## APPROVED FACILITY SCHOOLS CURRICULUM DOCUMENT

**SUBJECT:** Mathematics  
**GRADE LEVEL:** 8

<table>
<thead>
<tr>
<th>Strand/Concept</th>
<th>Student Expectation</th>
<th>Student Friendly Learning Objective</th>
<th>Level of Thinking</th>
<th>Academic Vocabulary</th>
</tr>
</thead>
</table>
| **Strand:** Expressions and Equations | 8.EE.7 Solve linear equations in one variable. I C  
**Concept:** Analyze and solve linear equations and pairs of simultaneous linear equations | I can solve linear equations with one variable. I C  
I can solve linear equations that include the Distributive Property. | Synthesis         | Coefficient  
Distributive property  
Inverse operation  
Like terms  
Substitution  
Variable Operation |

### TIME LINE:
- **Quarter 1**

**Colorado SS:**
- i-Ready lesson: Solving Linear Equations with Rational Coefficients
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</table>
| **Strand:** Functions  
**Concept:** Define, evaluate, and compare functions. | 8.F.2  
Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change. | I can compare two different functions presented in two different ways. | Comprehension | Function  
Linear function  
Rate of change |

**Colorado SS:**  
I-Ready lessons: Linear Functions, Rate of Change and Initial Value; Properties of Functions; Using a Graph to Analyze a Functional Relationship
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<tbody>
<tr>
<td>Strand: Functions</td>
<td>8.F.3 Interpret the equation ( y = mx + b ) as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function ( A = s^2 ) giving the area of a square as a function of its side length is not linear because its graph contains the points ((1,1), (2,4)), and ((3,9)), which are not on a straight line.</td>
<td>I can identify an equation that is linear or nonlinear.</td>
<td>Comprehension</td>
<td>Function Slope-intercept form</td>
</tr>
</tbody>
</table>

Colorado SS: i-Ready lesson: Linear Functions
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<tbody>
<tr>
<td>Strand: Functions</td>
<td>8.F.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two ((x, y)) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.</td>
<td>I can construct a linear equation from a graph. I can construct a linear equation from a table. I can construct a linear equation from two points.</td>
<td>Application Evaluation</td>
<td>Dependent variable Independent variable Initial value Rate of change</td>
</tr>
<tr>
<td>Concept: Use functions to model relationships between quantities</td>
<td></td>
<td></td>
<td></td>
<td></td>
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Colorado SS:
i-Ready lesson: Linear Functions, Rate of Change and Initial Value
# Mathematics Curriculum

## Grade Level: 8

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</table>
| **Strand:** Functions  
**Concept:** Use functions to model relationships between quantities. | 8.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally. | I can sketch a graph from a real world situation. I can describe a situation from a graph. | Knowledge Comprehension Analysis | Decreasing Increasing |

**Colorado SS:** Analyze how credit and debt impact personal financial goals.  
i-Ready lesson: Using a Graph to Analyze a Functional Relationship

| Strand: Geometry  
**Concept:** Understand and apply the Pythagorean Theorem. | 8.G.6 Explain a proof of the Pythagorean Theorem and its converse. | I can explain the Pythagorean Theorem. | Comprehension | Hypotenuse Leg Pythagorean Theorem Right triangle Square |

**Colorado SS:**  
i-Ready lesson: The Pythagorean Theorem
<table>
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<tbody>
<tr>
<td><strong>Strand:</strong> Geometry</td>
<td>8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.</td>
<td>I can use the Pythagorean Theorem to determine unknown information.</td>
<td>Application</td>
<td></td>
</tr>
<tr>
<td><strong>Concept:</strong> Understand and apply the Pythagorean Theorem</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**Colorado SS:**
- i-Ready lesson: The Pythagorean Theorem

<table>
<thead>
<tr>
<th>Strand: Geometry</th>
<th>8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.</th>
<th>I can use the Pythagorean Theorem to find the distance between two points.</th>
<th>Application</th>
<th>Synthesis</th>
</tr>
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<tbody>
<tr>
<td><strong>Concept:</strong> Understand and apply the Pythagorean Theorem</td>
<td></td>
<td></td>
<td></td>
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</table>

**Colorado SS:**
- i-Ready lesson: Applications of the Pythagorean Theorem

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<tr>
<th>Strand: Geometry</th>
<th>8.G.9 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.</th>
<th>I can apply the formulas for cones, cylinders, and spheres in real-world situations.</th>
<th>Knowledge</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concept:</strong> Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.</td>
<td></td>
<td></td>
<td>Cone</td>
<td>Cylinder</td>
</tr>
</tbody>
</table>

**Colorado SS:**
- i-Ready lesson: Volume of Cylinders, Cones and Spheres

6/16/15
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<tr>
<td><strong>Strand:</strong> Statistics and Probability <strong>Concept:</strong> Investigate patterns of association in bivariate data.</td>
<td>8.SP.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.</td>
<td>I can draw a mathematical model using scatter plots and find the line of best fit.</td>
<td>Knowledge Comprehension Application</td>
<td>Line of best fit Mathematical model Scatter plot</td>
</tr>
</tbody>
</table>

**Colorado SS:**
- i-Ready lesson: Linear Models

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<tr>
<td><strong>Strand:</strong> Statistics and Probability <strong>Concept:</strong> Investigate patterns of association in bivariate data.</td>
<td>8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.</td>
<td>I can use equations to interpret the solutions in the context of a problem.</td>
<td>Comprehension Application</td>
<td>Linear model Negative relationship Positive relationship Slope Y-intercept</td>
</tr>
</tbody>
</table>

**Colorado SS:**
- i-Ready lesson: Problem Solving with Linear Models
## RESOURCES AND NOTES FOR QUARTER 1:

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**SUBJECT:** Mathematics **GRADE LEVEL:** 8
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**SUBJECT:** Mathematics  
**GRADE LEVEL:** 8

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</thead>
</table>
| **Strand:** Expressions and Equations  
**Concept:** Work with radicals and integer exponents. | 8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$. | I can apply the properties of exponents. | Knowledge Application | Equivalent numerical expressions  
Exponents  
Integers  
Properties of exponents |

**Colorado SS:**  
i-Ready lesson: Properties of Integer Exponents

| Strand: Expressions and Equations  
**Concept:** Work with radicals and integer exponents. | 8.EE.2 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where $p$ is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational. | I can solve and evaluate square roots and cube roots. | Application Evaluation | Cube root  
Irrational numbers  
Perfect cubes  
Perfect squares  
Rational number  
Square root |

**Colorado SS:**  
i-Ready lesson: Square Roots and Cube Roots

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TIMELINE: Quarter 2

Colorado SS:
- i-Ready lesson: Properties of Integer Exponents
- i-Ready lesson: Square Roots and Cube Roots
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<tr>
<td>Strand: Expressions and Equations</td>
<td>8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as $3 \times 10^8$ and the population of the world as $7 \times 10^9$, and determine that the world population is more than 20 times larger.</td>
<td>I can write very large and very small quantities using the powers of 10.</td>
<td>Application Evaluation</td>
<td>Exponent Powers Scientific notation</td>
</tr>
</tbody>
</table>

**Colorado SS:**
- i-Ready lesson: Scientific Notation
### Strand/Concept
- **Strand:** Expressions and Equations
- **Concept:** Work with radicals and integer exponents.

### Student Expectation
- 8.EE.4: Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.

### Student Friendly Learning Objective
- I can write and solve quantities, which include decimals, in scientific notation.

### Level of Thinking
- Application

### Academic Vocabulary
- Exponent
- Powers of 10
- Scientific notation
## APPROVED FACILITY SCHOOLS CURRICULUM DOCUMENT

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**GRADE LEVEL:** 8

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</table>
| **Strand:** Expressions and Equations  
**Concept:** Understand the connections between proportional relationships, lines, and linear equations. | 8.EE.5  
Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed. **CM** | I can graph linear relationships. | Comprehension Synthesis | Proportional relationship  
Similar triangles  
Unit rate |
| **Colorado SS:**  
i-Ready lesson: Representing Proportional Relationships |

| **Strand:** Expressions and Equations  
**Concept:** Understand the connections between proportional relationships, lines, and linear equations. | 8.EE.6  
Use similar triangles to explain why the slope $m$ is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at $b$. **CM** | I can write an equation in slope-intercept form from looking at a graph. | Application Analysis | Non-vertical line  
Similar triangles |
| **Colorado SS:**  
i-Ready lessons: Linear Functions; Linear Equations and Slope |
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| **Strand:** Expressions and Equations  
**Concept:** Analyze and solve linear equations and pairs of simultaneous linear equations. | 8.EE.7a  
Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms until an equivalent equation of the form \( x = a, a = a, \) or \( a = b \) results (where \( a \) and \( b \) are different numbers). | I can write an equation that has one solution.  
I can write an equation that has infinite solutions.  
I can write an equation that has no solution. | Comprehension Analysis | Function  
Infinitely many solutions  
Linear  
No solution  
Non-linear  
Rate of change |
| **Colorado SS:**  
i-Ready lesson: Solving Linear Equations |

| Strand: Functions  
**Concept:** Define, evaluate, and compare functions. | 8.F.1  
Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. | I can define a function. | Knowledge | Function  
Input  
Linear  
Non-linear  
Output  
Rate of change |
| **Colorado SS:**  
i-Ready lesson: Concept of a Function |
### APPROVED FACILITY SCHOOLS CURRICULUM DOCUMENT

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| **Strand:** Functions  
**Concept:** Define, evaluate, and compare functions. | 8.F.2  
Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change. | I can compare two different functions presented in two different ways. | Comprehension | Function  
Linear  
Non-linear  
Rate of change |
| **Colorado SS:**  
i-Ready lessons: Linear Functions, Rate of Change and Initial Value; Using a Graph to Analyze a Functional Relationship |

| Strand: Functions  
**Concept:** Define, evaluate, and compare functions. | 8.F.3  
Interpret the equation \( y = mx + b \) as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function \( A = s^2 \) giving the area of a square as a function of its side length is not linear because its graph contains the points \((1,1), (2,4)\) and \((3,9)\), which are not on a straight line. | I can identify an equation that is linear or non-linear.  
I can explain why a function is not linear. | Comprehension  
Analysis | Function  
Linear  
Non-linear  
Rate of change |
| **Colorado SS:**  
i-Ready lesson: Linear Functions |
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| **Strand:** Functions | **8.F.5** Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally. | I can sketch a graph from a real world situation.  
I can describe a situation from a graph. | Knowledge  
Comprehension Analysis | Linear  
Negative slope  
Positive slope  
Y-intercept |
| **Concept:** Use functions to model relationships between quantities. |                                                                                                                                                                                                                       |                                                                                                      |                                         |                      |

**Colorado SS:** Analyze how credit and debt impact personal financial goals.  
**i-Ready lesson:** Using a Graph to Analyze a Functional Relationship
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**RESOURCES AND NOTES FOR QUARTER 2:**
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<tr>
<td>Expressions and Equations</td>
<td>8.EE.7 Solve linear equations in one variable. C.M</td>
<td>I can solve linear equations with rational number coefficients.</td>
<td>Synthesis</td>
<td>Coefficient Distributive Property Like terms Rational number</td>
</tr>
<tr>
<td>Analyze and solve linear equations and pairs of simultaneous linear equations.</td>
<td>b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. C.M</td>
<td></td>
<td></td>
<td></td>
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**Colorado SS:**
- i-Ready lesson: Solving Linear Equations with Rational Coefficients
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<tr>
<td><strong>Strand:</strong> Functions</td>
<td>8.F.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change. C M</td>
<td>I can compare two different functions represented in two different ways.</td>
<td>Comprehension</td>
<td>Algebraically Function</td>
</tr>
<tr>
<td>Concept: Define, evaluate, and compare functions.</td>
<td></td>
<td></td>
<td></td>
<td>Graphically</td>
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**Colorado SS:**  
i-Ready lessons: Linear Functions, Rate of Change and Initial Value; Properties of Functions; Using a Graph to Analyze a Functional Relationship
**Strand/Concept**  |  **Student Expectation**  |  **Student Friendly Learning Objective**  |  **Level of Thinking**  |  **Academic Vocabulary**
--- | --- | --- | --- | ---
Strand: Functions  
Concept: Define, evaluate, and compare functions.  |  8.F.3 Interpret the equation \( y = mx + b \) as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function \( A = s^2 \) giving the area of a square as a function of its side length is not linear because its graph contains the points \( (1,1) \), \( (2,4) \) and \( (3,9) \), which are not on a straight line.  |  I can identify an equation that is linear or nonlinear.  |  Comprehension  |  

**Colorado SS:**  
i-Ready lesson: Linear Functions
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</table>
| **Strand:** Functions  
**Concept:** Use functions to model relationships between quantities. | 8.F.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two \((x, y)\) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. C | I can write a linear equation from a graph.  
I can write a linear equation from 2 points.  
I can write a linear equation from a table of values. | Application Evaluation | Dependent variable  
Independent variable  
Initial value  
Rate of change |

**Colorado SS:**  
i-Ready lesson: Linear Functions, Rate of Change and Initial Value

| Strand: Functions  
**Concept:** Use functions to model relationships between quantities. | 8.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally. M | I can sketch a graph from a real world situation.  
I can describe a situation from a graph | Knowledge Comprehension Analysis | Decreasing  
Increasing  
Linear  
Non-linear |

**Colorado SS:**  
Analyze how credit and debt impact personal financial goals.  
i-Ready lesson: Using a Graph to Analyze a Functional Relationship
## APPROVED FACILITY SCHOOLS CURRICULUM DOCUMENT

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</table>
| **Strand:** Geometry  
**Concept:** Understand congruence and similarity using physical models, transparencies, or geometry software. | 8.G.1 Verify experimentally the properties of rotations, reflections, and translations.  
- IM a. Lines are taken to lines, and line segments to line segments of the same length.  
- IM b. Angles are taken to angles of the same measure.  
- IM c. Parallel lines are taken to parallel lines. | I can identify properties of transformations.  
I can transform a line segment.  
I can transform an angle.  
I can transform parallel lines. | Knowledge Analysis | Angles  
Center of rotation  
Clockwise  
Congruent  
Counterclockwise  
Line of reflection  
Line segments  
Parallel lines  
Reflection  
Rotation  
Translation |

**Colorado SS:**  
i-Ready lessons (1a, 1b, 1c): Properties of Translations and Reflections; Properties of Rotations

| Strand: Geometry  
**Concept:** Understand congruence and similarity using physical models, transparencies, or geometry software. | 8.G.2 Understand that a two dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. | I can identify what type of transformation(s) has occurred with 2 congruent polygons | Comprehension | Reflection  
Rotation  
Translation |

**Colorado SS:**  
i-Ready lessons: Properties of Translations and Reflections; Properties of Rotations
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**GRADE LEVEL:** 8

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</table>
| **Strand:** Geometry  
**Concept:** Understand congruence and similarity using physical models, transparencies, or geometry software.  
8.G.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. IM | I can identify the new coordinates of a polygon after a transformation has occurred. | Comprehension | Dilation  
Reflection  
Rotation  
Translation |

**Colorado SS:**  
i-Ready lessons: Properties of Translations and Reflections; Properties of Rotations

| Strand: Geometry  
**Concept:** Understand congruence and similarity using physical models, transparencies, or geometry software.  
8.G.4 Understand that a two dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. IM | I can identify the sequence of transformations of 2 similar figures. | Comprehension  
Application Analysis | Dilation  
Rotation  
Similar  
Translation |

**Colorado SS:**  
i-Ready lesson: Properties of Dilations
### APPROVED FACILITY SCHOOLS CURRICULUM DOCUMENT

**SUBJECT:** Mathematics  
**GRADE LEVEL:** 8

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<tr>
<th>Strand/Concept</th>
<th>Student Expectation</th>
<th>Student Friendly Learning Objective</th>
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</table>
| **Strand:** Geometry  
**Concept:** Understand congruence and similarity using physical models, transparencies, or geometry software. | 8.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so. IM | I can distinguish the relationship between angle sums and exterior angle sums of triangles.  
I can distinguish the relationship between angles created when parallel lines are cut by a transversal.  
I can distinguish the relationship of similarities of triangle. | Comprehension  
Application  
Analysis | Exterior angle of triangles  
Parallel  
Similar triangles  
Transversal |

**Colorado SS:**

- i-Ready lessons: Geometric Properties involving Angles; Angle Sums Properties

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| **Strand:** Geometry  
**Concept:** Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres. | 8.G.9 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. IM | I know and can use formulas for cones, cylinders, and spheres within problem situations. | Knowledge Application  
Cone  
Cylinder  
Sphere  
Volume |

**Colorado SS:**

- i-Ready lesson: Volume of Cylinders, Cones, and Spheres
RESOURCES AND NOTES FOR QUARTER 3:
**STRAND/CONCEPT**

- **Expressions and Equations**

**ConCEPT:** Analyze and solve linear equations and pairs of simultaneous linear equations.

**STUDENT EXPECTATION**

- 8.EE.8
  - Analyze and solve pairs of simultaneous linear equations. IM

  a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. IM

  b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6. IM

  c. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair. IM

**STUDENT FRIENDLY LEARNING OBJECTIVE**

- I can discover the solution of a system of equations by graphing the linear equations and finding the point of intersection.

- I can identify when a system has infinitely many or no solutions.

- I can solve a system of two linear equations algebraically and graphically with two unknown variables.

- I can solve word problem by writing two linear equations and solving the system.

**TIMELINE:** Quarter 4

**COLORADO SS:**

- i-Ready lessons (8a, 8b): Systems of Linear Equations; Solving Systems of Linear Equations Algebraically
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<tr>
<td>Strand: Functions</td>
<td>8.F.3 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points $(1,1)$, $(2,4)$ and $(3,9)$, which are not on a straight line.</td>
<td>I can interpret whether an equation is linear or nonlinear.</td>
<td>Comprehension Analysis</td>
<td>Linear equation Non-linear</td>
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**Colorado SS:**

i-Ready lesson: Linear Functions
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<tr>
<td>Strand: Functions</td>
<td>8.F.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two ((x, y)) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.</td>
<td>I can write a linear equation from a graph. I can write a linear equation given 2 points. I can write a linear equation given a table of data.</td>
<td>Application Evaluation</td>
<td>Dependent variable Function Independent variable Rate of change Slope</td>
</tr>
<tr>
<td>Concept: Use functions to model relationships between quantities.</td>
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Colorado SS: i-Ready lesson: Linear Functions, Rate of Change and Initial Value
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<td>Strand: Statistics and Probability</td>
<td>8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.</td>
<td>I can interpret a scatter plot as linear or nonlinear. I can interpret a scatter plot as having strong or weak association. I can construct a scatter plot on a plane using two variables.</td>
<td>Comprehension Analysis</td>
<td>Association (positive and negative) Bivariate data Clustering Linear association Non-linear association Outliers Scatter plot</td>
</tr>
<tr>
<td>Concept: Investigate patterns of association in bivariate data.</td>
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<tr>
<td>Strand: Statistics and Probability</td>
<td>8.SP.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.</td>
<td>I can use a straight line to find a “line of best fit” on a scatter plot.</td>
<td>Knowledge Comprehension Application</td>
<td>Linear association Mathematical model Quantitative variables Scatter plots</td>
</tr>
<tr>
<td>Concept: Investigate patterns of association in bivariate data.</td>
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**Colorado SS:**
- i-Ready lesson: Scatter Plots

**Colorado SS:**
- i-Ready lesson: Linear Models
## Strand/Concept
**Strand:** Statistics and Probability
**Concept:** Investigate patterns of association in bivariate data.

## Student Expectation
**8.SP.3** Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height. CM

## Student Friendly Learning Objective
- I can use the line of best fit to determine an equation in two variables for the data (y = mx + b).
- I can use slope-intercept form to determine the slope and y-intercept of the line of best fit.

## Level of Thinking
Comprehension

## Academic Vocabulary
- Bivariate data
- Line of best fit
- Mathematical model

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**Colorado SS:**
- i-Ready lesson: Problem Solving with Linear Models
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<td>Strand: Statistics and Probability</td>
<td><strong>Concept:</strong> Investigate patterns of association in bivariate data. 8.SP.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores? I M</td>
<td>I can interpret the meaning of the slope and y-intercept in the context of the data given. I can create and interpret a frequency table with collected data. I can analyze the data between the variables in the frequency table.</td>
<td>Application Analysis Evaluation</td>
<td>Categorical data Frequency Relative frequency Two-way table</td>
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RESOURCES AND NOTES FOR QUARTER 4: