

FIFTH GRADE**MATHEMATICS**

Goal 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, and ratios and proportions.

Learning Standard A	Learning Standard B	Learning Standard C	Learning Standard D
Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.	Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.	Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.	Solve problems using comparison of quantities, ratios, proportions and percents.
6.A.2a. Compare and order whole numbers, fractions, and decimals using concrete materials, drawings and mathematical symbols.	6.B.2. Solve one- and two-step problems involving whole numbers, fractions, and decimals using addition, subtraction, multiplication and division.	6.C.2a. Select and perform computational procedures to solve problems with whole numbers, fractions and decimals.	6.D.2. Describe the relationship between two sets of data using ratios and appropriate notations (e.g., a/b , a to b , $a:b$)
<ul style="list-style-type: none"> • Order and compare whole numbers • Compare and order common fractions (e.g. $1/2$, $1/3$, $1/4$) • Compare and order common decimals to the hundredths place (e.g. $.50$, $.33$, $.75$) 	<ul style="list-style-type: none"> • Solve one- and two-step problems using addition and subtraction of whole numbers 	<ul style="list-style-type: none"> • Perform basic whole number multiplication and division facts through 10 	<ul style="list-style-type: none"> • Comparison of two groups, written in ratio form
		<p>6.C.2b. Show evidence that computational results using whole numbers, fractions and decimals are correct and/or that estimates are reasonable.</p> <ul style="list-style-type: none"> • Estimation of whole numbers 	

State Goal 7: Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.

Learning Standard A	Learning Standard B	Learning Standard C
Measure and compare quantities using appropriate units, instruments and methods.	Estimate measurements and determine acceptable levels of accuracy.	Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.
7.A.2a. Calculate, compare and convert length, perimeter, area, weight/mass and volume within the customary and metric systems		7.C.2a. Describe relationships in a simple scale drawing
<ul style="list-style-type: none"> Measure lengths in centimeters and inches 		<ul style="list-style-type: none"> Identify and compare the relationship between simple scale drawings

State Goal 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

Learning Standard A	Learning Standard B	Learning Standard C	Learning Standard D
Describe numerical relationships using variables and patterns.	Interpret and describe numerical relationships using tables, graphs and symbols.	Solve problems using systems of numbers and their properties.	Use algebraic concepts and procedure to represent and solve problems.
8.A.2a. Identify, describe, extend, and create geometric and numeric patterns		8.C.2. Explain operations and number properties including commutative, associative, distributive, transitive, zero, equality and order of operations.	<ul style="list-style-type: none"> Apply algebraic concepts and procedures to solve simple equations, using whole numbers
<ul style="list-style-type: none"> Extend a given number pattern 		<ul style="list-style-type: none"> Apply the concepts zero, commutative, associative and identity properties 	
8.A.2b. Construct and solve number sentences using a variable to represent an unknown quantity			
<ul style="list-style-type: none"> Complete one-step IN-OUT tables Use symbols =, <, >, in writing expressions 			

State Goal 9: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.

Learning Standard A	Learning Standard B	Learning Standard C
Demonstrate and apply geometric concepts involving points, lines, planes and space.	Identify, describe, classify and compare relationships using points, lines, planes and solids.	Contrast convincing arguments and proofs to solve problems.
9.A.2a. Build physical models of two-and three-dimensional shapes	9.B.2. Compare geometric figures and determine their properties including parallel, perpendicular, similar, congruent, and line symmetry.	9.C.2. Formulate logical arguments about geometric figures and patterns and communicate reasoning.
<ul style="list-style-type: none"> Identify two- and three- dimensional shapes and their basic properties 	<ul style="list-style-type: none"> Identify and classify triangles and quadrilaterals: rectangle, square, rhombus with instruction 	<ul style="list-style-type: none"> Solve problems using formulas for perimeter and area
9.A.2b. Identify and describe how geometric figures are used in practical settings (e.g. construction, art, advertising)		
<ul style="list-style-type: none"> Identify tessellations 		
9.A.2c. Describe and draw representations of geometric relationships, patterns, symmetries and designs in two and three dimensions, with and without technology		
<ul style="list-style-type: none"> Construct right, isosceles, scalene, and equilateral triangles 		

State Goal 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.

Learning Standard A	Learning Standard B	Learning Standard C
Organize, describe and make predications from existing data.	Formulate questions, design data collection methods, gather and analyze data and communicate findings.	Determine, describe and apply the probabilities of events.
10.A.2a. Organize and display data using pictures, tallies, tables, charts, bar graphs, line graphs, line plots and stem-and-leaf graph.	10.B.2b. Collect, organize and display data using tables, charts, bar graphs, line graphs, circle graphs, line plots and stem-and-leaf graphs.	10.C.2b. Compare the likelihood of events in terms of certain, more likely, less likely or impossible
<ul style="list-style-type: none"> Construct, read, and interpret tables and charts 	<ul style="list-style-type: none"> Describe data (e.g., mystery plots) 	<ul style="list-style-type: none"> List all possible outcomes of an event
10.A.2b. Using a data set, determine mean, median, mode and range with and without the use of technology.	10.B.2d. Interpret results or make relevant decisions based on the data gathered	
<ul style="list-style-type: none"> Organize data and find median, mode, and range 	<ul style="list-style-type: none"> Interpret results 	
10.A.2c. Make predictions and decisions based on data and communicate their reasoning.		
<ul style="list-style-type: none"> Make reasonable predictions 		