

Planned Course: Algebra II		Course Number: M305	Department: Mathematics
Unit: Special Products & Factoring		Grade Level: 8-12	
Estimated Time: 18 days		Level/Track:	Date Approved: 7/15/08
PA Academic Standards	Core Concepts (in question format) <ul style="list-style-type: none"> Skills/Knowledge 	Activities/Strategies/Study Skills (identify some activities as remedial or enrichment activities)	Assessments (include types and topics)

ASSESSMENT ANCHOR			
<p>M11.D.2.2 Simplify expressions involving polynomials.</p> <p>M11.D.2.2.1 Add, subtract and/or multiply polynomial expressions (express answers in simplest form – nothing larger than a binomial multiplied by a trinomial).</p> <p>M11.D.2.2.2 Factor algebraic expressions, including difference of squares and trinomials (trinomials limited to the form ax^2+bx+c where a is not equal to 0).</p>	<p>▶ What is a polynomial?</p> <ul style="list-style-type: none"> Students will be able to identify polynomials by degree and number of terms. <p>▶ How can polynomials be combined?</p> <ul style="list-style-type: none"> Students will be able to add, subtract, multiply, and divide polynomials. Students will be able to identify special patterns of polynomial factors and use pattern to predict the product of such patterns. 	<ol style="list-style-type: none"> Students will classify polynomials based on degree and number of terms using appropriate vocabulary. Students will add and subtract polynomials by collecting like terms in both horizontal and vertical formats. Students will multiply polynomials using the FOIL and distributive methods. Students will divide polynomials using the long division method. Students will square binomials. 	<ul style="list-style-type: none"> Graded Homework Classroom Observation Online Quiz/Test In Class Quiz/Test Participation Graded Class work Projects

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<p>M11.D.2.2.2 Factor algebraic expressions, including difference of squares and trinomials (trinomials limited to the form ax^2+bx+c where a is not equal to 0).</p>		<p>6. Students will multiply conjugate binomials</p> <p>7. Students will square a binomial using a special pattern.</p>	
<p>M11.D.2.2.2 Factor algebraic expressions, including difference of squares and trinomials (trinomials limited to the form ax^2+bx+c where a is not equal to 0).</p>	<ul style="list-style-type: none"> • Students identify polynomials by type. • Students will be able to factor polynomials by type. 	<ol style="list-style-type: none"> 1. Students will review Algebra 1 factoring techniques. (GCF, Difference of 2 squares, Perfect squares, trinomial, basic trinomial) 2. Students will factor trinomials where $a > 1$. 3. Students will factor sum of 2 cubes. 4. Students will factor difference of 2 cubes. 5. Students will factor polynomials by grouping. 	<ul style="list-style-type: none"> • Graded Homework • Classroom Observation • Online Quiz/Test • In Class Quiz/Test • Participation • Graded Class work • Projects
<p>M11.D.2.1 Write, solve and/or graph linear equations and inequalities using various methods.</p>			

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<p>M11.D.2.1.5 Solve quadratic equations using factoring (integers only – not including completing the square or the Quadratic Formula).</p>	<ul style="list-style-type: none"> • Students will be able to solve equations of higher degree by factoring. 	<ol style="list-style-type: none"> 6. Students will demonstrate examples on chalkboard and/or cooperative learning. 7. Worksheets 8. Verification of answers by calculator. 	<ul style="list-style-type: none"> • Graded Homework • Classroom Observation • Online Quiz/Test • In Class Quiz/Test • Participation • Graded Class work • Projects
<p>M11.D.2.2 Simplify expressions involving polynomials.</p>	<ul style="list-style-type: none"> • Students will be able to divide polynomials. 	<ol style="list-style-type: none"> 1. Students will use long division to divide polynomials and write remainder as a ratio of two expressions. 	
<p>M11.D.2.2.1 Add, subtract and/or multiply polynomial expressions (express answers in simplest form – nothing larger than a binomial multiplied by a trinomial).</p>			

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<p>M11.D.4 Describe or use models to represent quantitative relationships.</p> <p>M11.D.4.1.1 Match the graph of a given function to its table or equation.</p>	<p>▶ What is the difference between a relation and a function?</p> <ul style="list-style-type: none"> • Students will be able to identify a function from a list of ordered pairs. • Students will be able to identify a function from a list of graphs. • Students will be able to properly use the symbols for functions. 	<ol style="list-style-type: none"> 1. Students will memorize the definition of a function. 2. Students will use the vertical line test to determine whether a graph is a function or just a relation. 	<ul style="list-style-type: none"> • Graded Homework • Classroom Observation • Online Quiz/Test • In Class Quiz/Test • Participation • Graded Class work • Projects 		
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<p>M11.D.4 Describe or use models to represent quantitative relationships.</p> <p>M11.D.4.1.1 Match the graph of a given function to its table or equation.</p>	<p>▶ Functions / Relations</p> <ul style="list-style-type: none"> Students will be able to add, subtract, multiply, and divide functions. Students will be able to evaluate a function for any given $f(x)$. Students will be able to perform function composition in the form of $f(g(x))$ and $g(f(x))$. Students will be able to determine the inverse of a function $(f^{-1}(x))$ 	<ol style="list-style-type: none"> Students will combine like terms in adding and subtracting functions. Students will substitute values for x and evaluate functions. Students will place a given function within another function to create a composition of functions. Students will exchange independent and dependent variables to determine inverse functions. Students will verify inverse functions with graphing calculators. 	<ul style="list-style-type: none"> Graded Homework Classroom Observation Online Quiz/Test In Class Quiz/Test Participation Graded Class work Projects
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