

Groveport Madison Local School District

Fourth Grade Math Content Standards

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 structure of the base-ten number system to read, write, represent and compare whole numbers through millions and decimals through thousandths	✓ Tenths, hundredths	✓ thousandths		
B. Recognize and generate equivalent representations for whole numbers, fractions and decimals.				
1. Identify and generate equivalent forms of fractions and decimals: For example:			✓	
a. Connect physical, verbal and symbolic representations of fractions, decimals and whole numbers; e.g. $\frac{1}{2}$, $\frac{5}{10}$, "five tenths", 0.5, shaded rectangles with half, and five tenths;			✓	
b. Understand and explain that ten tenths is the same as one whole in both fraction and decimal form.			✓	
C. Represent commonly used fractions and mixed numbers using words and physical models.				
D. Use models, points of reference and equivalent forms of commonly used fractions to judge the size of fractions and to compare, describe and order them.				
5. Use models and points of reference to compare commonly used fractions.			✓	
E. Recognize and classify numbers as prime or composite and list factors.				
4. Identify and represent factors and multiples of whole numbers through 100, and classify numbers as prime or composite.		✓		
F. Count money and make change using both coins and paper bills.				
8. Solve problems involving counting money and making change, using both coins paper bills.		✓		
G. Model and use commutative and associative properties for addition and multiplication.				
H. Use relationships between operations, such as subtraction as the inverse of addition and division as the inverse of multiplication.				
I. Demonstrate fluency in multiplication facts with factors through 10 and corresponding divisions.				
14. Demonstrate fluency in adding and subtracting whole numbers and in multiplying and dividing whole numbers by 1- and 2-digit numbers and multiples of ten.	✓ Add/subtract		✓ Multiply/Divide	
J. Estimate the results of whole number computations using a variety of strategies and judge the reasonableness.				
9. Estimate the results of computations involving whole numbers, fractions and decimals using a variety of strategies.		✓		

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	1st 9 wks	2nd 9 wks	3rd 9wks	4th 9 wks
K. Analyze and solve multi-step problems involving addition, subtraction, multiplication and division using whole numbers.				
6. Use associative and distributive properties to simplify and perform computations; e.g. use left to right multiplication and the distributive property to find an exact answer without paper and pencil, such as: $5 \times 47 + 5 \times 40 + 5 \times 7 = 200 + 35 = 235$		✓		
7. Recognize that division may be used to solve different types of problem situations and interpret the meaning of remainders; e.g., situations involving measurement, money.			✓	
12. Analyze and solve multi-step problems involving addition, subtraction, multiplication and division using an organized approach, and verify and interpret results with respect to the original problem.			✓	
L. Use a variety of methods and appropriate tools (mental math, paper and pencil, calculators) for computing with whole numbers.				
11. Develop and explain strategies for performing computations mentally.	✓			
13. Use a variety of methods and appropriate tools for computing with whole numbers; e.g., mental math, paper and pencil, and calculator.	✓			
14. Demonstrate fluency in adding and subtracting whole numbers and in multiplying and dividing whole numbers by 1- and 2-digit numbers and multiples of 10.	✓ Add/subtract	✓		
M. Add and subtract commonly used fractions with like denominators and decimals, using models and paper and pencil.				
9. Estimate the results of computations involving whole numbers, fractions and decimals, using a variety of strategies.			✓	
10. Use physical models, visual representations, and paper and pencil to add and subtract decimals and commonly used fractions with like denominators.			✓	

Groveport Madison Local School District
Fourth Grade Math Content Standards
Planning Sheets

Standard: Data Analysis & Probability

1st
9 wks

2nd
9 wks

3rd
9wks

4th
9 wks

Standard: Data Analysis & 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. Create a plan for collecting data for a specific purpose.	✓			
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.				
2. Represent and interpret data using tables, bar graphs, line plots and line graphs.	✓			
5. Propose and explain interpretations and predictions based on data displayed in tables, charts and graphs.	✓			
C. Construct charts, tables and graphs to represent data, including picture graphs, bar graphs, line graphs, line plots and simple Venn diagrams.				
2. Represent and interpret data using tables, bar graphs, line plots and line graphs.	✓			
3. Interpret and construct Venn diagrams to sort and describe data.	✓			
4. Compare different representations of the same data to evaluate how well each representation shows important aspects of the data, and identify appropriate ways to display the data.	✓			
D. Read, interpret and construct graphs in which icons represent more than a single unit or intervals greater than one; e.g., each <u> </u> = 10 bicycles or the intervals on an axis are multiples of 10.				
E. Describe data using mode, median and range.				
6. Describe the characteristics of a set of data based on a graphical representation, such as range of the data, clumps of data, and holes in the data.		✓		
7. Identify the median of a set of data and describe what it indicates about the data.		✓		
8. Use range, median and mode to make comparisons among related sets of data.		✓		
F. Conduct a simple probability experiment and draw conclusions about the likelihood of possible outcomes.				
9. Conduct simple probability experiments and draw conclusions from the results; e.g., rolling number cubes or drawing marbles from a bag.			✓	
10. Represent the likelihood of possible outcomes for chance situations; e.g., probability of selecting red marble from a bag containing 3 red and 5 white marbles.			✓	
11. Relate the concepts of impossible and certain-to-happen events to the numerical values of 0 (impossible) and 1 (certain)..			✓	
12. Place events in order of likelihood and use a diagram or appropriate language to compare the chance of each event occurring; e.g., impossible, unlikely, equal, likely, certain.			✓	

Groveport Madison Local School District
Fourth Grade Math Content Standards
Planning Sheets

Standard: Data Analysis & Probability

1st
9 wks

2nd
9 wks

3rd
9wks

4th
9 wks

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.				
13. List and count all possible combinations using one member from each of several sets, each containing 2 or 3 members; e.g., the number of possible outfits from 3 shirts, 2 shorts, and 2 pairs of shoes.			✓	
H. Use the set of possible outcomes to describe and predict events.				
10. Represent the likelihood of possible outcomes for chance situations; e.g., probability of selecting a red marble from a bag containing 3 red and 5 white marbles.			✓	
11. Relate the concepts of impossible and certain-to-happen events to the numerical values of 0 (impossible) and 1 (certain).			✓	

Groveport Madison Local School District
Fourth Grade Math Content Standards
Planning Sheets

Standard: Geometry and Spatial Sense

1st
9 wks

2nd
9 wks

3rd
9wks

4th
9 wks

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.				
3. Identify similarities and differences of quadrilaterals; e.g., squares, rectangles, parallelograms and trapezoids.		✓		
4. Identify and define triangles based on angle measures (equiangular right, acute and obtuse triangles) and side lengths (isosceles, equilateral and scalene triangles).		✓		
B. Describe and identify points, lines and planes in the environment.				
1. Identify, describe and model intersecting parallel and perpendicular lines and line segments; e.g., use straws or other material to model lines.			✓	
5. Describe points, lines and planes, and identify models in the environment.			✓	
C. Describe and identify intersecting, parallel and perpendicular lines or segments in the environment.				
2. Describe, classify, compare and model two- and three-dimensional objects using their attributes.			✓	
D. Identify and draw right, obtuse, acute and straight angles.				
E. Use attributes to describe, classify and sketch plane figures and build solid objects.				
2. Describe, classify, compare and model two- and three-dimensional objects using their attributes.			✓	
F. Develop definitions of classes of shapes.				
3. Identify similarities and differences of quadrilaterals; e.g., squares, rectangles, parallelograms and trapezoids.			✓	
4. Identify and define triangles based on angle measures (equiangular, right, acute and obtuse triangles) and side lengths (isosceles, equilateral and scalene triangles).			✓	
G. Find and name locations in coordinate systems.				
6. Specify locations and plot ordered pairs on a coordinate plane, using first quadrant points.	✓			
H. Identify and describe line and rotational symmetry in two-dimensional shapes and designs.				
I. Describe, identify and model reflections, rotations and translations, using physical materials.				
7. Identify, describe and use reflections (flips), rotations (turns), and translations (slides) in solving geometric problems; e.g., use transformations to determine if 2 shapes are congruent.			✓	
J. Describe a motion or series of transformations that show two shapes are congruent.				
8. Use geometric models to solve problems in other areas of mathematics, such as number (multiplication/division and measurement (area, perimeter, border)).			✓	

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Fourth Grade Math Content Standards

Planning Sheets

Standard: Measurement

1st	2nd	3rd	4th
9 wks	9 wks	9wks	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.				
3. Identify and select appropriate units to measure:			✓	
a. perimeter – string or links (inches or centimeters);			✓	
b. area – tiles (square inches or square centimeters);			✓	
c. volume – cubes (cubic inches or cubic centimeters).			✓	
B. Know that the number of units is inversely related to the size of the unit for any item being measured				
1. Relate the number of units to the size of the units used to measure an object; e.g., compare the number of cups to fill a pitcher to the number of quarts to fill the same pitcher.			✓	
C. Develop common referents for units of measure for length, weight, volume (capacity) and time to make comparisons and estimates.				
2. Demonstrate and describe perimeter as surrounding and area as covering a two-dimensional shape, and volume as filling a three-dimensional object.			✓	
5. Make simple unit conversions within a measurement system; e.g., inches to feet, kilograms to grams, quarts to gallons.			✓	
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. Develop and use strategies to find perimeter using string or links, area using tiles or a grid, and volume using cubes; e.g., count squares to find area of regular or irregular shapes on a grid, layer cubes in a box to find its volume.			✓	
6. Write, solve and verify solutions to multi-step problems involving measurement.			✓	
E. Tell time to the nearest minute.				

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Standard: Patterns, Functions and Algebra

1st
9 wks

2nd
9 wks

3rd
9wks

4th
9 wks

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.				
2. Represent and analyze patterns and functions using words, tables and graphs		✓		
B. Use patterns to make predictions, identify relationships and solve problems.				
1. Use models and words to describe, extend and make generalizations of patterns and relationships occurring in computation, numerical patterns, geometry, graphs and other applications		✓		
C. Write and solve open sentences and explain strategies				
5. Represent mathematical relationships with equations or inequities		✓		
D. Represent an unknown quantity as a variable using a symbol, including letters.				
2. Represent and analyze patterns and functions using words tables and graphs		✓		
E. Use variables to create and solve equations representing problem situations.				
4. Use rules and variables to describe patterns and other relationships		✓		
F. Construct and use a table of values to solve problems associated with mathematical relationships.				
3. Construct a table of values to solve problems associated with a mathematical relationship		✓		
G. Describe how a change in one variable affects the value of a related variable.				
6. Describe how a change in one variable affects the value of a related variable; e.g. as one increases the other increases or as one increased the other decreases		✓		