**Instructional Focus Areas**

**High School**

| **Algebra I** | **Geometry** | **Algebra II** |
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| Relationships between quantities and reasoning with equations. | Congruence, proof and construction. | Polynomial, rational, and radical relationships. |
| Linear and exponential relationships. | Similarity, proof and trigonometry. | Trigonometric functions. |
| Descriptive Statistics | Extending to three dimensions. | Modeling with functions. |
| Expressions and equations. | Connecting algebra and geometry through coordinates. | Inferences and conclusions from data. |
| Quadratic functions and modeling. | Circles with and without coordinates. |  |
|  | Application of probability. |  |

**Instructional Focus and Course Clusters**

**Worksheet**

| There are *five* instructional focus areas for **Algebra I.** | **Course Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now? (Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| --- | --- | --- |
| Relationships between quantities and reasoning with equations. | * Reason quantitatively and use units to solve problems. * Interpret the structure of expressions. * Create equations and inequalities that describe numbers and relationships. * Understand solving equations as a process of reasoning and explain the reasoning. * Solve equations and inequalities in one variable. |  |
| Linear and exponential relationships. | * Extend the properties of exponents to rational exponents. * Solve systems of equations. * Represent and solve equations and inequalities graphically. * Understand the concept of a function and use function notation. * Interpret functions that arise in applications in terms of context. * Analyze functions using different representations. * Build a function that models a relationship between two quantities. * Build new functions from existing functions. * Construct and compare linear quadratic and exponential models to solve problems. * Interpret expressions for functions in terms of the situation model |  |
| Descriptive Statistics | * Summarize, represent, and interpret data on a single count or measurement variable. * Summarize, represent, and interpret data on two categorical and quantitative variables. * Interpret linear models. |  |
| Expressions and equations. | * Interpret structure of expressions. * Write expressions in equivalent forms to solve problems. * Perform arithmetic operations on polynomials. * Create equations that describe numbers or relationships. * Solve equations and inequalities in one variable. * Solve systems of equations. |  |
| Quadratic functions and modeling. | * Use properties of rational and irrational numbers. * Interpret functions that arise in applications in terms of a context. * Analyze functions using different representations. * Build a function that models a relationship between two quantities. * Build new functions from existing functions. * Construct and compare linear, quadratic and exponential models and solve problems. |  |

**Instructional Focus and Course Clusters**

**Worksheet**

| There are *six* instructional focus areas for **Geometry.** | **Course Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now? (Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| --- | --- | --- |
| Congruence, proof and construction. | * Experiment with transformation in the plane. * Understand congruence in terms of rigid motions. * Prove geometric theorems. * Make geometric constructions. |  |
| Similarity, proof and trigonometry. | * Understand similarity in terms of similarity transformations. * Prove theorems involving similarity. * Define trigonometric ratios and solve problems involving right triangles. * Apply geometric concepts in modeling situations. * Apply trigonometry to general triangles. |  |
| Extending to three dimensions. | * Explain volume formulas and use them to solve problems. * Visualize the relation between two-dimensional and three dimensional objects. * Apply geometric concepts in modeling situations. |  |
| Connecting algebra and geometry through coordinates. | * Use coordinates to prove simple geometric theorems algebraically. * Translate between the geometric description and the equation for a conic section. |  |
| Circles with and without coordinates. | * Understand and apply theorems about circles. * Find arc lengths and areas of sectors of circles. * Translate between the geometric description and the equations for a conic section. * Use coordinates to prove simple theorem algebraically. * Apply geometric concepts in modeling situations. |  |
| Application of probability. | * Understand independence conditional probability and use them to interpret data. * Use the rules of probability to compute probabilities of compound events in a uniform probability model. * Use probability to evaluate outcomes of decisions. |  |

**Instructional Focus and Course Clusters**

**Worksheet**

| There are *four* instructional focus areas for **Algebra II.** | **Course Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now? (Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| --- | --- | --- |
| Polynomial, rational, and radical relationships. | * Perform arithmetic operations with complex numbers. * Use complex numbers in polynomial identities and equations. * Interpret the structure of expressions. * Write expressions in equivalent forms to solve problems. * Perform arithmetic operation on polynomials. * Understand solving equations as a process of reasoning and explain the reasoning. * Use polynomial identities to solve problems. * Rewrite rational expressions. * Represent and solve equations and inequalities graphically. * Analyze functions using different representations. |  |
| Trigonometric functions. | * Extend the domain of trigonometric functions using the unit circle. * Model periodic phenomena with trigonometric functions. * Prove and apply trigonometric identities. |  |
| Modeling with functions. | * Create equations and inequalities that describe numbers or relationships. * Interpret functions that arise in applications in terms of context. * Analyze functions using different representations. * Build a function that models a relationship between two quantities. * Build new functions from existing functions. * Construct and compare linear, quadratic and exponential models and solve problems. |  |
| Inferences and conclusions from data. | * Summarize, represent, and interpret data on single count or measurement variables. * Understand and evaluate random processes underlying statistical experiments. * Make inferences and justify conclusions from sample surveys, experiments and observational studies. * Use probability to evaluate outcomes of decisions. |  |