

# Centerville Jr. High School Curriculum Mapping

## Honors Algebra

1<sup>st</sup> Nine Weeks

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| Unit/<br>Chapter/<br>Lesson | Indiana<br>Standard(s) | Key Questions                                            | Resources/Activities                   | Vocabulary                                                                                            | Assessments                                 |
|-----------------------------|------------------------|----------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 1.0.2                       | RNE.1 &<br>RNE.2       | How do you classify and use real numbers?                | 1. Textbooks<br>2. Video<br>3. Laptops | Real number,<br>rational number,<br>irrational number,<br>integer, whole<br>number, natural<br>number | 1. Homework<br>2. In Class Work<br>3. Tests |
| 1.2.1                       | L.1 & L.2              | How do you translate a verbal sentence into an equation? |                                        | Expression,<br>equation,<br>constant,<br>coefficient, like<br>terms                                   |                                             |
| 1.2.2                       | L.1 & L.2              | How do you solve a one-step equation?                    |                                        | Simplify,<br>equivalent<br>equations                                                                  |                                             |
| 1.2.3                       | L.1 & L.2              | How do you solve a two-step equation?                    |                                        | Multi-step<br>equations,<br>integers                                                                  |                                             |
| 1.2.4                       | L.1 & L.2              | How do you solve a multi-step equation?                  |                                        | Identity                                                                                              |                                             |
| 1.2.5                       | L.9                    | How do you solve absolute value equations?               |                                        | Absolute value                                                                                        |                                             |
| 1.2.6                       | L.3                    | How do you solve a proportion?                           |                                        | Ratio, proportion                                                                                     |                                             |
| 1.2.8                       | L.11                   | How do you manipulate formulas algebraically?            |                                        | Formula, area,<br>perimeter,<br>dimensional<br>analysis                                               |                                             |

|                    |                                    |                                                                                      |                                                             |                                                                                   |                                             |
|--------------------|------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------|
| 1.2.9              | L.1 & L.2                          | How do you write and solve an equation for a mixture problem?                        |                                                             | Weighted average                                                                  |                                             |
| 1.1.6              | F.1 & F.3                          | What is the coordinate plane and how do you graph on one?                            | 1. Textbooks<br>2. Laptops                                  | Coordinate plane, axes, origin                                                    | 1. Homework<br>2. In Class Work<br>3. Tests |
| 1.1.6 & 1.1.7      | F.1, F.3 & F.4                     | How do you determine whether a relation is a function?                               |                                                             | Mapping, inverse, relation, solution, domain, range, function, vertical line test |                                             |
| 1.1.8              | F.2                                | How do you interpret the behavior of a graph?                                        |                                                             | Intercept, extrema, maximum, minimum                                              |                                             |
| 2.3.1              | L.4 & L.5                          | How do you graph a linear equation on a coordinate plane?                            | 1. Textbooks<br>2. Graphing Calculators<br>3. Laptops       | Linear equation, standard form, x-intercept, y-intercept                          | 1. Homework<br>2. In Class Work<br>3. Tests |
| 2.3.3              | L.5                                | What is slope?                                                                       |                                                             | Slope, rate of change                                                             |                                             |
| LAB: Flip 'n Slide | <i>GM.3, GM.4, GM.5 &amp; GM.6</i> | What effects do reflections, translations, and rotations have on a geometric figure? | 1. Textbooks<br>2. Laptops<br>3. NCTM Illuminations website | Reflection, translation, rotation                                                 | Completed Lab materials                     |

**Curriculum Mapping**  
**Honors Algebra**  
 2<sup>nd</sup> Nine Weeks

| Unit/<br>Chapter/<br>Lesson | Indiana<br>Standard(s) | Key Questions                                                    | Resources/Activities                                  | Vocabulary                       | Assessments                                 |
|-----------------------------|------------------------|------------------------------------------------------------------|-------------------------------------------------------|----------------------------------|---------------------------------------------|
| 2.4.1                       | L.4, L.5 & L.6         | When and how do you use slope-intercept form?                    | 1. Textbooks<br>2. Graphing Calculators<br>3. Laptops | Slope-intercept form             | 1. Homework<br>2. In Class Work<br>3. Tests |
| 2.4.2                       | L.4, L.5 & L.6         | How do you write a slope-intercept equation?                     |                                                       | Linear extrapolation             |                                             |
| 2.4.3                       | L.4 & L.6              | When and how do you use point-slope form?                        |                                                       | Point-slope form                 |                                             |
| 2.4.4                       | L.4                    | How do the equations of parallel and perpendicular lines relate? |                                                       | Parallel, perpendicular          |                                             |
| 2.4.5                       | DS.2 & DS.3            | How do you analyze a scatter plot and what for what is it used?  |                                                       | Bivariate data, scatterplot      |                                             |
| 2.4.6                       | DS.2 & DS.3            | How do you use equations of best-fit lines?                      |                                                       | Best-fit line, linear regression |                                             |
| 2.5.1 & 2.5.2               | L.1 & L.2              | How do you solve one-step inequalities?                          | 1. Textbooks<br>2. Laptops                            | Set-builder notation, inequality | 1. Homework<br>2. In Class Work<br>3. Tests |
| 2.5.3                       | L.1 & L.2              | How do you solve multi-step inequalities?                        |                                                       |                                  |                                             |

|                      |               |                                                         |                                                       |                                                          |                                             |
|----------------------|---------------|---------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------|---------------------------------------------|
| 2.5.4                | L.8           | What is a compound inequality and how do you solve one? |                                                       | Compound inequality, intersection, union                 |                                             |
| 2.5.6                | L.7           | How do you graph inequalities on a coordinate plane?    |                                                       | Half-plane, boundary                                     |                                             |
| 2.6.1                | SEI.1 & SEI.3 | What is a system of equations and how do you solve it?  | 1. Textbooks<br>2. Graphing Calculators<br>3. Laptops | System, dependent, independent, consistent, inconsistent | 1. Homework<br>2. In Class Work<br>3. Tests |
| 2.6.2                | SEI.2 & SEI.3 |                                                         |                                                       |                                                          |                                             |
| 2.6.3, 2.6.4 & 2.6.5 | SEI.2 & SEI.3 |                                                         |                                                       |                                                          |                                             |
| 2.6.6                | SEI.4         |                                                         |                                                       |                                                          |                                             |

# Curriculum Mapping

## Honors Algebra

3<sup>rd</sup> Nine Weeks

| Unit/<br>Chapter/<br>Lesson | Indiana<br>Standard(s) | Key Questions                                                                     | Resources/Activities                                  | Vocabulary                                                   | Assessments                                 |
|-----------------------------|------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------|
| 3.7.1 &<br>3.7.2            | RNE.3                  | What are the rules for simplifying monomials?                                     | 1. Textbooks<br>2. Graphing Calculators<br>3. Laptops | Monomial, zero exponent, negative exponent                   | 1. Homework<br>2. In Class Work<br>3. Tests |
| 3.7.3                       | RNE.3                  | How do you evaluate and rewrite expressions involving rational exponents?         |                                                       | Rational exponent, cube root, nth root, exponential equation |                                             |
| 3.7.4                       | RNE.3                  | How do you simplify numbers in scientific notation?                               |                                                       | Scientific notation                                          |                                             |
| 3.7.5                       | QE.1 & QE.3            | What are the characteristics of an exponential function and how do you graph one? |                                                       | Exponential function                                         |                                             |
| 3.7.6                       | QE.2                   | What is exponential growth? What is exponential decay?                            |                                                       | Exponential growth, exponential decay, compound interest     |                                             |
| 3.8.1                       | RNE.7                  | How do you add and/or subtract polynomials?                                       | 1. Textbooks<br>2. Laptops                            | Polynomial, binomial, trinomial, degree                      | 1. Homework<br>2. In Class Work<br>3. Tests |
| 3.8.2 &<br>3.8.3            | RNE.7                  | How do you multiply polynomials?                                                  |                                                       | FOIL                                                         |                                             |
| 3.8.4                       | RNE.7                  | How do you multiply special products?                                             |                                                       | Differences of squares                                       |                                             |

|               |                         |                                                                                                                |                                                       |                                                       |                                             |
|---------------|-------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|---------------------------------------------|
| 3.8.5         | RNE.7                   | How do you find prime factorizations of monomials?                                                             |                                                       | Prime, composite, prime factorization, GCF            |                                             |
| 3.8.6         | RNE.6                   | How do you factor trinomials?                                                                                  |                                                       | Factoring                                             |                                             |
| 3.8.7         | RNE.6                   | How do you factor trinomials with a leading coefficient other than one?                                        |                                                       | Prime polynomial                                      |                                             |
| 3.8.8 & 3.8.9 | RNE.6                   | How do you recognize and factor perfect squares? How do you solve equations involving a difference of squares? |                                                       | Perfect square trinomial                              |                                             |
| 3.9.1 & 3.9.2 | QE.3, QE.5, QE.6 & QE.7 | How do you graph quadratic functions? How does the graph of a quadratic correspond to its solution(s)?         | 1. Textbooks<br>2. Graphing Calculators<br>3. Laptops | Quadratic function, parabola, vertex, symmetry, roots | 1. Homework<br>2. In Class Work<br>3. Tests |
| 3.9.5         | QE.4                    | How do you use the quadratic formula and why would you want to?                                                |                                                       | Quadratic formula, discriminant                       |                                             |
| 3.9.6         | QE.1                    | How do you identify graphs from data?                                                                          |                                                       |                                                       |                                             |

## Curriculum Mapping

### Honors Algebra

4<sup>th</sup> Nine Weeks

| Unit/<br>Chapter/<br>Lesson | Indiana<br>Standard(s)                           | Key Questions                                                                 | Resources/Activities                                  | Vocabulary                                  | Assessments                                 |
|-----------------------------|--------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------|---------------------------------------------|
| 4.10.2                      | RNE.3 &<br>RNE.4                                 | How do you simplify radical expressions?                                      | 1. Textbooks<br>2. Graphing Calculators<br>3. Laptops | Radical<br>expression,<br>conjugate         | 1. Homework<br>2. In Class Work<br>3. Tests |
| 4.10.3                      | RNE.4                                            | How do you perform rules of arithmetic on radical expressions?                |                                                       |                                             |                                             |
| 4.10.4                      | RNE.3 &<br>RNE.4                                 | How do you solve equations involving radical expressions?                     |                                                       | Radical equation,<br>extraneous<br>solution |                                             |
| 4.10.5                      | <i>GM.7,</i><br><i>GM.8 &amp;</i><br><i>GM.9</i> | What is the Pythagorean theorem and when is it used?                          |                                                       | Hypotenuse, legs,<br>Pythagorean<br>triple  |                                             |
| 4.11.3                      | RNE.5                                            | How do you simplify rational expressions?                                     |                                                       | Rational<br>expression,<br>excluded values  |                                             |
| 4.11.4                      | RNE.5                                            | How do you multiply and divide rational expressions?                          |                                                       | Dimensional<br>analysis                     |                                             |
| 4.11.6                      | RNE.5                                            | How do you add and/or subtract rational expressions?                          |                                                       | LCM, least<br>common<br>denominator         |                                             |
| PST: Walk<br>the Line       | <i>GM.7,</i><br><i>GM.8 &amp;</i><br><i>GM.9</i> | How do you apply the Pythagorean Theorem to find distance between two points? | 1. Textbooks<br>2. Laptops<br>3. PST Materials        | Pythagorean<br>Theorem,<br>Distance Formula | Completed PST materials                     |