

Thomas Edison EnergySmart Charter School 2015-16
Curriculum for 6th Grade Math
Ms. Wood

Big Idea: Number system						
Content: Mathematics		Course: Grade 6			Unit: 2	
Essential questions	Content	Skills	Key terms	Assessment	CCSS	Text
How does estimation make computation more accurate? What are some situations in everyday life where we use estimation? How do we perform operations on decimal numbers? When do we use exponents? How do we represent numbers using scientific notation?	Adding decimal numbers Subtracting decimal numbers Multiplying decimal numbers Dividing decimal numbers Writing in exponential form Using the scientific notation	Add/Subtract decimal numbers Multiply/Divide decimal numbers Write numbers in exponential form Represent numbers in scientific notation	Decimal numbers Whole numbers Sum Difference Product Quotient Exponents	Teacher created assessments Teacher Observations Rubrics Benchmarks Projects Progress check 1 Progress check 2 Homework Classroom observations (whole group) Individual observations	6.NS.2 6.NS.3 6.NS.4 6.NS.5 6.NS.6 6.NS.8 6.EE.1	Everyday Math
Big Idea: Fractions						
Content: Mathematics		Course: Grade 6 math			Unit: 4 and 6	
Essential questions	Content	Skill	Terms	Assessment	CCSS	Text
How do we	Multiplication/Division of	Multiplying	Fractions	Teacher created	6.NS.1	Everyday

<p>multiply/divide fractions and mixed numbers?</p> <p>How can we solve real life problems involving fractions and mixed numbers?</p> <p>What are rational numbers?</p> <p>How do we add and subtract rational numbers using the number line?</p> <p>What is absolute value?</p> <p>How do we multiply and divide rational numbers?</p> <p>How do we compare positive and negative numbers?</p> <p>How do we find absolute values?</p> <p>How can we use positive and negative numbers in real life situations?</p>	<p>fractions and mixed numbers</p> <p>Identify rational and irrational numbers</p> <p>Represent rational numbers on the number line</p> <p>Adding and subtracting rational numbers using the number line</p> <p>Developing strategies to add and subtract rational numbers</p> <p>Understanding the meaning of absolute value and apply in real life situations</p> <p>Multiplying and dividing rational numbers</p> <p>Finding the absolute values</p> <p>Comparing positive and negative numbers?</p>	<p>fractions and mixed numbers</p> <p>Dividing fractions and mixed numbers</p> <p>Convert a rational number to a decimal</p> <p>Solve real-world and mathematical problems involving the four operations with rational numbers</p> <p>Classify the given numbers as rational or irrational</p> <p>Compare positive and negative numbers</p> <p>Find absolute numbers</p>	<p>Mixed numbers</p> <p>Multiplication</p> <p>Division</p> <p>Reciprocal</p> <p>Rational numbers</p> <p>Irrational numbers</p> <p>Positive numbers</p> <p>Negative numbers</p> <p>Number line</p> <p>Absolute value</p> <p>Additive inverse</p> <p>Multiplicative inverse</p> <p>Square root</p> <p>Estimate</p>	<p>assessments</p> <p>Teacher Observations</p> <p>Rubrics</p> <p>Benchmarks</p> <p>Projects</p> <p>Progress check 1</p> <p>Progress check 2</p> <p>Homework</p> <p>Classroom observations (whole group)</p> <p>Individual observations</p>	<p>6.NS.4</p> <p>6.NS.7</p>	<p>Math</p>
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Big Idea: Ratios and proportions						
Content: Mathematics		Course: Grade 6			Unit: 8	
Essential questions	Content	Skill	Key terms	Assessment	CCSS	Text
How do we express ratios?	Writing ratios	Writing ratios	Ratios	Teacher created assessments	6.RP.1	Everyday Math
How do we find unit rate?	Setting up proportions Finding the unit rate	Setting up the proportions	Proportions	Teacher Observations	6.RP.2 6.RP.3.a 6.RP.3.b 6.RP.3.c 6.RP.3.d	
How we determine the best buy using the unit rate?	Determining the best buy	Determine the best buy	Unit rate	Rubrics		
How do we solve real life problems using ratios and proportions?	Finding unit rates and ratios measured in like or different units	Find the unit rate (constant of proportionality) with measurements given in the same and different units.	Best buy	Benchmarks		
How do we find the unit rate associated with ratios of fractions?	Setting up proportional relationships between quantities		Proportion	Projects		
How do we find the best buy in real life situation from the given choices?	Relating percents with proportions	Relate percents with proportions	constant of proportionality	Progress check 1 Progress check 2		
How do we find the scale factor in terms of percents, decimals and fractions?	Finding the constant of proportionality (unit rate)	Write an equation using the unit rate	percent	Homework		
How do we determine whether two quantities	Finding the missing side in a set of similar shapes using ratios			Classroom observations (whole group)		
	Applying the concept of similar shapes to solve real life problems			Individual observations		

<p>are proportional?</p> <p>How do we use proportions to solve multistep ratio and percent problems like calculating taxes, discounts, percent decrease/increase and percent error?</p> <p>What is scale factor?</p> <p>How do we use scale factor to find the missing side in a set of similar shapes?</p>						
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Big Idea: Expressions and equations

Content: Mathematics	Course : Grade 6	Unit: 3 and 9
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Essential questions	Content	Skill	Key terms	Assessment	CCSS	Text
<p>How do we write and evaluate numerical expressions involving variables?</p> <p>How do we read/write and evaluate expressions that record operations with numbers and variables?</p> <p>How do we apply properties of operations to make equivalent</p>	<p>Differentiating between expressions and equations</p> <p>Writing algebraic statements using variables for the unknown quantity</p> <p>Solving an equation for the variable on one side</p> <p>Evaluating an expression</p> <p>Solving an equation with variable on both sides</p>	<p>Write an expression for the set of operations involving numbers and variables</p> <p>Evaluate expressions</p> <p>Identify equivalent expressions</p> <p>Solve an equation</p>	<p>Expressions</p> <p>Equations</p> <p>Variable</p> <p>Linear equations</p> <p>Slope</p> <p>y-intercept</p> <p>discount</p> <p>tax</p>	<p>Teacher created assessments</p> <p>Teacher Observations</p> <p>Rubrics</p> <p>Benchmarks</p> <p>Projects</p> <p>Progress check 1</p> <p>Progress check 2</p>	<p>6.EE.1</p> <p>6.EE.2</p> <p>6.EE.3</p> <p>6.EE.4</p> <p>6.EE.5</p> <p>6.EE.6</p> <p>6.EE.7</p> <p>6.EE.8</p> <p>6.EE.9</p>	<p>Everyday Math</p>

<p>expressions?</p> <p>How do we identify when two expressions are the same?</p> <p>What do we mean by solving an equation?</p> <p>How do we write expressions to solve real life problems?</p> <p>How do we write an inequality for a real life situation?</p> <p>How do write equations and inequalities using variables to represent quantities in real world or mathematical situations?</p> <p>How do apply properties of exponents?</p> <p>How do we solve equations with one variable?</p>	<p>Write an inequality for the given situation using variable for the unknown</p> <p>Solving an inequality and graph</p> <p>Checking if a given value satisfies the inequality</p>	<p>Solve real life word problems using variable for the unknown</p> <p>Write an inequality for a constraint</p> <p>Graph an inequality</p>	<p>percents</p> <p>decimals</p> <p>fractions</p> <p>solve</p> <p>evaluate</p> <p>graph</p> <p>inequalities</p> <p>greater than</p> <p>greater than or equal to</p> <p>less than</p> <p>less than or equal to</p> <p>exponents</p> <p>base</p> <p>power</p> <p>scientific notation</p>	<p>Homework</p> <p>Classroom observations (whole group)</p> <p>Individual observations</p>		
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Big Idea: Statistics and probability						
Content: Mathematics		Course: Grade 6			Unit: 1 and 7	
Essential questions	Content	Skill	Key terms	Assessment	CCSS	Text
What is a statistical question?	Recognizing a statistical question	Determine if a question is statistical	Statistical question	Teacher created assessments	6.SP.1 6.SP.2 6.SP.3	Everyday Math
How can we represent data by using different types of graphs like histogram, bar graph, circle graph, etc?	Representing data using different types of graphs so that it is easy to analyze	Represent data using different types of graphs	Data Data set	Teacher Observations Rubrics	6.SP.4 6.SP.5	
How do we find the measures of center for a data set?	Finding the measure of center and spread	Find the measure of center and spread	Measure of center Measure of spread	Benchmarks Projects		
How do we find the measure of spread for the data set?	Drawing a line plot Drawing a box plot	Draw a line plot	Mean	Progress check 1		
How do we draw a line plot?	Drawing the scatter plot graph using bivariate data	Draw a box plot	Median	Progress check 2		
How do we draw a box plot?	Interpreting the scatter plot graph	Draw the scatter plot graphs using bivariate data	Mode	Homework 7.SP.1 Classroom observations (whole group)		
	Understanding the trend of the scatter plot graph	Interpret the scatter plot graphs	Range Histogram	Individual		

How do we draw scatter plots for bivariate data?	Drawing the best fitting line in the scatter plot graph	Understand the scatter plot graphs	Line plot	observations		
How do we interpret scatter plots?	Using an equation to find the unknown value in linear graphs	Draw the best fitting line in a scatter plot graph and understand the trend	Box plot			
How do we draw the best fit line?	Constructing two-way tables	Construct two-way tables	Bar graph			
How do we use an equation to find the unknown value in a linear models?	Interpreting two-way tables	Interpret two-way tables	Bivariate data			
How do we construct two-way tables?			Scatter plots			
How do we interpret two-way tables?			Best fit line			
How do we draw scatter plots for bivariate data?			Linear relationship			
How do we interpret scatter plots?			Slope			
How do we draw the best fit line?			Y-intercept			
			Two-way tables			
			Frequency			
Big Idea: Geometry						
Content: Mathematics		Course: Grade 6			Unit: 5 and 10	
Essential questions	Content	Skill	Key terms	Assessment	CCSS	Text
	Applying the concepts of	Apply the	Scale factor	Teacher created	6.G.1	Everyday

<p>How to we construct triangles with given measures?</p> <p>What two-dimensional figures will result from slicing three-dimensional figures in a given way?</p> <p>How are the radius, circumference and the area of the circle related? How can we find one given the other measure?</p> <p>How do we use complementary and supplementary facts to find the missing angles by writing an equation?</p> <p>How do we find volume and surface area of three-dimensional figures composed of triangles, quadrilaterals, polygons, cubes and right prisms?</p> <p>How do we rotate, reflect and translate a</p>	<p>geometry and use the supplementary and complementary angles to find the missing side and/angle in a given shape</p> <p>Constructing equations using the rules of supplementary and complementary angles and find the unknown angle</p> <p>Finding the surface area and volume of three dimensional shapes</p> <p>Drawing the nets of solid shapes</p> <p>Using the nets to find the surface area of solid shapes</p>	<p>concepts of geometry to find the missing side of a polygon</p> <p>Apply the concepts of geometry to find the missing angle in a polygon</p> <p>Find the surface area of a solid shape by drawing the net</p> <p>Find the volume of a solid shape</p> <p>Apply the concept of volume and surface to solve real life word problems</p> <p>Draw a polygon the coordinate grid</p> <p>Find the length of a side of a polygon on the coordinate grid</p>	<p>Angle</p> <p>Side length</p> <p>Supplemenra ry</p> <p>Complementa ry</p> <p>Triangle</p> <p>Quadrilaterals</p> <p>Polygon</p> <p>Surface area</p> <p>Volume</p> <p>Circumferenc e</p> <p>Radius</p> <p>Diameter</p> <p>Area</p> <p>Nets</p>	<p>assessments</p> <p>Teacher Observations</p> <p>Rubrics</p> <p>Benchmarks</p> <p>Projects</p> <p>Progress check 1</p> <p>Progress check 2</p> <p>Homework</p> <p>Classroom observations (whole group)</p> <p>Individual observations</p>	<p>6.G.2</p> <p>6.G.3</p> <p>6.G.4</p>	<p>Math</p>
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two dimensional shape
around the coordinate
grid?

How do we find all the
angles when a set of
parallel lines is cut by a
transversal?

How do we find the
length of a side of a
polygon on the
coordinate grid?

How do we find the
distance between any
two points on a
coordinate grid?