

**Fayette County Schools
Mathematics Learning Map**

4th Grade

1st Nine Weeks

| | | | | | |
|---|--|--|---|---|---|
| Unit EQ | How can mathematics help us in our daily life? | In what ways can arrays and shares help us solve math problems? | | | |
| Benchmark CSOs | M.O.4.1.1 - read, write, order, and compare whole numbers to the millions place and decimals to thousandths place using a variety of strategies (e.g. symbols, manipulatives, number line, pictorial representations). | M.O.4.1.9 - quick recall of basic multiplication facts and corresponding division facts. | M.O.4.2.1 - determine the rule and explain how change in one variable relates to the change in the second variable, given an input/output model using two operations. | M.O.4.2.2 - recognize and describe relationships in which quantities change proportionally. | M.O.4.2.4 - solve real-world problems involving order of operations including grouping symbols and the four operations. |
| Standards Based Math Unit | <i>Mathematical Thinking at Grade 4</i> | <i>Arrays & Shapes</i> | | | |
| Tech Steps | There is not a Tech Step lesson for this CSO—refer to Ed Class (optional) | | | Project 6 – Extend a Pattern Rubric | There is not a Tech Step lesson for this CSO—refer to Ed Class (optional) |
| 21st Century Online Resources | I Can Statements | | | | |
| Lesson EQ's | How can manipulatives and pictures help you to read, write, order, and compare numbers? | What strategies can you use to help you recall your multiplication facts? | How can you determine a rule from an input/output model? | In what ways can you describe relationships in which quantities change proportionally? | How can order of operations help you solve real world problems? |

Unit Vocabulary

Place value
Multiplication facts
Division facts

Array
Multiple
Factor

Row
Column
Prime

Even
Odd

**Fayette County Schools
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4th Grade

1st Nine Weeks

| | | | | |
|---|--|---|--|--|
| Unit EQ | How can a coordinate grid help you measure distances? | | | |
| Benchmark CSOs | M.O.4.3.3 - identify, draw, label, compare and contrast, and classify lines (intersecting, parallel, and perpendicular) angles (acute, right, obtuse, and straight). | M.O.4.3.4 - identify and create a two-dimensional design with one line of symmetry. | M.O.4.3.6 - draw and identify parts of a circle: center point, diameter, and radius. | M.O.4.3.7 - select, analyze and justify appropriate use of transformations (translations, rotations, flips) to solve geometric problems including congruency and tiling (tessellations). |
| Standards Based Math Unit | <i>Sunken Ships & Grids</i> | | | |
| Tech Steps | There is not a Tech Step lesson for this CSO—refer to Ed Class (optional) | | | |
| 21st Century Online Resources | I Can Statements | | | |
| Lesson EQ's | In what ways can you compare and contrast lines and lines? Angles? | What two-dimensional design can you create which has one line of symmetry? | What are the parts of a circle? Draw them. | How can transformations help you solve geometric problems? |

Unit Vocabulary

Parallel lines
Intersecting lines
Perpendicular lines
Acute angles
Right angles
Obtuse angles

Straight angles
Two-dimensional
Line of symmetry
Circle
Center point

Diameter
Radius
Transformations
Translations
Rotations

Flips
Tessellations

**Fayette County Schools
Mathematics Learning Map**

4th Grade

2nd Nine Weeks

| | | | | |
|---|--|---|---|--|
| Unit EQ | How can landmarks help you understand the number system? | | How can area help us understand fractions? | |
| Benchmark CSOs | M.O.4.1.2 - demonstrate an understanding of the place value of each digit utilizing standard and expanded form through 1,000,000 with multiples of 10 [(5 X 10,000) + (3 X 1,000) + (4 X 10) + 2]. | M.O.4.1.3 - estimate solutions to problems including rounding, benchmarks, compatible numbers and evaluate the reasonableness of the solution, justify results. | M.O.4.1.10 - create grade-level real-world appropriate story problems using multiple strategies including simple ratios, justify the reason for choosing a particular strategy and present results. | M.O.4.4.2 - quantify area by finding the total number of same sized units that cover a shape, develop a rule and justify the formula for the area of a rectangle using the area model representing multiplication. |
| Standards Based Math Unit | <i>Landmarks in the Thousands</i> | | <i>Different Shapes, Equal Pieces</i> | |
| Tech Steps | There is not a Tech Step lesson for this CSO—refer to Ed Class (optional) | | | |
| 21st Century Online Resources | I Can Statements | | | |
| Lesson EQ's | How do you find place value through 1,000,000 with multiples of 10? | What strategies can you use to estimate solutions to problems and justify your solution? | How can ratios help you solve real world problems? | How can you justify the formula for the area of a rectangle? |

Unit Vocabulary

| | | | |
|----------|------|----------|-----------|
| Factor | Even | Fraction | Area |
| Multiple | Odd | Equal | Rectangle |

**Fayette County Schools
Mathematics Learning Map**

4th Grade

2nd Nine Weeks

| | | | |
|---|--|---|--|
| Unit EQ | What does the shape of the data on a graph tell you? | | |
| Benchmark CSOs | M.O.4.3.5 - graph/plot ordered pairs on a first-quadrant grid and use the coordinate system to specify location and describe path. | M.O.4.4.1 - select appropriate measuring tools, apply and convert standard units within a system to estimate, measure, compare and order real-world measurements including: <ul style="list-style-type: none"> • lengths using customary (to the nearest one-fourth inch) and metric units, • weight, • capacity, • temperature, and justify and present results. | M.O.4.5.4 - solve real world problems using mean, median and mode. |
| Standards Based Math Unit | <i>Shape of the Data</i> | | |
| Tech Steps | There is not a Tech Step lesson for this CSO—refer to Ed Class (optional) | | |
| 21st Century Online Resources | I Can Statements | | |
| Lesson EQ's | How can a graph/plot help you find a location and describe a path? | How do you estimate, measure, and compare different lengths? Weight? Capacity? Temperature? | What can mean, median, and mode tell you about a set of data? |

Unit Vocabulary

| | | | |
|--------|-----------------|---------------|-----------------|
| Mean | Customary units | Capacity | First quadrant |
| Median | Metric units | Temperature | Coordinate grid |
| Mode | Weight | Ordered pairs | |

**Fayette County Schools
Mathematics Learning Map**

4th Grade

3rd Nine Weeks

| | | | |
|---|---|--|--|
| Unit EQ | How can we use combining and comparing of numbers? | | |
| Benchmark CSOs | M.O.4.1.5 - analyze the relationship of fractions to decimals using concrete objects and pictorial representations. | M.O.4.1.6 - round decimals to the nearest whole, 10th, or 100th place. | M.O.4.4.4 - given real-world situations, count coins and bills and determine correct change. |
| Standards Based Math Unit | <i>Money, Miles, & Large Numbers</i> | | |
| Tech Steps | There is not a Tech Step lesson for this CSO—refer to Ed Class (optional) | | |
| 21st Century Online Resources | I Can Statements | | |
| Lesson EQ's | What is the relationship between fractions and decimals? | What strategy can you use to round decimals to the nearest whole number? | How do you solve problems involving money? |

Unit Vocabulary
Fraction

Decimal

Place value

**Fayette County Schools
Mathematics Learning Map**

4th Grade

3rd Nine Weeks

| | | | | |
|---|--|---|---|--|
| Unit EQ | How can graphs show us changes over time? | | | |
| Benchmark CSOs | M.O.4.2.3 - represent the idea of a variable as an unknown quantity using a letter, write an expression using a variable to describe a real-world situation. | M.O.4.4.3 - read time to the minute, calculate elapsed time in hours/minutes within a 24-hour period. | M.O.4.5.1 - read and interpret information represented on a circle graph. | M.O.4.5.2 - pose a grade-appropriate question that can be addressed with data, collect, organize, display, and analyze data in order to answer the question. |
| Standards Based Math Unit | <i>Changes Over Time</i> | | | |
| Tech Steps | There is not a Tech Step lesson for this CSO—refer to Ed Class (optional) | | Project 5 – Now You’re In Business Rubric | |
| 21st Century Online Resources | I Can Statements | | | |
| Lesson EQ’s | How can a variable help you solve a real world problem? | How do you calculate elapsed time? | What can a circle graph tell you about information? | How do you analyze data from a graph to help you solve a real world problem? |

Unit Vocabulary

| | | | |
|------------|--------|----------|--------------|
| Graph | Height | Title | Variable |
| Line graph | X-Axis | Interval | Circle graph |
| Bar graph | Y-Axis | Label | |

**Fayette County Schools
Mathematics Learning Map**

4th Grade

3rd Nine Weeks

| | | |
|---|--|---|
| Unit EQ | What happens to numbers when you multiply and divide? | |
| Benchmark CSOs | M.O.4.1.7 - add and subtract whole numbers (up to five –digit number) and decimals to the 1000th place, multiply (up to three digits by two-digits, and divide (up to a three digit number with a one and two-digit number). | M.O.4.1.8 - solve multi-digit whole number multiplication problems using a variety of strategies, including the standard algorithm, justify methods used. |
| Standards Based Math Unit | <i>Packages & Groups</i> | |
| Tech Steps | There is not a Tech Step lesson for this CSO—refer to Ed Class (optional) | |
| 21st Century Online Resources | I Can Statements | |
| Lesson EQ's | What strategies can you use to add and subtract? | How can multiplication help you solve real world problems? |

Unit Vocabulary

| | | |
|----------------|------------|----------|
| Addition | Divide | Product |
| Subtraction | Sum | Dividend |
| Multiplication | Difference | Divisor |

**Fayette County Schools
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4th Grade

4th Nine Weeks

| | | |
|---|--|---|
| Unit EQ | How can looking at a silhouette help us understand the solid? | |
| Benchmark CSOs | M.O.4.3.1 - identify, classify, compare and contrast two-dimensional (including quadrilateral shapes) and three-dimensional geometric figures according to attributes. | M.O.4.3.2 - recognize and describe three-dimensional objects from different perspectives. |
| Standards Based Math Unit | <i>Seeing Solids & Silhouettes</i> | |
| Tech Steps | There is not a Tech Step lesson for this CSO—refer to Ed Class (optional) | |
| 21st Century Online Resources | I Can Statements | |
| Lesson EQ's | What are the similarities and differences of two-dimensional figures? What are the similarities and differences of three-dimensional figures? | How can you recognize three-dimensional objects? |

Unit Vocabulary

| | | | | |
|-----------------|---------------|-------------------|--------|-----------------|
| Two-dimensional | Rhombus | Three-dimensional | Cone | Vertex/vertices |
| Square | Trapezoid | Prism | Sphere | Edges |
| Rectangle | Parallelogram | Cylinder | Face | Attributes |

**Fayette County Schools
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4th Nine Weeks

| | | |
|---|--|---|
| Unit EQ | How are fractions and probability related to each other? | |
| Benchmark CSOs | <p>M.O.4.1.4 - using concrete models, benchmark fractions, number line</p> <ul style="list-style-type: none"> • compare and order fractions with like and unlike denominators • add and subtract fractions with like and unlike denominators • model equivalent fractions • model addition and subtraction of mixed numbers with and without regrouping. | <p>M.O.4.5.3 - design and conduct a simple probability experiment using concrete objects, examine and list all possible combinations using a tree diagram, represent the outcomes as a ratio and present the results.</p> |
| Standards Based Math Unit | <i>Three Out of Four Like Spaghetti</i> | |
| Tech Steps | There is not a Tech Step lesson for this CSO—refer to Ed Class (optional) | |
| 21st Century Online Resources | I Can Statements | |
| Lesson EQ's | What concrete models can you use to compare and order fractions? Add and subtract fractions? Model equivalent fractions? Model addition and subtraction of mixed numbers? | How do you conduct a simple probability experiment and present the results? |

Unit Vocabulary

Fractions
Equal
Equivalent fractions
Denominator

Unlike denominator
Like denominator
Numerator
Mixed Numbers

Probability
Combinations
Ratio
Outcomes