

Groveport Madison Local School District

Third Grade Math Content Standards

Planning Sheets

Standard: Patterns, Functions and Algebra

	1st 9 wks	2nd 9 wks	3rd 9wks	4th 9 wks
A. Analyze and extend patterns, and describe the rule in words.				
1. Extend multiplicative and growing patterns, and describe the pattern or rule in words.		✓		
2. Analyze and replicate arithmetic sequences with and without a calculator.	✓			
B. Use patterns to make predictions, identify relationships and solve problems.				
3. Use patterns to make predictions, identify relationships, and solve problems.		✓		
C. Write and solve open sentences and explain strategies.				
5. Write, solve and explain simple mathematical statements, such as $7 + ? > 8$ or $\Delta + 8 = 10$.	✓			
6. Express mathematical relationships as equations and inequalities.				✓
D. Represent an unknown quantity as a variable using a symbol, including letters.				
E. Use variables to create and solve equations representing problem situations.				
4. Model problem situations using objects, pictures, tables, numbers, letters and other symbols.		✓		
F. Construct and use a table of values to solve problems associated with mathematical relationships.				
7. Create tables to record, organize and analyze data to discover patterns and rules.		✓		
G. Describe how a change in one variable affects the value of a related variable.				
8. Identify and describe quantitative changes, especially those involving addition and subtraction; e.g., the height of water in a glass becoming 1 centimeter lower each week due to evaporation.				✓

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Standard: Measurement

	1st 9 wks	2nd 9 wks	3rd 9wks	4th 9 wks
A. Select appropriate units for perimeter, area, weight, volume (capacity), time and temperature using: objects of uniform size; U.S. customary unit; e.g., mile, square inch, cubic inch, second degree Fahrenheit, and other units as appropriate; metric units; e.g., millimeter, kilometer, square centimeter, kilogram, cubic centimeter, degree Celsius, and other units as appropriate.				
1. Identify and select appropriate units for measuring:			✓	
a. length –miles, kilometers and other units of measure as appropriate;			✓	
b. volume (capacity) – gallons;			✓	
c. weight –ounces, pounds, grams, or kilograms;			✓	
d. temperature –degrees (Fahrenheit or Celsius).			✓	
4. Read thermometers in both Fahrenheit and Celsius scales.		✓		
B. Know that the number of units is inversely related to the size of the unit for any item being measured.				
C. Develop common referents for units of measure for length, weight, volume (capacity) and time to make comparisons and estimates.				
2. Establish personal or common referents to include additional units; e.g., a gallon container of milk; a postage stamp is about a square inch.			✓	
5. Estimate and measure length, weight and volume (capacity), using metric and U.S. customary units, accurate to the nearest $\frac{1}{2}$ and $\frac{1}{4}$ unit as appropriate.			✓	
D. Identify appropriate tools and apply counting techniques for measuring side lengths, perimeter, and area of squares, rectangles, and simple irregular two-dimensional shapes, volume of rectangular prisms, and time and temperature.				
4. Read thermometers in both Fahrenheit and Celsius scales.		✓		
6. Use appropriate measurement tools and techniques to construct a figure or approximate and amount of specified length, weight or volume (capacity); e.g. construct a rectangle with length $2\frac{1}{2}$ inches and width 3 inches, fill a measuring cup to the $\frac{3}{4}$ cup mark.			✓	
7. Make estimates for perimeter, area and volume using links, tiles, cubes and other models.			✓	
E. Tell time to the nearest minute.				
3. Tell time to the nearest minute and find elapsed time using a calendar or a clock.		✓		

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Planning Sheets

Standard: Number, Number Sense and Operations

	1st 9 wks	2nd 9 wks	3rd 9wks	4th 9 wks
A. Use place value structure of the base-ten number system to read, write, represent and compare whole numbers and decimals.				
2. Use place value concepts to represent whole numbers and decimals using numerals, words, expanded notation and physical models.	✓		✓	✓
a. recognize 100 means “10 tens” as well as a single entity (1 hundred) through physical models and trading games.	✓			
b. describe the multiplicative nature of the number system, e.g., the structure of 3205 as 3 x 1000 plus 2 x 100 plus 5 x 1				✓
c. model the size of 1000 in multiple ways; e.g., packaging 1000 objects into 10 boxes of 100, modeling a meter with centimeter and decimeter strips, or gathering 1000 pop-can tabs			✓	
d. explain the concept of tenths and hundredths using physical such models, as metric pieces, base ten blocks, decimal squares or money				✓
3. Use mathematical language and symbols to compare and order; e.g., less than, greater than, at most, at least, <, >, +, ≤, ≥	✓			
B. Recognize and generate equivalent representations for whole numbers, fractions and decimals.				
1. Identify and generate equivalent forms of whole numbers; e.g., 36, 30 + 6, 9 x 4; 46 – 10, number of inches in a yard	✓			
7. Recognize and use decimal and fraction concepts and notations as related ways of representing parts of a whole or a set; e.g., 3 of 10 marbles are red can also be described as 3/10 and 3 tenths are red			✓	
C. Represent commonly used fractions and mixed numbers using words and physical models.				
5. Represent fractions and mixed numbers using words, numerals and physical models.			✓	
D. Use models, points of reference and equivalent forms of commonly used fractions to judge the size pf fractions and to compare, describe and order them.				
3. Use mathematical language and symbols to compare and order; e.g., less, than, greater than, at most, at least, <, >, +, ≤, ≥	✓			
6. Compare and order commonly used fractions and mixed numbers using number lines, models (such as fraction circles or bars), points of reference (such as more or less than), and equivalent forms found using physical or visual models.			✓	
E. Recognize and classify numbers a prime or composite and list factors.				
F. Count money and make change using both coins and paper bills.				
4. Count money and make change using coins and paper bills to ten dollars		✓		
G. Model and use commutative and associative properties for addition and multiplication				
11. Model and use the commutative and associative properties for addition and multiplication		✓		

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Standard: Number, Number Sense and Operations

1st
9 wks

2nd
9 wks

3rd
9wks

4th
9 wks

Standard: Number, Number Sense and Operations	1st 9 wks	2nd 9 wks	3rd 9wks	4th 9 wks
H. Use relationships between operations, such as subtraction as the inverse of addition and division as the inverse of multiplication.				
10. Explain and use relationships between operations, such as:	✓	✓	✓	
a. relate addition and subtraction as inverse operations;	✓			
b. relate multiplication and division as inverse operations;			✓	
c. relate addition to multiplication (repeated addition);		✓		
d. relate subtraction to division (repeated subtraction).			✓	
I. Demonstrate fluency in multiplication facts with factors through 10 and corresponding divisions.				
13. Demonstrate fluency in multiplication facts through 10 and corresponding division facts			✓	
J. Estimate the results of whole number computations using a variety of strategies, and judge the reasonableness				
15. Evaluate the reasonableness of computations based upon operations and the numbers involved; e.g., considering relative size, place value and estimates.		✓		
K. Analyze and solve multi-step problems involving addition, subtraction, multiplication and division using whole numbers.				
12. Add and subtract whole numbers with and without regrouping	✓			
14. Multiply and divide 2- and 3-digit numbers by single-digit number, without remainders for division				✓
L. Use a variety of methods and appropriate tools (mental math, paper and pencil, calculators) for computing with whole numbers.				
8. Model, represent and explain multiplication; e.g., repeated addition, skip counting, rectangular arrays and area model. For example:			✓	
a. use conventional mathematical symbols to write equations for word problems involving multiplication			✓	
b. understand that, unlike addition and subtraction, the factors in multiplication and division may have different units; e.g., 3 boxes of 5 cookies each			✓	
M. Add and subtract commonly used fractions with like denominators and decimals, using models and paper and pencil.				

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Planning Sheets

Standard: Data Analysis and Probability

	1st 9 wks	2nd 9 wks	3rd 9wks	4th 9 wks
A. Gather and organize data from surveys and classroom experiments, including data collected over a period of time.				
1. Collect and organize data from an experiment, such as recording and classifying observations or measurements, in response to a question posed.		✓		
B. Read and interpret tables, charts, graphs (bar, picture, line, line plot), and timelines as sources of information, identify main idea, draw conclusions, and make predictions.				
4. Support a conclusion of prediction orally and in writing, using information in a table or graph.		✓		
5. Match a set of data with a graphical representation of the data.		✓		
7. Analyze and interpret information represented on a timeline.		✓		
C. Construct charts, tables and graphs to represent data, including picture graphs, bar graphs, line graphs, line plots and simple Venn diagrams.				
6. Translate information freely among charts, tables, line plots, picture graphs and bar graphs; e.g., create a bar graph from the information on a chart.		✓		
D. Read, interpret and construct graphs in which icons represent more than a single unit or intervals greater than one; e.g., each _ = 10 bicycles or the intervals on an axis are multiples of 10.				
2. Draw and interpret picture graphs in which a symbol or picture represents more than one object.		✓		
3. Read, interpret and construct bar graphs with intervals greater than one.		✓		
E. Describe data using mode, median and range.				
8. Identify the mode of a data set and describe the information it gives about a data set.		✓		
F. Conduct a simple probability experiment and draw conclusions about the likelihood of possible outcomes.				
9. Conduct a simple experiment or simulation of a simple event, record the results in a chart, table or graph, and use the results to draw conclusions about the likelihood of possible outcomes.		✓		
G. Identify and represent possible outcomes, such as arrangements of a set of up to four members and possible combinations from several sets, each containing 2 or 3 members.				
10. Use physical models, pictures, diagrams and lists to solve problems involving possible arrangements or combinations of two to four objects.			✓	
H. Use the set of possible outcomes to describe and predict events.				

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Standard: Geometry and Spatial Sense

	1st 9 wks	2nd 9 wks	3rd 9wks	4th 9 wks
A. Provide rationale for groupings and comparisons of two-dimensional figures and three-dimensional objects.				
1. Analyze and describe properties of two-dimensional shapes and three-dimensional objects using terms such as vertex, edge, angle, side and face.			✓	
B. Describe and identify points, lines and planes in the environment.				
C. Describe and identify intersecting, parallel and perpendicular lines or segments in the environment.				
D. Identify and draw right, obtuse, acute and straight angles.				
2. Identify and describe the relative size of angles with respect to right angles as follows:			✓	
a. use physical models, like straws, to make different sized angles by opening and closing the sides, not by changing the side lengths;			✓	
b. identify, classify and draw right, acute, obtuse and straight angles.			✓	
E. Use attributes to describe, classify and sketch plane figures and build solid objects.				
1. Analyze and describe properties of two-dimensional shapes and three-dimensional objects using terms such as vertex, edge, angle, side and face			✓	
5. Build a three-dimensional model of an object composed of cubes; e.g., construct a model based on an illustration or actual object			✓	
F. Develop definitions of classes of shapes.				
G. Find and name locations in coordinate systems.				
3. Find and name locations on a labeled grid or coordinate system; e.g. a map or graph.			✓	
H. Identify and describe line and rotational symmetry in two-dimensional shapes and designs.				
4. Draw lines of symmetry to verify symmetrical two-dimensional shapes.			✓	
I. Describe, identify and model reflections, rotations and translations, using physical materials.				
J. Describe a motion or series of transformations that show two shapes are congruent.				