# Hamilton-Wenham Regional School District

# MRMS Common Core Standards Grade 8

## Grade 8 Units

Unit 1 Equations

Unit 2 Transformations

Unit 3 Angles and Triangles

Unit 4 Graphing and Writing Linear Equations

Unit 5 Systems of Linear Equations

Unit 6 Functions

Unit 7 Real Numbers and the Pythagorean Theorem

Unit 8 Volume and Similar Solids

Unit 9 Data Analysis and Displays

Unit 10 Exponents and Scientific Notation

## Grade 8 Overview

The grade 8 will address concepts in the areas of the number system, expressions and equations, functions, geometry , and statistics and probability. The students will expand their understanding of the number system by exploring irrational numbers and learning how to approximate their value. Also deepened will be the students’ ability to simplify more complex and abstract expressions and solve multi-step equations. Instructional time will include multiple ways to solve systems of linear equations and modeling an association of bivariate data. Included is a more in depth exploration of functions and their use as a means to model quantitative relationships. Topics focusing on two-dimensional and three-dimensional space will examine angle relationships, similarity, and congruence. The students will study The Pythagorean Theorem and it’s converse and be able to apply it to find the distance between points.

## Grade 8 Prerequisites

Grade 6: The students study four critical areas. They will be using concepts ratio and rate to solve problems and complete the study of division of fractions. Their understanding of integers will extend to include negative numbers. The students will use expressions and equations, and increase their statistical thinking skills.

Grade 7: The students will study proportional relationships. They will develop an understanding of operations with rational numbers. They will expand their skill of working with expressions and linear equations. Geometry will include scale drawings, area, surface area and volume of two and three dimensional shapes.

The curriculum map that follows for the eighth grade uses a sequence represented by the Big Ideas Common Core Curriculum. Our current math curriculum Math Connects Course 3 is not aligned to the Common Core. We anticipate using Big Ideas Math when we fully implement Common Core instruction in school year 2014-2015. The Big Ideas Math curriculum will be piloted during the 2013-2014 year in several classes.

Instructional activities are from Big Ideas Math (BI), and “Teaching the Common Core Math Standards with Hands-On Activities (HOCC).

## Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 1

## Critical Areas

Expressions and equations

### Unit 1 Equations 12 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 1.1  Solving Simple Equations  8.EE.7a  8.EE.7b | SMP 1, 3, 7,  What steps would you use to solve any linear equation in one variable? | 6.EE.3  Simplifying Algebraic Expressions  7.NS.1d  Adding and Subtracting Integers | (IA) Activitities 1-3  Sums of the Angles of a Triangle (BI pg. T2)  Writing and Applying a Rule    (IA) Unit 1.1 Practice and Application  (FA) Unit 1.1 Quiz |
| Unit 1.2  Solving Multi-Step  Equations  8.EE.7b | SMP 1, 4, 6  How can you solve a multi-step linear equation? |  | (IA) Solving for the Angles of a Triangle, Problem- Solving Strategy, and Puzzle Act. 1-3  (BI pg. 10-11)  (IA) Unit 1.2 Practice and Application- solving two step, combining like-terms , distributive property  (FA) Unit 1.1-1.2 Quiz |
| Unit 1.3  Solving Equation with Variables on Both Sides  8.EE.7b | SMP 1, 5, 6  How do you solve equations that have variables on both sides? |  | (IA) Equal Perimeter and Area Problems, Act.1-3  (BI pg 16)  (IA) Unit 1.3 Practice and Application-Solving an Equation with Variables on Both Sides, Multi-Step with Distributive Property |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 1

### Critical Areas – Expressions and Equations

### Unit 1 Equations 12 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 1.3b  Solutions of Linear Equations  8.EE.7b | SMP  What indicates an equation has one solution, infinitely many or no solutions? |  | (IA) Unit 1.3b Practice and Application  Mid Unit Quiz 1.1-1.3b |
| Unit 1.4  Rewriting Equations and Formulas | SMP  How can you use a formula for one measurement to write the formula for different measurement? |  | (IA) Using Perimeter and Area Formulas (BI pg 24)  (solve equations for a specified variable)  (IA) Unit 1.4 Practice and Application |
| Unit 1.5  Converting Units of Measurement | SMP  How can you convert from one measurement system to another? |  | (IA) Converting Units of Measurement  (IA) Unit 1.5 Practice and Application  (FA) Unit 1 Test |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 1

## Critical Areas - Geometry

### Unit 2 Transformations 19 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 2.1  Congruent Figures  8.G. 2 | SMP 1, 5, 6  How can you identify congruent triangles? | 6.NS.6b  Reflecting Points  6.G.3  Drawing a Polygon in a Coordinate Plane | (IA) Activity 1-2 Identify Congruent Triangles and Forming Congruent Triangles BI pg. T42  (IA) Practice and Problem Solving |
| Unit 2.2  Translations  8. G. 1  8. G. 2  8. G. 3 | SMP 3, 8  How can you arrange tiles to make a tessellation? |  | (IA) Describing Tessellations  Tessellations and Basic Shapes  Designing Tessellations (BI pg 48)  (IA) Practice and Problem Solving (BI pg.52) |
| Unit 2.3  Reflections  8. G. 1  8. G. 2  8. G. 3 | SMP 3, 4, 6  How can you use reflections to classify a frieze pattern? |  | (IA) Frieze Reflections and Reflections  Reflecting in the Coordinate Plane (BI pg. 54)  (IA) Practice and Problem Solving |
| Unit 2.4  Rotations | SMP 3, 6  What are the three basic ways to move an object in a plane? |  | (IA) Activity 1-2  Three Basic Ways to Move Things  Rotating in the Coordinate Plane (BI pg. 60)  (IA) Practice and Problem Solving  (FA) 2.1-2.4 Quiz |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 1

## Critical Areas - Geometry

### Unit 2 Transformations

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 2.5  Similar Figures  8. G. 4 | SMP 4, 6    How can you use proportions to help make decisions in art, design, and magazine layouts? |  | (IA) Activity 1-2 Reducing Photographs  Creating Designs (BI pg. 70)  (IA) Practice and Problem-Solving |
| Unit 2.6  Perimeter and Area of Similar Figures  8. G. 4 | SMP 1, 4, 6, 8  How do changes in dimensions of similar geometric figures affect the perimeter and area of the figures? |  | (IA) Activity 1-4 Creating Similar Figures  Finding Patterns for Perimeters  Finding Patterns for Areas  Drawing and Labeling Similar Figures  (IA) Practice and Problem-Solving |
| Unit 2.7  Dilations  8. G. 3  8. G. 4 | SMP 3, 4, 6  How can you enlarge or reduce a figure in the coordinate plane? |  | (IA) Activity 1-3  Comparing Triangles in a Coordinate Plane  Drawing Triangles in a Coordinate Plane  Summarizing Transformations  (IA) Practice and Problem-Solving  (FA) 2.5-2.7 Quiz  (FA) Chapter Review and Test |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 2

## Critical Areas - Geometry

### Unit 3 Angles and Triangles 13 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 3.1  Parallel Lines and Transversals  8.G.5 | SMP 6  How can you describe angles formed by parallel lines and transversals? | 7.G.5  Adjacent and Vertical Angles  Complementary and Supplementary Angles | (IA) Activity 1-3 (BI)  1. A Property of Parallel Lines  2. Creating Parallel Lines  3. Using Technology  (IA) Angles, Parallel Lines and Transversals(HOCC)  (IA) Practice and Problem Solving |
| Unit 3.2  Angles of Triangles  8.G.5 | SMP 1, 7, 8  How can you describe the relationships among the angles of a triangle? |  | (IA) Activity 1-3 (BI)  1.Exploring the Interior Angles of a Triangle  2.Interior Angles #2  3.Exploring an Exterior Angle of a Triangle  4.Measuring the Exterior Angles of a Triangle  (IA) Finding the Sum of the Interior Angles of a Triangle (HOCC)  (IA) Practice and Problem Solving  Mid-Unit Quiz 3.1-3.2 |
| Unit 3.3  Angles of Polygons  8.G.5 | SMP 5, 8  How can you find the sum of the interior angle measures and the sum of the exterior angle measures of a polygon? |  | (IA) Activity 1-2 (BI)  1. Exploring the Interior Angles of a Polygon  2. Exploring the Exterior Angles of a Polygon  (IA) Practice and Problem Solving |
| Unit 3.4  Using Similar Triangles  8.G.5 | SMP 2, 5, 8  How can you use angles to tell whether triangles are similar? |  | (IA) Activity 1-3 (BI)  1. Constructing Similar Triangles  2. Using Technology to Explore Triangles  3. Indirect Measurement  (IA) Angle-Angle Similarity (HOCC)  (IA) Practice and Problem Solving  (FA) Unit Quiz 3.3-3.4  (FA) Unit 3 Test |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 2

### Critical Areas -Expressions and Equations

### Unit 4 Graphing and Writing Linear Equations 19 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 4.1  Graphing Linear Equations  8.EE.5 | SMP 3, 4, 5  How can you recognize a linear equation? How do you draw its graph?  How does slope represent a unit rate? | 6.EE.2c  Evaluating Expressions  6.NS.6c  Plotting Points | (IA) Activity 1-2  Graphing a Linear Equation  Using a Graphing Calculator  (IA) Practice Exercises |
| Unit 4.2  Slope of a Line  8.EE.6 | SMP 1, 2, 6  How can you use the slope of a line to describe the line? |  | (IA) Activity 1-2  Finding the Slope of a Line  Using Similar Triangles  Drawing Lines with Given Slopes  (IA) Practice Exercises |
| Unit 4.3  Graphing Proportional Relationships  8.EE.5  8.EE.6 | SMP 2, 3a, 6  How can you describe the graph of the equation y=mx? |  | (IA) Activity 1-3  Identifying Proportional Relationships  Analyzing Proportional Relationships  Deriving an Equation  (IA) Practice and Problem Solving  (SA) Reflective Focus Question Summarize the similarities and differences on proportional and nonproportional linear relationships  Mid-Unit Quiz 4.1-4.3 |
| Unit 4.4  Graphing Linear Equations in Slope-Intercept Form  8.EE.6 | SMP 1, 2, 3, 6  How can you describe the graph of the equation y = mx + b? |  | (IA) Activity 1-2  Analyzing Graphs of Lines  Deriving an Equation  (IA) Practice and Problem Solving |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 2

## Critical Areas – Expressions and Equations

### Unit 4 Graphing and Writing Linear Equations 19 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 4.5  Graphing Linear Equations in Standard Form  8.EE.6 | SMP 7,  How can you describe the graph of the equation ax + by = c? |  | (BI-IA)Activity 1 -2  Using a Table to Plot Points  Rewriting an Equation  (IA) Practice and Problem Solving  (FA) 4.4-4.5 Quiz |
| Unit 4.6  Writing Equations in Slope-Intercept Form  8.F.4 | SMP 1, 4  How can you write an equation of a line when you are given the slope and y-intercept of the line? |  | (BI-IA) Activity 1 -3  Writing Equation of Lines  Describing a Parallelogram  Interpreting the Slope and the y-intercept  (IA) Practice and Problem Solving |
| Unit 4.7  Writing Equations in Point-Slope Form  8.F.4 | SMP 1, 3, 7  How can you write the equation of a line if given the slope and a point? |  | (BI-IA) Activity 1 -3 pg. 184  Writing Equations of Lines  Deriving an Equation  Writing an Equation  (IA) Practice and Problem Solving  (FA) 4.6-4.7 Quiz  (FA) Unit 4 Test |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 3

**Critical Areas – Expressions and Equations**

### Unit 5 Systems of Linear Equations 13 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 5.1  Solving Systems of Linear Equations by Graphing  8.EE.8a  8.EE.8b  8.EE.8c | SMP 1, 2, 5, 6  How can you solve a system of linear equations? | 6. EE.3  Combining Like-Terms  8.EE.7b  Solving Multi-Step Equations | (BI-IA) Activities 1-4  Writing a System of Linear Equations  Using a Table to Solve a System  Using a Graph to Solve a System  Using a Graphing Calculator  (IA) Practice and Problem Solving |
| Unit 5.2  Solving Systems of Linear Equations by Substitution  8.EE.8b  8.EE.8c | SMP 1, 7  How can you use substitution to solve a system of linear equations? |  | (BI-IA) Activities 1-3  Using Substitution to Solve a System  Writing and Solving a System of Equations  Solving a Secret Code  (IA) Practice and Problem Solving  Mid-Unit Quiz 5.1-5.2 |
| Unit 5.3  Solving Systems of Linear Equations by Elimination  8.EE.8b  8.EE.8c | SMP 1, 3a, 7  How can you use elimination to solve a system of equations? |  | (BI-IA) Activities 1-3  Using Elimination to Solve a System 1 + 2  Solving a Secret Code  (IA) Practice and Problem Solving |
| Unit 5.4  Solving Special Systems of Linear Equations  8.EE.7 8.EE.8b  8.EE.8a 8.EE.8c | SMP 1, 7, 8  Can a system of equations have no solution or many solutions? |  | (BI-IA) Activities 1-3  Writing a System of Linear Equations  Using a Table to Solve a System  Using a Graph to Solve a Puzzle  (IA) Practice and Problem Solving  (FA) Unit 5 Test |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 3

## Critical Areas - Functions

### Unit 6 Functions 14 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 6.1  Relations and Functions  8. F. 1 | SMP 1b, 2,  How can you use a mapping diagram to show the relationship between two data sets? | 5.OA.3  Identifying Patterns  7.NS.3  Evaluating Algebraic Expressions | (IA) Activities 1-3 (BI)  Constructing Mapping Diagrams  Describing Situations  Interpreting Mapping Diagrams  (IA) Using a Function Machine (HOCC)  (IA) Practice and Problem Solving (BI) |
| Unit 6.2  Representations of Functions  8. F. 1 | SMP 3  What are different ways a function can be represented? |  | (IA) Activities 1-3 (BI)  Describing a Function  Using a Table  Using a Graph  Interpreting a Graph  (IA) What’s My Function (HOCC)  (IA) Practice and Problem Solving (BI) |
| Unit 6.3  Linear Functions  8. F. 2  8. F. 3  8. F. 4 | SMP 1, 8  How can you use a function to describe a linear pattern? |  | (IA) ACTIVITY 1-2 (BI)  1. Finding Linear Patterns  2. Finding Linear Patterns #2  (IA) “What’s My Function?”(HOCC)  (IA) Practice and Problem Solving (BI)  Mid-Unit Quiz 6.1-6.3 |
| Unit 6.4  Comparing Linear and Nonlinear Functions  8. F. 3 | SMP 4, 6, 7, 8  How can you recognize what a pattern is linear or nonlinear? |  | (IA) ACTIVITY 1-2 (BI)  1. Finding Patterns for Similar Figures  2. Comparing Linear and Nonlinear Functions  (IA) “A Function Scavenger Hunt” (HOCC)  (IA) Practice and Problem Solving (BI) |
| Unit 6.5  Analyzing and Sketching Graphs  8. F. 5 | SMP 2, 3, 6  How can you use a graph to represent relationships between quantities without using numbers? |  | (IA) ACTIVITY 1-4 (BI)  1. Interpret a Graph  2. Matching Situations to Graphs  3.Comparing Graphs  4.Comparing Graphs #2  (IA) Describing a Graph (HOCC)  (IA) Practice and Problem Solving (BI) |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 3

## Critical Areas - Geometry

### Unit 7 Real Numbers and the Pythagorean Theorem 15 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 7.1  Finding Square Roots  8.EE.2 | SMP 1a, 6  How can you find the dimensions of a square or a circle when you are given its area? | 5.NBT.3b  Comparing Decimals  7.NS.1  7.NS.2  Using Order of Operations | (IA) Activities 1-3 (BI)  -Finding Square Roots  -Using Square Roots  -The Period of a Pendulum  (IA) Creating Squares and Cubes (HOCC)  (IA) Practice and Problem Solving |
| Unit 7.2  Finding Cube Roots  8.EE.2 | SMP 1, 2, 5, 6  How is a cube root of a number different from the square root of a number? |  | (IA) Activities 1-2 (BI)  -Finding Cube Roots  -Using Prime Factorization to Find Cube Roots  (IA) Practice and Problem Solving |
| Unit 7.3  The Pythagorean Theorem  8.EE.2  8.G.6  8.G.7  8.G.8 | SMP 3, 4, 6  How are the lengths of the sides of a right triangle related? |  | (IA) Activities 1-3 (BI)  -Discovering the Pythagorean Theorem  -Using the Pythagorean Theorem in Two Dimensions  -Using the Pythagorean Theorem in Three Dimensions  (IA) “I Can Explain It”  “The Pythagorean Theorem”(HOCC)  (IA) Practice and Problem Solving  (FA) 7.1-7.3 Quiz |
| Unit 7.4  Approximating Square Roots  8.NS.1  8.NS.2  8.EE.2 | SMP 1a, 3, 4, 5  How can you find decimal approximations of square roots that are not rational? |  | (IA) Activities 1-3 (BI)  1. Approximating Square Roots  2 -3 Approximating Square Roots Geometrically  (IA) “Math Tic-Tac-Toe” (HOCC)  “Zeroing-In”  “Irrational Numbers-They’re Insane”  (IA) Practice and Problem Solving |
| Unit 7.5  Using the Pythagorean Theorem  8.EE.2  8.G.6  8.G.7  8.G.8 | SMP 3, 4, 7  In what other ways can you use the Pythagorean Theorem? |  | (IA) Activities 1-3 (BI)  1. Analyzing Converses of Statements  2. The Converse of the Pythagorean Theorem  3. Developing the Distance Formula  (IA) “Applying the Pythagorean Theorem”(HOCC)  “Finding the Distance”  (IA) Practice and Problem Solving  (FA) 7.4-7.5 Quiz  (FA) Unit 7 Test |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 4

## Critical Areas - Geometry

### Unit 8 Volume and Similar Solids 13 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 8.1  Volume of Cylinders  8.G.9 | SMP 1, 2, 3, 4,  How can you find the volume of a cylinder? | 7.G.6  Finding the Area of a Composite Figure  7.G.4  Finding the Areas of Circles | (IA) Activity 1-4 (BI)  1. Finding a Formula Experimentally  2.Making a Business Plan  3. Science Experiment  4. Comparing Cylinders  (IA) “Finding the Volume”(HOCC)  (IA) Practice and Problem Solving |
| Unit 8.2  Volume of Cones  8.G.9 | SMP 2, 4  How can you find the volume of a cone? |  | (IA) Activity 1-3 (BI)  1. Finding a Formula Experimentally  2. Summarizing Volume Formulas  3. Volumes of Oblique Solids  (IA) “Finding the Volume”(HOCC)  (IA) Practice and Problem Solving  (FA) 8.1-8.2 Quiz |
| Unit 8.3  Volume of Spheres  8.G.9 | SMP 1, 4, 7  How can you find the volume of a sphere? |  | (IA) Activity 1-3 (BI)  1. Exploring the Volume of a Sphere  2. Deriving the Formula for the Volume of a Sphere  3. Formula for the Volume of a Sphere 2  (IA) Practice and Problem Solving |
| Unit 8.4  Surface Areas and Volumes of Similar Solids  8.G.9 | SMP 8  When the dimensions of a solid increase by a factor of k, how does the surface area change? How does the volume change? |  | (IA) Activity 1-2 (BI)  1. Comparing Surface Areas and Volumes #1  2. Comparing Surface Areas and Volumes #2  (IA) “Out of This World”(HOCC)  (IA) Practice and Problem Solving  (FA) 8.3-8.4 Quiz  (FA) Unit 8 Test |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 4

## Critical Areas

### Unit 9 Data Analysis and Displays 12 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 9.1  Scatter Plots  8.SP.1 | SMP 1a, 3, 4, 5, 6  How can you construct and interpret a scatter plot? | 6.NS.6c  Plotting Points  8.F.4  Writing an Equation Using Two Points | (IA) Activities 1-3  1. Constructing a Scatter Plot  2. Constructing a Scatter Plot #2  3. Identifying Scatter Plots  (IA) Height-Arm Span Scatter Plot |
| Unit 9.2  Lines of Fit  8.SP.1  8.SP.2  8.SP.3 | SMP 1a, 4, 5,  How can you use data to predict an event? |  | (IA) Activities 1-2 (BI)  1. Representing Data by a Linear Equation  2. Representing Data by a Linear Equation #2  (IA) “Drawing the Line of Best Fit” (HOCC)  (IA) Practice and Problem Solving  (FA) 9.1-9.2 Quiz |
| Unit 9.3  Two-Way Tables  8.SP.4 | SMP 2, 3a  How can you read and make a two-way table? |  | (IA) Activities 1-2 (BI)  1. Reading a Two-Way Table  2. Analyzing Data  (IA) “Analyzing Two-Way Tables” (HOCC)  (IA) Practice and Problem Solving |
| Unit 9.4  Choosing a Data Display  8.SP.1 | SMP 3, 4. 6  How can you display data in a way that helps you make decisions? |  | (IA) Activities 1-2  1. Displaying Data  2. Statistics Project  (IA) Practice and Problem Solving |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 4

## Critical Areas – Expressions and Equations

### Unit 10 Exponents and Scientific Notation 18 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 10.1  Exponents  8.EE.1 | SMP 6, 8  How can you use exponents to write numbers? | 6.EE.1  Using Order of Operations  6.NS.3  Multiplying and Dividing Decimals | (IA) Activity 1-4 (BI)  1. Using Exponent Notation  2. Using Exponent Notation #2  3. Writing Powers as Whole Numbers  4. Writing a Power  (IA) What Does It Equal? (HOCC)  (IA) Practice and Problem Solving |
| Unit 10.2  Product of Powers Property  8.EE.1 | SMP  How can you use inductive reasoning to observe patterns and write general rules involving properties of exponents? |  | (IA) Activity 1-4 (BI)  1. Finding Products of Powers  2. Writing a Rule for Powers of Powers  3. Writing a Rule for Powers of Products  4. The Penny Puzzle  IA) Practice and Problem Solving |
| Unit 10.3  Quotient of Powers Property  8.EE.1 | SMP 4, 6, 7, 8  How can you divide two powers that have the same base? |  | (IA) Activity 1-2 (BI)  1. Finding the Quotient of Powers  2. Comparing Volumes  IA) Practice and Problem Solving |
| Unit 10.4  Zero and Negative Exponents  8.EE.1 | SMP 1a, 2, 3, 8  How can you evaluate a nonzero number with an exponent of zero? How can you evaluate a nonzero number with a negative integer exponent? |  | (IA) Activity 1-4 (BI)  1. Using the Quotient of Powers Property  2. Using the Product of Powers Property  3. Using the Product of Powers Property #2  4. Using a Place Value Chart  (IA) Practice and Problem Solving  Mid-Unit Quiz 10.1-10.4 |

Common Core (CC) Standards Curriculum Map Grade 8

## Susan Jedrey Quarter 4

## Critical Areas – Expressions and Equations

### Unit 10 Exponents and Scientific Notation 18 Days

|  |  |  |  |
| --- | --- | --- | --- |
| CC Standard and Content | Mathematical Practices and Essential Questions | Prior Learning | Instructional Activities(IA)  Formative Assessments(FA)  Summative Assessments(SA) |
| Unit 10.5  Reading Scientific Notation  8.EE.3  8.EE.4 | SMP 2, 5, 7  How can you read numbers that are written in scientific notation? |  | (IA) Activity 1-4  1. Very Large Numbers  2. Very Small Numbers  3. Powers of 10 Matching Game  4. Choosing Appropriate Units  (IA) Practice and Problem Solving |
| Unit 10.6  Writing Scientific Notation  8.EE.3  8.EE.4 | SMP 1a, 2, 4, 5, 6  How can you write a number in scientific notation? |  | (IA) Activity 1-3 (BI)  1. Finding pH Levels  2. Writing Scientific Notation  3. Making a Scale Drawing  (IA) Practice and Problem Solving |
| Unit 10.7  Operations in Scientific Notation  8.EE.3  8.EE.4 | SMP 1, 3a, 5, 7  How can you perform operations with numbers written in scientific notation? |  | (IA) Activity 1-4 (BI)  1. Adding Numbers in Scientific Notation  2. Adding Numbers in Scientific Notation #2  3. Multiplying Numbers in Scientific Notation  4. Using Scientific Notation to Estimate  (IA) Practice and Problem Solving  (FA) Mid-Unit Quiz 10.5-10.7  (FA) Unit 10 Test |