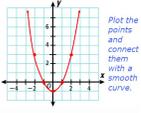
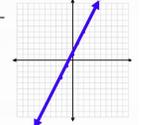




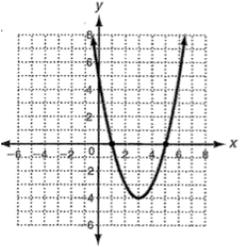
Mattawan Consolidated Schools

Algebra 1 Essential Standards Chart

Standard Description	Common Core Standard	Example of Rigor	Prerequisite Skills	Common Assessment	When Taught?	Extension Standards
What is the essential standard to be learned? Describe in student friendly vocabulary.	Essential Standards	What does proficient look like? Provide an example and/or description.	What prior knowledge, skills, and/or vocabulary is/are needed for a student to master this standard?	What assessments will be used to measure student mastery?	When will this standard be taught?	What will we do when students have learned the essential standard(s)?
Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	A.REI.3	Solve for x: $2(x-5) = 5x + 23$ $2x - 10 = 5x + 23$ $2x - 2x - 10 = 5x - 2x + 23$ $-10 = 3x + 23$ $-10 - 23 = 3x + 23 - 23$ $-33 = 3x$ $\frac{-33}{3} = \frac{3x}{3}$ $-11 = x$ Solve for x: $6y - 5 - 2y < 11$ $4y - 5 < 11$ $\quad + 5 \quad + 5$ $\frac{4y}{4} < \frac{16}{4}$ $\frac{4y}{4} < \frac{16}{4}$ $y < 4$ 	Order of operations and how to use inverse operations to solve for a variable	Quiz and Test	Unit 1/2	

<p>Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).</p>	<p>A.REI.10</p>	<p>Create a table for each quadratic function, and use it to make a graph. A. $y = x^2 - 1$</p> <table border="1" data-bbox="646 154 751 240"> <thead> <tr> <th>x</th> <th>$x^2 - 1$</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>-2</td> <td>$(-2)^2 - 1$</td> <td>3</td> </tr> <tr> <td>-1</td> <td>$(-1)^2 - 1$</td> <td>0</td> </tr> <tr> <td>0</td> <td>$(0)^2 - 1$</td> <td>-1</td> </tr> <tr> <td>1</td> <td>$(1)^2 - 1$</td> <td>0</td> </tr> <tr> <td>2</td> <td>$(2)^2 - 1$</td> <td>3</td> </tr> </tbody> </table>  <table border="1" data-bbox="646 256 751 373"> <thead> <tr> <th>x</th> <th>$y = 2x + 1$</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>-2</td> <td>$y = 2(-2) + 1$</td> <td>-3</td> </tr> <tr> <td>-1</td> <td>$y = 2(-1) + 1$</td> <td>-1</td> </tr> <tr> <td>0</td> <td>$y = 2(0) + 1$</td> <td>1</td> </tr> <tr> <td>1</td> <td>$y = 2(1) + 1$</td> <td>3</td> </tr> <tr> <td>2</td> <td>$y = 2(2) + 1$</td> <td>5</td> </tr> </tbody> </table> 	x	$x^2 - 1$	y	-2	$(-2)^2 - 1$	3	-1	$(-1)^2 - 1$	0	0	$(0)^2 - 1$	-1	1	$(1)^2 - 1$	0	2	$(2)^2 - 1$	3	x	$y = 2x + 1$	y	-2	$y = 2(-2) + 1$	-3	-1	$y = 2(-1) + 1$	-1	0	$y = 2(0) + 1$	1	1	$y = 2(1) + 1$	3	2	$y = 2(2) + 1$	5	<p>Order of operations, substituting a number for a variable and how to plot points</p>	<p>Quiz and Test</p>	<p>Unit 3, 4, 5, 8, 10</p>	
x	$x^2 - 1$	y																																								
-2	$(-2)^2 - 1$	3																																								
-1	$(-1)^2 - 1$	0																																								
0	$(0)^2 - 1$	-1																																								
1	$(1)^2 - 1$	0																																								
2	$(2)^2 - 1$	3																																								
x	$y = 2x + 1$	y																																								
-2	$y = 2(-2) + 1$	-3																																								
-1	$y = 2(-1) + 1$	-1																																								
0	$y = 2(0) + 1$	1																																								
1	$y = 2(1) + 1$	3																																								
2	$y = 2(2) + 1$	5																																								
<p>Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.</p>	<p>S.ID.7</p>	<p>If a student has \$100 in their bank account and spends \$10 per week write a linear model to represent this situation. What is the y-intercept and what does it represent?</p> <p>What is the slope and what does it represent?</p>	<p>Understand slope and y-intercept.</p>	<p>Quiz and Test</p>	<p>Unit 4, 5</p>																																					
<p>Solve systems of linear equations exactly and approximately, focusing on pairs of linear equations in two variables.</p>	<p>A.REI.6</p>	<p>Solve using graphing, substitution, and elimination methods.</p>	<p>Substitution, graphing, and the ability to solve an equation</p>	<p>Quiz and Test</p>	<p>Unit 5</p>																																					

		$\begin{array}{r} y = x + 1 \\ + y = -x \\ \hline 2y = 1 \\ y = \frac{1}{2} \\ \downarrow \\ y = -x \\ \frac{1}{2} = -x \\ -\frac{1}{2} = x \end{array}$ <p>Eliminate X</p> <p>Substitute</p> <p>Solution $(-\frac{1}{2}, \frac{1}{2})$</p>				
Perform arithmetic operations on polynomials.	APR.A	<p>Add:</p> $\begin{array}{r} 3x^2 + 5x - 3 \\ + x^2 - 5x + 1 \\ \hline 4x^2 + 0x - 2 = 4x^2 - 2 \end{array}$ <p>Subtract:</p> <p><i>Subtracting Polynomials</i></p> $\textcircled{a} (-6x^3 + 5x^2 - 3) - (2x^3 - 4x^2 - 3x + 1)$ $\begin{array}{r} -6x^3 + 5x^2 + 0x - 3 \\ + -2x^3 + 4x^2 + 3x - 1 \\ \hline -8x^3 + 9x^2 + 3x - 4 \end{array}$ <p>Multiply:</p> <p><i>Multiply Polynomials</i></p> $(x + 2)(x^2 + 3x + 4)$ $\begin{array}{r} x^3 + 3x^2 + 4x + 2x^2 + 6x + 8 \\ \hline x^3 + 5x^2 + 10x + 8 \end{array}$	Exponent Rules, Add/Subtract/ Multiply monomials	Quiz and Test	Unit 6, 7, 9	
Factor a quadratic expression to reveal the zeros of the function it defines.	A.SSE.3a	$\begin{array}{c} x^2 + 2x - 3 = 0 \\ (x - 1)(x + 3) = 0 \\ \swarrow \quad \searrow \\ x - 1 = 0 \quad x + 3 = 0 \\ x = 1 \quad x = -3 \end{array}$	GCF, Factoring	Quiz and Test	Unit 7, 9	

<p>For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.</p>	<p>F.IF.4</p>	 <p>a. Determine the vertex (3, -4)</p> <p>b. Determine the axis of symmetry $X = 3$</p> <p>c. Determine the zeros 1 and 5</p> <p>d. Determine the max/min value Minimum of -4</p> <p>e. Determine the range $Y \geq -4$</p> <p>f. In the equation, would the “a” value be positive or negative? “A” is positive because the graph opens up.</p>		<p>Quiz and Test</p>	<p>Unit 4, 5, 8, 10</p>	
<p>Solve quadratic equations in 1 variable. (e.g., for</p>	<p>REI.B.4</p>	<p>Solve using square roots:</p>	<p>Order of operations and how to use inverse operations to</p>	<p>Quiz and Test</p>	<p>Unit 9</p>	

$x^2 = 49$), taking square roots, the quadratic formula and factoring, as appropriate to the initial form of the equation.

$$3x^2 + 7 = 55$$

$$3x^2 + 7 - 7 = 55 - 7$$

$$3x^2 = 48$$

$$\frac{3x^2}{3} = \frac{48}{3} \quad \text{Divide both sides by 3 to isolate the squared term}$$

$$x^2 = 16$$

$$\sqrt{x^2} = \pm\sqrt{16}$$

$$x = \pm 4$$

$$x = 4 \quad \text{or} \quad x = -4$$

Solve by factoring:

$$x^2 + 2x - 3 = 0$$

$$(x - 1)(x + 3) = 0$$

$$x - 1 = 0 \quad x + 3 = 0$$

$$x = 1 \quad x = -3$$

Solve by quadratic formula:

#1 Solve using the quadratic formula.

$$3x^2 - 7x + 2 = 0$$

$$a = 3, b = -7, c = 2$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-(-7) \pm \sqrt{(-7)^2 - 4(3)(2)}}{2(3)}$$

$$x = \frac{7 \pm \sqrt{49 - 24}}{6}$$

$$x = \frac{7 \pm \sqrt{25}}{6}$$

$$x = \frac{7 \pm 5}{6}$$

$$x = \frac{12}{6} \quad x = \frac{2}{6}$$

$$x = 2, \frac{1}{3}$$

solve for a variable
Factoring, finding a GCF