**Rockford Public Schools**

**Curriculum Pacing Guide**

**Course: Pre-Algebra (8th Grade)**

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| **Week 1 Lessons*** Common Assessment MP1 Pre-Test
* 1-1 Variables and Expressions
* 1-2 Algebraic Expressions
 | **HSCE/GLCE/CCSS** |
| **Week 2 Lessons*** 1-3 Integers and Absolute Value
* 1-4 Adding Integers
* 1-5 Subtracting Integers
* 1-6 Multiplying and Dividing Integers
 | **HSCE/GLCE/CCSS** |
| **Week 3 Lessons*** 1-7 Solving Equations by Adding or Subtracting
* 1-8 Solving Equations by Multiplying and Dividing
* 1-9 Introduction to Inequalities
* Review
 | **HSCE/GLCE/CCSS*** 8 EE 7
 |
| **Week 4 Lessons*** Test Chapter 1
* 2-1 Rational Numbers
* 2-2 Comparing and Ordering Rational Numbers
 | **HSCE/GLCE/CCSS** |
| **Week 5 Lessons*** 2-3 Adding and Subtracting Rational Numbers
* 2-4 Multiplying Rational Numbers
* 2-5 Diving Rational Numbers
* 2-6 Adding and Subtracting with Unlike Denominators
 | **HSCE/GLCE/CCSS*** 8 EE 7
 |
| **Week 6 Lessons*** 2-7 Solving Equations with Rational Numbers
* 2-8 Solving Two-Step Equations
* Review
* Test Ch. 2
* MEAP
 | **HSCE/GLCE/CCSS*** 8 EE 7
 |
| **Week 7 Lessons*** 11-1 Simplifying Algebraic Expressions
* 11-2 Solving Multi-Step Equations
* 11-3 Solving Equations with Variables on Both Sides
 | **HSCE/GLCE/CCSS**Section 11.1: Simplify Expressions6th: [CCSS.Math.Content.6.EE.A.3](http://www.corestandards.org/Math/Content/6/EE/A/4) & [CCSS.Math.Content.6.EE.A.4](http://www.corestandards.org/Math/Content/6/EE/A/4)7th: [CCSS.Math.Content.7.EE.A.1](http://www.corestandards.org/Math/Content/6/EE/A/4) & [CCSS.Math.Content.7.EE.A.2](http://www.corestandards.org/Math/Content/6/EE/A/4)8t Section 11.2: Solving Multi-step equations6th: [CCSS.Math.Content.6.EE.B.6](http://www.corestandards.org/Math/Content/6/EE/A/4) & [CCSS.Math.Content.6.EE.B.7](http://www.corestandards.org/Math/Content/6/EE/A/4)7th: [CCSS.Math.Content.7.EE.B.4](http://www.corestandards.org/Math/Content/6/EE/A/4) & [CCSS.Math.Content.7.EE.B.4a](http://www.corestandards.org/Math/Content/6/EE/A/4)8th: [CCSS.Math.Content.8.EE.C.7a](http://www.corestandards.org/Math/Content/6/EE/A/4) & [CCSS.Math.Content.8.EE.C.7b](http://www.corestandards.org/Math/Content/6/EE/A/4) |
|  **Week 8 Lessons*** 11-4 Solving Inequalities by Multiplying and Dividing
* 11-5 Solving Two-Step Inequalities
* 11-6 Systems of Inequalities
 | Section 11.4: Solving inequalities by mult/div6th: [CCSS.Math.Content.6.EE.B.5](http://www.corestandards.org/Math/Content/6/EE/A/4) & [CCSS.Math.Content.6.EE.B.8](http://www.corestandards.org/Math/Content/6/EE/A/4)7th: [CCSS.Math.Content.7.EE.B.4](http://www.corestandards.org/Math/Content/6/EE/A/4) & [CCSS.Math.Content.7.EE.B.4b](http://www.corestandards.org/Math/Content/6/EE/A/4)8th: NoneSection 11.5: Solving two-step inequalities 6th: [CCSS.Math.Content.6.EE.B.5](http://www.corestandards.org/Math/Content/6/EE/A/4) & [CCSS.Math.Content.6.EE.B.8](http://www.corestandards.org/Math/Content/6/EE/A/4)7th: [CCSS.Math.Content.7.EE.B.4](http://www.corestandards.org/Math/Content/6/EE/A/4) & [CCSS.Math.Content.7.EE.B.4b](http://www.corestandards.org/Math/Content/6/EE/A/4)8th: NoneSection 11.6: Systems of equations 6th: None7th: None\*8th: [CCSS.Math.Content.8.EE.C.8a](http://www.corestandards.org/Math/Content/6/EE/A/4) & [CCSS.Math.Content.8.EE.C.8b](http://www.corestandards.org/Math/Content/6/EE/A/4) & [CCSS.Math.Content.8.EE.C.8c](http://www.corestandards.org/Math/Content/6/EE/A/4)\*The standard mentions graphing systems which is not part of 11.6. |
|  **Week 9 Lessons*** 3-1 Ordered Pairs
* 3-2 Graphing on a Coordinate Planes
 | Slop introduction worksheet |
| **Week 10 Lessons*** 3-3 Interpreting Graphs and Tables
* 3-4 Functions
* 3-5 Equations, Tables, and Graphs
* 3-6 Arithmetic Sequences
 | **HSCE/GLCE/CCSS*** 8 F 2
* 8 F 5
* 8 F 4
* 8 F 1
 |
| **Week 11 Lessons*** Review
* Test Ch. 3
* Common Assessment MP1 Post-Test
* Common Assessment MP2 Pre-Test
* 4-1 Exponents
* 4-2 Looking For a Pattern
 | **HSCE/GLCE/CCSS*** Midpoint and Distance formula suppliments
 |
| **Week 12 Lessons*** 4-3 Property of Exponents
* 4-4 Scientific Notation
* 4-5 Square & Square Roots
* Cubes/Cubed Root
 | **HSCE/GLCE/CCSS**8 EE 1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, 32 × 3–5 = 3–3 = 1/33 = 1/27.*8 EE 2 Use square root and cube root symbols to represent solutions toequations 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 √2 is irrational.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 × 108 and the population of the world as 7 × 109, and determine that the world population is more than 20 times larger.* |
| **Week 13 Lessons*** 4-6 Estimating Square Roots
* 4-7 Real Numbers
* 4-8 Pythagorean Theorem
* Proof of Pythagorean Theorem
 | **HSCE/GLCE/CCSS**8 NS 1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.8 NS 2 Use rational approximations of irrational numbers to compare the sizeof irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., 2). *For example, by truncating the decimal expansion of* √*2, show that* √*2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*8 G 6 Explain a proof of the Pythagorean Theorem and its converse.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 dimensions8 G 8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. |
| **Week 14 Lessons*** Review/ Thanksgiving
* Chapter 4 Test

Thanksgiving Break | **HSCE/GLCE/CCSS** |
| **Week 15 Lessons*** 5-1 Ratios and Proportions
* 5-2 Ratios, Rates, Unit Rates
* 5-4 Solving Proportions
* 5-5 Similar Figures
 | **HSCE/GLCE/CCSS** |
| **Week 16 Lessons*** 5-6 Dilations
* Journal Writing (SIP)
* 5-7 Indirect Measurements
* 5-8 Scale Drawing and Scale Models
 | **HSCE/GLCE/CCSS**8 G 3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. |
| **Week 17 Lessons*** Review
* Test Ch. 5
* 6-1 Relating Decimals, Fractions, Percents
* 6-2 Estimating with Percents
 | **HSCE/GLCE/CCSS** |
| **Week 18 Lessons*** 6-3 Finding Percents
* 6-4 Finding a Number when Percent is Know
* 6-5 Percent Increase and Decrease
 | **HSCE/GLCE/CCSS** |
| **Week 19 Lessons*** 6-6 Applications of Percents
* 6-7 Simple Interest
* Review
* Test Ch. 6
 | **HSCE/GLCE/CCSS** |
| **Week 20 Lessons*** Exam Review
* Exams
* Common Assessment MP2 Post-Test/Exam
* Common Assessment MP3 Pre-Test
 | **HSCE/GLCE/CCSS** |
| **Week 21 Lessons*** 7-1 Points, Lines, Planes, and Angles
* 7-2 Parallel and Perpendicular Lines
* 7-3 Angles and Triangles
* 7-4 Classifying Polygons
 | **HSCE/GLCE/CCSS**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.* |
| **Week 22 Lessons*** 7-5 Coordinate Geometry
* 7-6 Congruence
* 7-7 Transformations
* Worksheet Review
 | **HSCE/GLCE/CCSS**8 G 11. Verify experimentally the properties of rotations, reflections, andtranslations:a. Lines are taken to lines, and line segments to line segments of thesame length.b. Angles are taken to angles of the same measure.c. Parallel lines are taken to parallel lines.8 G 2 Understand that a two-dimensional figure is congruent to another ifthe second can be obtained from the first by a sequence of rotations,reflections, and translations; given two congruent figures, describe asequence that exhibits the congruence between them.8 G 3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.8 G 4 Understand that a two-dimensional figure is similar to another if thesecond can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two dimensionalfigures, describe a sequence that exhibits the similaritybetween them. |
| **Week 23 Lessons*** Review
* Test Ch. 7
* 8-1 Perimeter and Area of Rectangles and Parallelograms
* Writing Journal (SIP)
 | **HSCE/GLCE/CCSS** |
| **Week 24 Lessons*** 8-2 Perimeter and Area of Triangle and Trapezoids
* 8-3 Circles
* 8-5 Volume of Prisms and Cylinders
* 8-6 Volume of Pyramids and Cones
 | **HSCE/GLCE/CCSS*** 8 G 9
 |
| **Week 25 Lessons*** 8-7 Surface Area of Prisms and Cylinders
* 8-8 Surface Area of Pyramids and Cones
* 8-9 Spheres
* Review
 | **HSCE/GLCE/CCSS*** 8 G 9
 |
| **Week 26 Lessons*** Test Ch. 8
* Common Assessment MP3 Post-Test
 | **HSCE/GLCE/CCSS** |
| **Week 27 Lessons*** Review
* Test
* Spring Break
 | **HSCE/GLCE/CCSS** |
| **Week 28 Lessons*** Return from break
* 9-3 Measures of Central Tendency
* 9-5 Displaying Data
* 9-7 Scatter Plots
* Box and Whisker Lab
 | **HSCE/GLCE/CCSS*** 8.SP.1
* 8.SP.2
* 8.SP.4
* PBL Scatterplot, box and whisker and Frequency table with correlations
 |
| **Week 29 Lessons*** 12-1
* 12-2
* 12-3
 | **HSCE/GLCE/CCSS*** **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.
* **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
* **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.
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| **Week 30 Lessons*** 12-4
* 12-7
* Page 666
* Quiz
 | **HSCE/GLCE/CCSS*** **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.
* **8.EE.8.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.
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| **Week 31 Lessons*** 13.4
* 13-5
* 13-6
 | **HSCE/GLCE/CCSS*** **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. (Function notation is not required in Grade 8.)
* **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.
* **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.
* **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.
* **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.
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| **Week 32 Lessons*** 14-1
* 14-2
* 14-3
* 14-4
 | **HSCE/GLCE/CCSS*** No CCSS for chapter 14, but skills are needed for Algebra next year. If time remains, get to this.
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| **Week 33 Lessons*** 14-5
* 14-6
* Chapter 14 TEST
* Exam Review
 | **HSCE/GLCE/CCSS*** No CCSS for chapter 14, but skills are needed for Algebra next year. If time remains, get to this.
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| **Week 34 Lessons*** Exam Week
 | **HSCE/GLCE/CCSS** |