

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

**Lesson 01 - Place Value, Comparing Numbers, Number Forms**

Math 4 Lesson 1 - Place Value, Comparing Numbers, Number Forms

<b>Standard Benchmark and Indicator</b>
S01. Number, Number Sense and Operations
A. Use place value structure of the base-ten number system to read, write, represent and compare whole numbers and decimals. (03-04)
02. Use place value structure of the base-ten number system to read, write, represent and compare whole numbers through millions and decimals through thousandths. (04)

**Lesson 02 - Word Forms**

Math 4 Lesson 2 - Word Forms

<b>Standard Benchmark and Indicator</b>
S01. Number, Number Sense and Operations
A. Use place value structure of the base-ten number system to read, write, represent and compare whole numbers and decimals. (03-04)
02. Use place value structure of the base-ten number system to read, write, represent and compare whole numbers through millions and decimals through thousandths. (04)

**Lesson 03 - Rounding Whole Numbers**

Math 4 Lesson 3 - Rounding Whole Numbers

<b>Standard Benchmark and Indicator</b>
S01. Number, Number Sense and Operations
A. Use place value structure of the base-ten number system to read, write, represent and compare whole numbers and decimals. (03-04)
03. Round whole numbers to a given place value. (04)

**Lesson 04 - Estimating Sums and Differences**

Math 4 Lesson 4 - Estimating Sums and Differences

<b>Standard Benchmark and Indicator</b>
S01. Number, Number Sense and Operations
A. Use place value structure of the base-ten number system to read, write, represent and compare whole numbers and decimals. (03-04)
03. Round whole numbers to a given place value. (04)
J. Estimate the results of whole number computations using a variety of strategies, and judge the reasonableness. (03-04)
09. Estimate the results of computations involving whole numbers, fractions and decimals, using a variety of strategies. (04)

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

**Lesson 05 - Whole Number Addition**

Math 4 Lesson 5 - Whole Number Addition

<b>Standard Benchmark and Indicator</b>
S01. Number, Number Sense and Operations
I. Demonstrate fluency in multiplication facts with factors through 10 and corresponding divisions. (03-04)
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. (04)

**Lesson 06 - Whole Number Subtraction**

Math 4 Lesson 6 - Whole Number Subtraction

<b>Standard Benchmark and Indicator</b>
S01. Number, Number Sense and Operations
I. Demonstrate fluency in multiplication facts with factors through 10 and corresponding divisions. (03-04)
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. (04)

**Lesson 07 - Whole Number Multiplication; Properties: Commutative, Associative, Distributive**

Math 4 Lesson 7 - Whole Number Multiplication; Properties: Commutative, Associative, Distributive

<b>Standard Benchmark and Indicator</b>
S01. Number, Number Sense and Operations
I. Demonstrate fluency in multiplication facts with factors through 10 and corresponding divisions. (03-04)
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. (04)
K. Analyze and solve multi-step problems involving addition, subtraction, multiplication and division of whole numbers. (03-04)
06. 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 (04)

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

**Lesson 08 - Whole Number Division**

Math 4 Lesson 8 - Whole Number Division

Standard Benchmark and Indicator
S01. Number, Number Sense and Operations
I. Demonstrate fluency in multiplication facts with factors through 10 and corresponding divisions. (03-04)
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. (04)
K. Analyze and solve multi-step problems involving addition, subtraction, multiplication and division of whole numbers. (03-04)
07. 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. (04)
L. Use a variety of methods and appropriate tools (mental math, paper and pencil, calculators) for computing with whole numbers. (03-04)
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. (04)

**Lesson 09 - First Quarter Review**

**Lesson 10 - Factors and Multiples**

Math 4 Lesson 10 - Factors and Multiples

Standard Benchmark and Indicator
S01. Number, Number Sense and Operations
E. Recognize and classify numbers as prime or composite and list factors. (03-04)
04. Identify and represent factors and multiples of whole numbers through 100, and classify numbers as prime or composite. (04)

**Lesson 11 - Primes and Composites**

Math 4 Lesson 11 - Primes and Composites

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

<b>Standard Benchmark and Indicator</b>
S01. Number, Number Sense and Operations
E. Recognize and classify numbers as prime or composite and list factors. (03-04)
04. Identify and represent factors and multiples of whole numbers through 100, and classify numbers as prime or composite. (04)

**Lesson 12 - Equivalent Forms of Fractions and Decimals; Compare Fractions**

Math 4 Lesson 12 - Equivalent Forms of Fractions and Decimals; Compare Fractions

<b>Standard Benchmark and Indicator</b>
S01. Number, Number Sense and Operations
B. Recognize and generate equivalent representations for whole numbers, fractions and decimals. (03-04)
01. Identify and generate equivalent forms of fractions and decimals. For example: (04)
01. Connect physical, verbal and symbolic representations of fractions, decimals and whole numbers; e.g., (04)
01. Understand and explain that ten tenths is the same as one whole in both fraction and decimal form. (04)
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. (03-04)
05. Use models and points of reference to compare commonly used fractions. (04)

**Lesson 13 - Add, Subtract, and Estimate Fractions**

Math 4 Lesson 13 - Add, Subtract, and Estimate Fractions

<b>Standard Benchmark and Indicator</b>
S01. Number, Number Sense and Operations
J. Estimate the results of whole number computations using a variety of strategies, and judge the reasonableness. (03-04)
09. Estimate the results of computations involving whole numbers, fractions and decimals, using a variety of strategies. (04)
M. Add and subtract commonly used fractions with like denominators and decimals, using models and paper and pencil. (03-04)
10. Use physical models, visual representations, and paper and pencil to add and subtract decimals and commonly used fractions with like denominators. (04)

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

**Lesson 14 - Add, Subtract, and Estimate Decimals**

Math 4 Lesson 14 - Add, Subtract, and Estimate Decimals

Standard Benchmark and Indicator
S01. Number, Number Sense and Operations
J. Estimate the results of whole number computations using a variety of strategies, and judge the reasonableness. (03-04)
09. Estimate the results of computations involving whole numbers, fractions and decimals, using a variety of strategies. (04)
M. Add and subtract commonly used fractions with like denominators and decimals, using models and paper and pencil. (03-04)
10. Use physical models, visual representations, and paper and pencil to add and subtract decimals and commonly used fractions with like denominators. (04)

**Lesson 15 - Problem Solving**

Math 4 Lesson 15 - Problem Solving

Standard Benchmark and Indicator
S01. Number, Number Sense and Operations
K. Analyze and solve multi-step problems involving addition, subtraction, multiplication and division of whole numbers. (03-04)
07. 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. (04)
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. (04)
L. Use a variety of methods and appropriate tools (mental math, paper and pencil, calculators) for computing with whole numbers. (03-04)
11. Develop and explain strategies for performing computations mentally. (04)
13. Use a variety of methods and appropriate tools for computing with whole numbers; e.g., mental math, paper and pencil, and calculator. (04)
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. (04)
S04. Patterns, Functions and Algebra
F. Construct and use a table of values to solve problems associated with mathematical relationships. (03-04)
03. Construct a table of values to solve problems associated with a mathematical relationship. (04)

**Lesson 16 – Money**

Math 4 Lesson 16 - Money

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

<b>Standard Benchmark and Indicator</b>
S01. Number, Number Sense and Operations
F. Count money and make change using both coins and paper bills. (03-04)
08. Solve problems involving counting money and making change, using both coins and paper bills. (04)
K. Analyze and solve multi-step problems involving addition, subtraction, multiplication and division of whole numbers. (03-04)
07. 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. (04)
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. (04)

**Lesson 17 – Patterns**

Math 4 Lesson 17 - Patterns

<b>Standard Benchmark and Indicator</b>
S04. Patterns, Functions and Algebra
A. Analyze and extend patterns, and describe the rule in words. (03-04)
02. Represent and analyze patterns and functions using words, tables and graphs. (04)
B. Use patterns to make predictions, identify relationships, and solve problems. (03-04)
01. Use models and words to describe, extend and make generalizations of patterns and relationships occurring in computation, numerical patterns, geometry, graphs and other applications. (04)
E. Use variables to create and solve equations representing problem situations. (03-04)
04. Use rules and variables to describe patterns and other relationships. (04)

**Lesson 18 - Midterm Exam**

**Lesson 19 - Equations and Variables**

Math 4 Lesson 19 - Equations and Variables

<b>Standard Benchmark and Indicator</b>
---

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

05. Represent mathematical relationships with equations or inequalities. (04)
G. Describe how a change in one variable affects the value of a related variable. (03-04)
06. 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 increases the other decreases. (04)

### **Lesson 20 - Mean, Median, Mode, Range**

Math 4 Lesson 20 - Mean, Median, Mode, Range

<b>Standard Benchmark and Indicator</b>
S05. Data Analysis and Probability
E. Describe data using mode, median and range. (03-04)
07. Identify the median of a set of data and describe what it indicates about the data. (04)
08. Use range, median and mode to make comparisons among related sets of data. (04)

### **Lesson 21 - Data Analysis and Probability**

Math 4 Lesson 21 - Data Analysis and Probability

<b>Standard Benchmark and Indicator</b>
S05. Data Analysis and Probability
F. Conduct a simple probability experiment and draw conclusions about the likelihood of possible outcomes. (03-04)
09. Conduct simple probability experiments and draw conclusions from the results; e.g., rolling number cubes or drawing marbles from a bag. (04)
11. Relate the concepts of impossible and certain-to-happen events to the numerical values of 0 (impossible) and 1 (certain). (04)
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. (04)
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. (03-04)
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 pair of shoes. (04)

### **Lesson 22 – Probability**

Math 4 Lesson 22 - Probability

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

<b>Standard Benchmark and Indicator</b>
<b>S05. Data Analysis and Probability</b>
F. Conduct a simple probability experiment and draw conclusions about the likelihood of possible outcomes. (03-04)
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. (04)

**Lesson 23 - Collecting and Interpreting Data**

Math 4 Lesson 23 - Collecting and Interpreting Data

<b>Standard Benchmark and Indicator</b>
<b>S05. Data Analysis and Probability</b>
A. Gather and organize data from surveys and classroom experiments, including data collected over a period of time. (03-04)
01. Create a plan for collecting data for a specific purpose. (04)
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. (03-04)
02. Represent and interpret data using tables, bar graphs, line plots and line graphs. (04)
C. Construct charts, tables and graphs to represent data, including picture graphs, bar graphs, line graphs, line plots and Venn diagrams. (03-04)
03. Interpret and construct Venn diagrams to sort and describe data. (04)
E. Describe data using mode, median and range. (03-04)
06. 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. (04)

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

**Lesson 24 - Displaying and Interpreting Data**

Math 4 Lesson 24 - Displaying and Interpreting Data

Standard Benchmark and Indicator
S05. Data Analysis and Probability
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. (03-04)
05. Propose and explain interpretations and predictions based on data displayed in tables, charts and graphs. (04)
C. Construct charts, tables and graphs to represent data, including picture graphs, bar graphs, line graphs, line plots and Venn diagrams. (03-04)
04. 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. (04)

**Lesson 25 - Measurement: Metric System**

Math 4 Lesson 25 - Measurement: Metric System

Standard Benchmark and Indicator
S02. Measurement
B. Know that the number of units is inversely related to the size of the unit for any item being measured. (03-04)
05. Make simple unit conversions within a measurement system; e.g., inches to feet, kilograms to grams, quarts to gallons. (04)
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. (03-04)
06. Write, solve and verify solutions to multi-step problems involving measurement. (04)

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

**Lesson 26 - Measurement: Metric System**

Math 4 Lesson 26 - Measurement: Metric System

Standard Benchmark and Indicator
S02. Measurement
B. Know that the number of units is inversely related to the size of the unit for any item being measured. (03-04)
05. Make simple unit conversions within a measurement system; e.g., inches to feet, kilograms to grams, quarts to gallons. (04)
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. (03-04)
06. Write, solve and verify solutions to multi-step problems involving measurement. (04)

**Lesson 27 - Test Over Lessons 19 – 26**

**Lesson 28 - Geometry Figures**

Math 4 Lesson 28 - Geometry Figures

Standard Benchmark and Indicator
S03. Geometry and Spatial Sense
B. Describe and identify points, lines and planes in the environment. (03-04)
05. Describe points, lines and planes, and identify models in the environment. (04)
C. Describe and identify intersecting, parallel and perpendicular lines or segments in the environment. (03-04)
01. Identify, describe and model intersecting, parallel and perpendicular lines and line segments; e.g., use straws or other material to model lines. (04)

**Lesson 29 - 2-D and 3-D Figures**

Math 4 Lesson 29 - 2-D and 3-D Figures

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

<b>Standard Benchmark and Indicator</b>
S03. Geometry and Spatial Sense
E. Use attributes to describe, classify and sketch plane figures and build solid objects. (03-04)
02. Describe, classify, compare and model two- and three-dimensional objects using their attributes. (04)
F. Develop definitions of classes of shapes. (03-04)
03. Identify similarities and differences of quadrilaterals; e.g., squares, rectangles, parallelograms and trapezoids. (04)

**Lesson 30 – Time**

Math 4 Lesson 30 - Time

<b>Standard Benchmark and Indicator</b>
S02. Measurement
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. (03-04)
06. Write, solve and verify solutions to multi-step problems involving measurement. (04)

**Lesson 31 - Classify Triangles**

Math 4 Lesson 31 - Classify Triangles

<b>Standard Benchmark and Indicator</b>
S03. Geometry and Spatial Sense
F. Develop definitions of classes of shapes. (03-04)
04. Identify and define triangles based on angle measures (equiangular, right, acute and obtuse triangles) and side lengths (isosceles, equilateral and scalene triangles). (04)

**Lesson 32 – Symmetry**

Math 4 Lesson 32 - Symmetry

<b>Standard Benchmark and Indicator</b>
S03. Geometry and Spatial Sense
I. Describe, identify and model reflections, rotations and translations, using physical materials. (03-04)
07. 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. (04)

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

**Lesson 33 - Ordered Pairs**

Math 4 Lesson 33 - Ordered Pairs

<b>Standard Benchmark and Indicator</b>
S03. Geometry and Spatial Sense
G. Find and name locations in coordinate systems. (03-04)
06. Specify locations and plot ordered pairs on a coordinate plane, using first quadrant points. (04)

**Lesson 34 – Transformations**

Math 4 Lesson 34 - Transformations

<b>Standard Benchmark and Indicator</b>
S03. Geometry and Spatial Sense
I. Describe, identify and model reflections, rotations and translations, using physical materials. (03-04)
07. 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. (04)

**Lesson 35 - Area, Perimeter, Volume**

Math 4 Lesson 35 - Area, Perimeter, Volume

<b>Standard Benchmark and Indicator</b>
S02. Measurement
A. Select appropriate units for perimeter, area, weight, volume (capacity), time and temperature, using: (03-04)
03. Identify and select appropriate units to measure: (04)
03. perimeter - string or links (inches or centimeters). (04)
03. area - tiles (square inches or square centimeters). (04)
03. volume - cubes (cubic inches or cubic centimeters). (04)
B. Know that the number of units is inversely related to the size of the unit for any item being measured. (03-04)
01. 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. (04)
C. Develop common referents for units of measure for length, weight, volume (capacity) and time to make comparisons and estimates. (03-04)
02. Demonstrate and describe perimeter as surrounding and area as covering a two-dimensional shape, and volume as filling a three-dimensional object. (04)
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. (03-04)

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

04. 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. (04)
<b>S03. Geometry and Spatial Sense</b>
E. Use attributes to describe, classify and sketch plane figures and build solid objects. (03-04)
08. Use geometric models to solve problems in other areas of mathematics, such as number (multiplication/division) and measurement (area, perimeter, border). (04)

**Lesson 36 - Final Exam**

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**

**Virtual Learning Academy**  
**Jefferson County Educational Service Center**  
**Academic Content Standards**  
**Math 04**