**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 Expressions  6th: [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 equations  6th: [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/div  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: None  Section 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: None  Section 11.6: Systems of equations  6th: None  7th: 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 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 √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 size  of 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 dimensions  8 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, and  translations:  a. Lines are taken to lines, and line segments to line segments of the  same 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 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.  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 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. |
| **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. |
| **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. |
| **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. |
| **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. |
| **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. |
| **Week 34 Lessons**   * Exam Week | **HSCE/GLCE/CCSS** |