USE POLYGONS THAT ARE SIMILAR AND/OR CONGRUENT GIVEN EITHER MEASUREMENTS OR TIC AND ANGLE MARKS		
TEACH-IDENTIFY CORRESPONDING SIDES AND ANGLES OF CONGRUENT OR SIMILAR POLYGONS		
Demonstrate an understanding of measurable attributes and the units, systems, and processes of measurement	2.3.7.A	1 0 , 1
Develop strategies for and use appropriate units to determine lengths, areas, and perimeters of compound shapes	2.3.7.B	1

M7.B.2.1.1Develop strategies for and use appropriate units to determine perimeter and/or area of compound figures(compound figures should only include quadrilaterals and triangles)		
M7B.2.1.2Find the circumference and/o area of circles		
M7.B.2.1.3Find the area of triangles and/or all types of parallelograms		
Use measurement formulas to calculate volume, area, and perimeter and to calculate circumference and area of circles.	2.3.7.C	1
Select and/or use an appropriate scale for creating enlarged or reduced representations	2.3.7.E	6
Estimate and verify measurements of length, perimeter, area, volume, capacity, temperature, time, weight, and angles.	2.3.7.F	1 0 , 1 , 1 , 2
<u>Recognize, describe, extend, create, replicate, form a rule, and/or find a missing element for a variety of rational number patterns, sequences, and relationships verbally, numerically, symbolically, and graphically.</u>	2.8.7.C	1 0 , 1 1
Compute measures of sides and angles using proportions, the Pythagorean theorem, and right triangle relationships.	2.10.7.A	
Describe and use the relationship of data shown in a graph: solve problems involving a constant rate of change	2.11.7.B	6
<u>Develop a plan to analyze a problem, identify the information needed to solve the problem, carry out the plan, apply estimation skills as appropriate, check whether the plan makes sense, and explain how the problem was solved in grade appropriate contexts.</u>	2.5.7.A	
<u>Use appropriate mathematical language, notation, and representations, including numerical tables, expressions, and equations; including formulas, charts, graphs, and diagrams to explain and interpret results.</u>	2.5.7.B	
M7.A.2.2.2Solve for a variable in a given proportion		
M7A.2.2.6Use proportions to find the missing length of a side in similar figures		

M7.C.1.1.1 Identify, describe and or define diameter, radius, chord, and/or circumference in circles.		
M7.C.1.1.2 Solve problems involving the relationship between the radius and diameter of the same circle.		
M7.C.1.1.3 Identify parallel, perpendicular and/or skew line segments within three-dimensional figures.		
M7.C.1.2.1 Identify and or use polygons that are similar and/or congruent given either measurements or tick marks and angle marks		
M7.C.1.2.2 Identify corresponding sides and angles of congruent or similar polygons		
4th Quarter		
REVIEW MEAN, MEDIAN, MODE, RANGE		
TEACH STEM AND LEAF PLOTS		
REVIEW-USE GRAPHS TO ANALYZE DATA		
REVIEW-ANALYZE DATA		
TEACH-PROBABILITY OF SIMPLE EVENTS		
TEACH-EXPERIMENTAL AND THEORETICAL PROBABILITY		
Draw logical conclusions and justify reasoning for conclusions within mathematical contexts	2.4.7.A	
Evaluate the truth of conditional relationships expressed as if ... then statements	2.4.7.B	
Identify different ways of selecting a sample and choosing an appropriate sampling technique for a given situation	2.6.7.A	
Organize and display data using an appropriate data display such as circle graphs, histograms, line graphs,	2.6.7.B	8

double bar graphs, and stem-leaf- plots, Venn diagrams, tables, and charts.		
Use numerical summaries to describe different sets of data	2.6.7.C	
Use measures of central tendency and spread to compare data sets	2.6.7.D	8
M7.E.2.1.1 Identify/calculate the mean(average), median, mode, or range of a set of data		
M7.E.2.1.2 Decide/choose which measure of central tendency (mean, median, mode, or range) would be most appropriate for a given situation		
Interpret trends and make predictions based on data displayed in a graph	2.6.7.E	8
M7.E.1.1.1 Analyze data and/or answer questions pertaining to data represented in histograms, double bar graphs, multiple line graphs or stem-and-leaf plots		
<u>Predict the outcome of a grade-level appropriate probability experiment.</u>	2.7.7.A	
	2.7.7.B	
<u>Organize data collected in an experiment and select an appropriate format to display the data.</u>		
<u>Express the probability of a compound or complimentary event as a fraction, decimal, or percent.</u>	2.7.7.C	
<u>List the possible outcomes for two or more independent events and compare the outcomes.</u>	2.7.7.D	
<u>Find and interpret the experimental or theoretical probability of an outcome of a simple event.</u>	2.7.7.E	
M7.E.3.1.1 Find the theoretical probability of a simple and/or compound event (answer in lowest terms-any compound events should be independent)		
M7.E.3.1.2 Find the theoretical probability of an event NOT occurring (what is the probability of not rolling a 1 on a number cube)		
M7.E.3.1.3 Use data displayed in charts, graphs or tallies to find experimental probability		
M7.E.4.1.1 Formulate predictions and/or draw conclusions based on data displays (bar graphs, circle graphs or line graphs) or probability		
<u>Develop a plan to analyze a problem, identify the information needed to solve the problem, carry out the plan, apply estimation skills as appropriate, check whether the plan makes sense, and explain how the problem was solved in grade appropriate contexts.</u>	2.5.7.A	
<u>Use appropriate mathematical language, notation, and representations, including numerical tables, expressions, and equations; including formulas, charts, graphs, and diagrams to explain and interpret results.</u>	2.5.7.B	

