Syllabus for 8th Grade Pre-Algebra 2015-2016

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Please leave a message at the office and I will return phone calls at the end of the day.

Welcome to the 2015 – 2016 school year! My name is Jennifer Warren and I am really looking forward to this year. In this class you will have the opportunity to enhance your problem solving skills, expand your mathematical knowledge, and apply each standard to the next to build a successful Math 8 year. I believe you are all scholars, who learn in different ways, so never settle for giving less than your best. Remember, always ask questions when you do not understand!

Course Objectives:

- Students will gain proficiency in computation with rational numbers and use proportions to solve a variety of problems.
- Students will learn new concepts including solving two-step equations and inequalities, graphing linear equations, visualizing three-dimensional shapes represented in two-dimensional drawings, applying transformations to geometric shapes in the coordinate plane and using matrices to organize and interpret data.
- Students will also verify and apply the Pythagorean Theorem and represent relations and functions using tables, graphs, and rules.

Textbook: Glencoe McGraw-Hill Math Connects Course 3
We will also develop your course content through the use of your interactive notebook. It is very important to keep this notebook/binder very organized and up to date. The notebook's organization and completion will be part of the grade for this course.

What's Expected of You:

- Complete assigned work on time
- Be respectful to your teacher and classmates
- Come to class prepared with the proper supplies
- If confusion sets in, be sure to ask plenty of questions

How to calculate your "A" average:
Tests - 30%
Class Work / Lab - 30%
Quizzes - 30%
Homework - 10%

Southampton County Grading Scale:
A 93 – 100%
B 85 – 92%
C 77 – 84%
D 70 – 76%
F 0 – 69%

Class Rules:

- The student will conduct himself/ herself in a respectful manner by showing kindness, being recognized before speaking, and keeping his/her work area and materials neat and clean.
- The student must be seated and ready to work at the beginning of class. **Note: The policy at SMS states that, if you are not seated when the period begins, it is mandatory that we mark you as tardy. Three tardies equal one absence.**
- In order to be dismissed from class, homework must be written down.
- **All assignments are due on time**. When turning in assignments, please remember the following:
    1. All assignments should be written in your interactive notebook unless told otherwise
    2. Please write in pencil only
    3. Use the school-wide heading in the upper right hand corner of any loose-leaf paper that you turn in:
        Name:
        Course:
        Date:
- **Homework** will be assigned daily Monday - Thursday (not always written homework), quizzes will be given weekly, and tests will be given at the end of each SOL covered (about every week and a half to two weeks).
- Cell phones, chewing gum, eating, and drinking in class are *not* permissible.
- Cheating will result in no credit. Contributing to cheating will also result in no credit. Cheating is defined as giving or receiving any help on any assignment unless assistance is specifically allowed.

Attendance and Make-Up Work Policy:

- If absent, it is your responsibility to collect your missed work and return the completed assignment within five days. Please understand that many of the topics that we cover build upon one another and since we are on a block schedule missing one school day is like missing two days worth of work. As a result, it is imperative that if you do miss a day you should try to make up the assignments as quickly as possible so that you do not fall behind. You are also responsible for turning in any assignments that we graded while you were out.

Consequences:

- First offense: a verbal warning
- Second offense: a note home or in extreme cases a phone call home
- Third offense: a written referral
    - Please keep in mind that I cannot broaden your mind if you are sitting in the office. However, I cannot allow you to disrupt your classmates' opportunities to broaden their minds either.
- Keep in mind there are some offenses that warrant an immediate referral.

The Supply list (AKA – Everything You Need to Be a Successful Student)

- 1 ½" binder
- One pack of five divider tabs
- One pack of page protectors
- One pack of loose leaf paper
- Pencils, highlighters, glue sticks, scissors
- TI30Xa calculator (it is black and about $10 at Walmart – <u>do not get the blue scientific one</u>) ****This is a MUST that is required everyday of this course. These are also available at school for $10. Please let your teacher know asap in order to place the order.

- Glue Sticks, Scissors, Kleenex, and Hand Sanitizer

8th Grade Pre-Algebra General
Pacing Guide 2014-2015

1st Nine Weeks

Time	SOL with Essential Knowledge and Skill
Week 1 1 day	***Number and Number Sense***
1 day	Pretest
1 day	**8.1** **a)** ***simplify numerical expressions*** involving positive exponents, using rational numbers, order of operations, and properties of operations with The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Simplify numerical expressions containing: 1) exponents (where the base is a rational number and the exponent is a positive whole number decimals, integers and square roots of perfect squares; and 3) grouping symbols (no more than 2 embedded grouping symbols). Order of op properties of operations with real numbers should be used.
2 days	Cortez Math
Week 2 1 day	***Number and Number Sense*** **8.1** **a)** ***simplify numerical expressions*** involving positive exponents, using rational numbers, order of operations, and properties of operations with The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Simplify numerical expressions containing: 1) exponents (where the base is a rational number and the exponent is a positive whole number decimals, integers and square roots of perfect squares; and 3) grouping symbols (no more than 2 embedded grouping symbols). Order of op properties of operations with real numbers should be used.
2 days	**8.1** **b)** compare and order decimals, fractions, percents, and numbers written in ***scientific notation***. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Compare and order no more than five fractions, decimals, percents, and numbers written in scientific notation using positive and negative e Ordering may be in ascending or descending order.
2 days	Cortez Math

Week 3 3 days	***Number and Number Sense*** **8.2** The student will describe orally and in writing the ***relationships between the subsets of the real number system***. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Describe orally and in writing the relationships among the sets of natural or counting numbers, whole numbers, integers, rational numbers, numbers, and real numbers. • Illustrate the relationships among the subsets of the real number system by using graphic organizers such as Venn diagrams. Subsets includ numbers, irrational numbers, integers, whole numbers, and natural or counting numbers. • Identify the subsets of the real number system to which a given number belongs. • Determine whether a given number is a member of a particular subset of the real number system, and explain why. • Describe each subset of the set of real numbers and include examples and nonexamples. • Recognize that the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irration product of a nonzero rational number and an irrational number is irrational.†
2 days	Cortez Math
Week 4 1 day	***Number and Number Sense*** **8.2** The student will describe orally and in writing the ***relationships between the subsets of the real number system***. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Describe orally and in writing the relationships among the sets of natural or counting numbers, whole numbers, integers, rational numbers, numbers, and real numbers. • Illustrate the relationships among the subsets of the real number system by using graphic organizers such as Venn diagrams. Subsets includ numbers, irrational numbers, integers, whole numbers, and natural or counting numbers. • Identify the subsets of the real number system to which a given number belongs. • Determine whether a given number is a member of a particular subset of the real number system, and explain why. • Describe each subset of the set of real numbers and include examples and nonexamples. • Recognize that the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irration product of a nonzero rational number and an irrational number is irrational.†
2 days	Benchmark Review and Benchmark Test
2 days	Cortez Math
Week 5 2 days for both 8.4 and 8.5	***Computation and Estimation*** **8.4** The student will apply the order of operations to evaluate algebraic expressions for given replacement values of the variables. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Substitute numbers for variables in algebraic expressions and simplify the expressions by using the order of operations. Exponents are posit to whole numbers less than 4. Square roots are limited to perfect squares. • Apply the order of operations to evaluate formulas. Problems will be limited to positive exponents. Square roots may be included in the exp limited to perfect squares. **8.5** The student will **a)** determine whether a given number is a ***perfect square***; and **b)** find the ***two consecutive whole numbers between which a square root lies***. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Identify the perfect squares from 0 to 400. • Identify the two consecutive whole numbers between which the square root of a given whole number from 0 to 400 lies (e.g.,lies between 7 49 and 82 = 64). 57 • Define a perfect square. • Find the positive or positive and negative square roots of a given whole number from 0 to 400. (Use the symbol to ask for the positive root for the negative root.)−
1 day	**8.3** The student will **a)** solve practical problems involving ***rational numbers, percents, ratios, and proportions***;

	The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Write a proportion given the relationship of equality between two ratios. • Solve practical problems by using computation procedures for whole numbers, integers, fractions, percents, ratios, and proportions. Some p require the application of a formula. • Maintain a checkbook and check registry for five or fewer transactions.
2 days	
	Cortez Math
Week 6	***Computation and Estimation***
3 days	**8.3 The student will** **a)** solve practical problems involving ***rational numbers, percents, ratios, and proportions***; and The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Substitute values for variables in given formulas. For example, use the simple interest formula to determine the value of any missing variab specific information. *Iprt=* • Compute the simple interest and new balance earned in an investment or on a loan for a given number of years.
2 days	Cortez Math
Week 7	***Computation and Estimation***
3 days	**8.3 The student will** **b)** determine the percent increase or decrease for a given situation. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Compute the percent increase or decrease for a one-step equation found in a real life situation.
2 days	Cortez Math
Week 8	***Computation and Estimation***
1 day	**8.3 The student will** **b)** determine the percent increase or decrease for a given situation. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Compute the percent increase or decrease for a one-step equation found in a real life situation. ***Probability and Statistics***
2 days	**8.12** The student will determine the ***probability*** of independent and dependent events with and without replacement. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Determine the probability of no more than three independent events.
2 days	Cortez Math
Week 9	***Probability and Statistics***
1 day	**8.12** The student will determine the ***probability*** of independent and dependent events with and without replacement. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Determine the probability of no more than three independent events.
2 days	Review and 9 Weeks Benchmark Test
2 days	Cortez Math

2nd Nine Weeks

Time	SOL with Essential Knowledge and Skill
Week 10	***Probability and Statistics***
3 days	**8.12** The student will determine the ***probability*** of independent and dependent events with and without replacement. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Determine the probability of no more than three independent events.
2 days	Cortez Math
Week 11	***Probability and Statistics***
2 days	**8.12** The student will determine the ***probability*** of independent and dependent events with and without replacement. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Determine the probability of no more than three independent events.
1 day	**8.13** The student will **a)** make comparisons, predictions, and inferences, using information displayed in ***graphs***; The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Collect, organize, and interpret a data set of no more than 20 items using scatterplots. Predict from the trend an estimate of the line o drawing.
2 days	Cortez Math
Week 12	***Probability and Statistics***
3 days	**8.13** The student will **a)** make comparisons, predictions, and inferences, using information displayed in ***graphs***; The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Collect, organize, and interpret a data set of no more than 20 items using scatterplots. Predict from the trend an estimate of the line o drawing.
2 days	Cortez Math
Week 13	***Probability and Statistics***
2 days	**8.13** The student will **b)** construct and analyze ***scatterplots***. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Interpret a set of data points in a scatterplot as having a positive relationship, a negative relationship, or no relationship.
Week 13.5	***Patterns, Functions and Algebra***
3 days	**8.14** The student will make connections between any two representations ***(tables, graphs, words, and rules)*** of a given ***relationship***. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Graph in a coordinate plane ordered pairs that represent a relation. • Describe and represent relations and functions, using tables, graphs, words, and rules. Given one representation, students will be able relation in another form. • Relate and compare different representations for the same relation.
2 days	Cortez Math
Week 14	***Patterns, Functions and Algebra***
1 day	**8.14** The student will make connections between any two representations ***(tables, graphs, words, and rules)*** of a given ***relationship***.

	The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Graph in a coordinate plane ordered pairs that represent a relation. • Describe and represent relations and functions, using tables, graphs, words, and rules. Given one representation, students will be able relation in another form. • Relate and compare different representations for the same relation.
2days	**8.15** The student will **a)** solve multistep linear equations in one variable on one and two sides of the equation; The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Solve two- to four-step linear equations in one variable using concrete materials, pictorial representations, and paper and pencil illust performed. 2 identify ***properties of operations*** used to solve an equation. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Identify properties of operations used to solve an equation from among: - the commutative properties of addition and multiplication; - the associative properties of addition and multiplication; - the distributive property; - the identity properties of addition and multiplication; - the zero property of multiplication; - the additive inverse property; and - the multiplicative inverse property.
2 days	Cortez Math
Week 15	***Patterns, Functions and Algebra***
3days	**8.15** The student will **a)** solve multistep linear equations in one variable on one and two sides of the equation; The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Solve two- to four-step linear equations in one variable using concrete materials, pictorial representations, and paper and pencil illust performed. 2 identify ***properties of operations*** used to solve an equation. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Identify properties of operations used to solve an equation from among: - the commutative properties of addition and multiplication; - the associative properties of addition and multiplication; - the distributive property; - the identity properties of addition and multiplication; - the zero property of multiplication; - the additive inverse property; and - the multiplicative inverse property.
2 days	Cortez Math
Week 16	***Patterns, Functions and Algebra***
1 day	**8.15** The student will **a)** solve multistep linear equations in one variable on one and two sides of the equation; The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Solve two- to four-step linear equations in one variable using concrete materials, pictorial representations, and paper and pencil illust performed. 2 identify ***properties of operations*** used to solve an equation. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Identify properties of operations used to solve an equation from among: - the commutative properties of addition and multiplication; - the associative properties of addition and multiplication; - the distributive property; - the identity properties of addition and multiplication; - the zero property of multiplication; - the additive inverse property; and - the multiplicative inverse property.

2 days	**8.15** The student will **b)** solve ***two-step linear inequalities and graph the results*** on a number line; The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Solve two-step inequalities in one variable by showing the steps and using algebraic sentences. • Graph solutions to two-step linear inequalities on a number line.
2 days	**Cortez Math**
Week 17	***Patterns, Functions and Algebra***
1 day	**8.15** The student will **b)** solve ***two-step linear inequalities and graph the results*** on a number line; The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Solve two-step inequalities in one variable by showing the steps and using algebraic sentences. • Graph solutions to two-step linear inequalities on a number line.
2 days	**8.17** The student will identify the ***domain, range, independent variable or dependent variable*** in a given situation. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Apply the following algebraic terms appropriately: *domain, range, independent variable,* and *dependent variable.* • Identify examples of domain, range, independent variable, and dependent variable. • Determine the domain of a function. • Determine the range of a function. • Determine the independent variable of a relationship. • Determine the dependent variable of a relationship.
2 days	**Cortez Math**
Week 18	
2 days	Benchmark Review and Benchmark Test
2 days	Cortez Math

	# 3rd Nine Weeks
Time	**SOL with Essential Knowledge and Skill**
Week 18.5	***Measurement and Geometry***
1 day	8.6 The student will **a)** verify by measuring and describe the relationships among ***vertical angles, adjacent angles, supplementary angles, and complementary angles***; and **b)** ***measure angles*** of less than 360°. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Measure angles of less than 360° to the nearest degree, using appropriate tools. • Identify and describe the relationships between angles formed by two intersecting lines. • Identify and describe the relationship between pairs of angles that are vertical. • Identify and describe the relationship between pairs of angles that are supplementary. • Identify and describe the relationship between pairs of angles that are complementary. • Identify and describe the relationship between pairs of angles that are adjacent. • Use the relationships among supplementary, complementary, vertical, and adjacent angles to solve practical problems.†
2 days	Cortez Math
Week 19	***Measurement and Geometry***
c) days	8.6 The student will **a)** verify by measuring and describe the relationships among ***vertical angles, adjacent angles, supplementary angles, and complementary angles***; and **d)** ***measure angles*** of less than 360°. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

	• Measure angles of less than 360° to the nearest degree, using appropriate tools. • Identify and describe the relationships between angles formed by two intersecting lines. • Identify and describe the relationship between pairs of angles that are vertical. • Identify and describe the relationship between pairs of angles that are supplementary. • Identify and describe the relationship between pairs of angles that are complementary. • Identify and describe the relationship between pairs of angles that are adjacent. • Use the relationships among supplementary, complementary, vertical, and adjacent angles to solve practical problems.† Cortez Math
2 days	
Week 20 2 days	***Measurement and Geometry*** 8.6 The student will **a)** verify by measuring and describe the relationships among ***vertical angles, adjacent angles, supplementary angles, and complementary angles***; and **e)** ***measure angles*** of less than 360°. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Measure angles of less than 360° to the nearest degree, using appropriate tools. • Identify and describe the relationships between angles formed by two intersecting lines. • Identify and describe the relationship between pairs of angles that are vertical. • Identify and describe the relationship between pairs of angles that are supplementary. • Identify and describe the relationship between pairs of angles that are complementary. • Identify and describe the relationship between pairs of angles that are adjacent. • Use the relationships among supplementary, complementary, vertical, and adjacent angles to solve practical problems.†
1 day	**8.7** The student will a) investigate and solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids; and **The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to** • Distinguish between situations that are applications of surface area and those that are applications of volume. • Investigate and compute the volume of prisms, cylinders, cones, and pyramids, using concrete objects, nets, diagrams, and formulas. Cortez Math
2 days	
Week 21 2 days	***Measurement and Geometry*** **8.7** The student will a) investigate and solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids; and **The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to** • Distinguish between situations that are applications of surface area and those that are applications of volume. • Investigate and compute the surface area of a cone by calculating the sum of the areas of the side and the base, using concrete objects, nets, diagrams a • Investigate and compute the surface area of a right cylinder using concrete objects, nets, diagrams and formulas. • Investigate and compute the volume of prisms, cylinders, cones, and pyramids, using concrete objects, nets, diagrams, and formulas. Cortez Math
2 days	
Week 22 **f)** days	***Measurement and Geometry*** 8.7The student will a) investigate and solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids; and **The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to** • Distinguish between situations that are applications of surface area and those that are applications of volume. • Investigate and compute the surface area of a square or triangular pyramid by finding the sum of the areas of the triangular faces and the base using co diagrams and formulas. • Investigate and compute the surface area of a cone by calculating the sum of the areas of the side and the base, using concrete objects, nets, diagrams a • Investigate and compute the surface area of a right cylinder using concrete objects, nets, diagrams and formulas. • Investigate and compute the surface area of a rectangular prism using concrete objects, nets, diagrams and formulas. • Investigate and compute the volume of prisms, cylinders, cones, and pyramids, using concrete objects, nets, diagrams, and formulas.

2 days	• Solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids. Cortez Math
Week 23 2 days	***Measurement and Geometry*** 8.7The student will a) investigate and solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids; and **The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to** • Distinguish between situations that are applications of surface area and those that are applications of volume. • Investigate and compute the surface area of a square or triangular pyramid by finding the sum of the areas of the triangular faces and the base using co diagrams and formulas. • Investigate and compute the surface area of a cone by calculating the sum of the areas of the side and the base, using concrete objects, nets, diagrams a • Investigate and compute the surface area of a right cylinder using concrete objects, nets, diagrams and formulas. • Investigate and compute the surface area of a rectangular prism using concrete objects, nets, diagrams and formulas. • Investigate and compute the volume of prisms, cylinders, cones, and pyramids, using concrete objects, nets, diagrams, and formulas. • Solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids.
1 day	**8.7** The student will b) describe how changing one measured attribute of the figure affects the volume and surface area. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Compare and contrast the volume and surface area of a prism with a given set of attributes with the volume of a prism where one of the attributes has l factor of 2, 3, 5 or 10. • Describe the two-dimensional figures that result from slicing three-dimensional figures parallel to the base (e.g., as in plane sections of right rectangul rectangular pyramids).†
2 days	Cortez Math
Week 24 1 day	***Measurement and Geometry*** **8.7** The student will b) describe how changing one measured attribute of the figure affects the volume and surface area. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Compare and contrast the volume and surface area of a prism with a given set of attributes with the volume of a prism where one of the attributes has l factor of 2, 3, 5 or 10. • Describe the two-dimensional figures that result from slicing three-dimensional figures parallel to the base (e.g., as in plane sections of right rectangul rectangular pyramids).†
2 days	8.8 The student will a) apply transformations to plane figures; and b) identify applications of transformations. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Demonstrate the reflection of a polygon over the vertical or horizontal axis on a coordinate grid. • Demonstrate the translation of a polygon on a coordinate grid. • Identify practical applications of transformations including, but not limited to, tiling, fabric, and wallpaper designs, art and scale drawings. • Identify the type of transformation in a given example.
2 days	Cortez Math
Week 25 **g)** days	***Measurement and Geometry*** 8.8 The student will a) apply transformations to plane figures; and b) identify applications of transformations. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

	• Demonstrate the reflection of a polygon over the vertical or horizontal axis on a coordinate grid. • Demonstrate 90°, 180°, 270°, and 360°clockwise and counterclockwise rotations of a figure on a coordinate grid. The center of rotation will be limited • Demonstrate the translation of a polygon on a coordinate grid. • Demonstrate the dilation of a polygon from a fixed point on a coordinate grid. • Identify practical applications of transformations including, but not limited to, tiling, fabric, and wallpaper designs, art and scale drawings. • Identify the type of transformation in a given example.
2 days	Cortez Math
Week 26 1 day	***Measurement and Geometry*** **8.8** The student will a) apply transformations to plane figures; and b) identify applications of transformations. The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Demonstrate the reflection of a polygon over the vertical or horizontal axis on a coordinate grid. • Demonstrate 90°, 180°, 270°, and 360°clockwise and counterclockwise rotations of a figure on a coordinate grid. The center of rotation will be limited • Demonstrate the translation of a polygon on a coordinate grid. • Demonstrate the dilation of a polygon from a fixed point on a coordinate grid. • Identify practical applications of transformations including, but not limited to, tiling, fabric, and wallpaper designs, art and scale drawings. • Identify the type of transformation in a given example.
1 day	**8.9** The student will construct a three dimensional model, given the top or bottom, side, and front views. **The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to** • Construct three-dimensional models, given the top or bottom, side, and front views. • Identify three-dimensional models given a two-dimensional perspective.
1 day	**8.10 The student will** **a) verify the Pythagorean Theorem; and** **b) apply the Pythagorean Theorem.** The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Identify the parts of a right triangle (the hypotenuse and the legs). • Verify a triangle is a right triangle given the measures of its three sides. • Verify the Pythagorean Theorem, using diagrams, concrete materials, and measurement. • Find the measure of a side of a right triangle, given the measures of the other two sides. • Solve practical problems involving right triangles by using the Pythagorean Theorem.
2 days	Cortez Math
Week 27 1 day	***Measurement and Geometry*** **8.10 The student will** **a) verify the Pythagorean Theorem; and** **b) apply the Pythagorean Theorem.** The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Identify the parts of a right triangle (the hypotenuse and the legs). • Verify a triangle is a right triangle given the measures of its three sides. • Verify the Pythagorean Theorem, using diagrams, concrete materials, and measurement.

2 days 2 days	• Find the measure of a side of a right triangle, given the measures of the other two sides. • Solve practical problems involving right triangles by using the Pythagorean Theorem. Benchmark Review and Test Cortez Math

	4th Nine Weeks
Time	**SOL with Essential Knowledge and Skill**
Week 28 3 days	***Measurement and Geometry*** **8.10 The student will** **a) verify the Pythagorean Theorem; and** **b) apply the Pythagorean Theorem.** The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Identify the parts of a right triangle (the hypotenuse and the legs). • Verify a triangle is a right triangle given the measures of its three sides. • Verify the Pythagorean Theorem, using diagrams, concrete materials, and measurement. • Find the measure of a side of a right triangle, given the measures of the other two sides. • Solve practical problems involving right triangles by using the Pythagorean Theorem. Cortez Math
2 days	
Week 29	REVIEW for SOL Test
Week 30	REVIEW for SOL Test
Week 31	REVIEW for SOL Test
Week 32	REVIEW for SOL Test
Week 33	REVIEW for SOL Test
Week 34	SOL Test/Review
Week 35	SOL Test/Review
Week 36	Review all SOLs to this Point for Final Exam

Grade Eight Mathematics

The eighth-grade standards are intended to serve two purposes. First, the standards contain content that reviews or extends concepts and skills learned in previous grades. Second, they contain new content that prepares students for more abstract concepts in algebra and geometry. The eighth-grade standards provide students additional instruction and time to acquire the concepts and skills necessary for success in Algebra I. Students will gain proficiency in computation with rational numbers and will use proportions to solve a variety of problems. New concepts include solving multistep equations and inequalities, graphing linear equations, visualizing three-dimensional shapes represented in two-dimensional drawings, and applying transformations to geometric shapes in the coordinate plane. Students will verify and apply the Pythagorean Theorem and represent relations and functions, using tables, graphs, and rules. The eighth-grade standards provide a more solid foundation in Algebra I for those students not ready for Algebra I in grade eight.

While learning mathematics, students will be actively engaged, using concrete materials and appropriate technologies. However, facility in the use of technology shall not be regarded as a substitute for a student's understanding of quantitative concepts and relationships or for proficiency in basic computations. Students will also identify real-life applications of the mathematical principles they are learning that can be applied to science and other disciplines they are studying.

Mathematics has its own language, and the acquisition of specialized vocabulary and language patterns is crucial to a student's understanding and appreciation of the subject. Students should be encouraged to use correctly the concepts, skills, symbols, and vocabulary identified in the following set of standards.

Problem solving has been integrated throughout the six content strands. The development of problem-solving skills should be a major goal of the mathematics program at every grade level. Instruction in the process of problem solving will need to be integrated early and continuously into each student's mathematics education. Students must be helped to develop a wide range of skills and strategies for solving a variety of problem types.

Number and Number Sense

Focus: Relationships within the Real Number System

8.1 The student will
- a) simplify numerical expressions involving positive exponents, using rational numbers, order of operations, and properties of operations with real numbers; and
- b) compare and order decimals, fractions, percents, and numbers written in scientific notation.

8.2 The student will describe orally and in writing the relationships between the subsets of the real number system.

Computation and Estimation

Focus: Practical Applications of Operations with Real Numbers

8.3 The student will
- a) solve practical problems involving rational numbers, percents, ratios, and proportions; and
- b) determine the percent increase or decrease for a given situation.

8.4 The student will apply the order of operations to evaluate algebraic expressions for given replacement values of the variables.

8.5 The student will
- a) determine whether a given number is a perfect square; and
- b) find the two consecutive whole numbers between which a square root lies.

Measurement

Focus: Problem Solving

8.6 The student will
- a) verify by measuring and describe the relationships among vertical angles, adjacent angles, supplementary angles, and complementary angles; and
- b) measure angles of less than 360°.

8.7 The student will
- a) investigate and solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids; and
- b) describe how changing one measured attribute of a figure affects the volume and surface area.

Geometry

Focus: Problem Solving with 2- and 3-Dimensional Figures

8.8 The student will
- a) apply transformations to plane figures; and
- b) identify applications of transformations.

8.9 The student will construct a three-dimensional model, given the top or bottom, side, and front views.

8.10 The student will
- a) verify the Pythagorean Theorem; and
- b) apply the Pythagorean Theorem.

8.11 The student will solve practical area and perimeter problems involving composite plane figures.

Probability and Statistics

Focus: Statistical Analysis of Graphs and Problem Situations

8.12 The student will determine the probability of independent and dependent events with and without replacement.

8.13 The student will
- a) make comparisons, predictions, and inferences, using information displayed in graphs; and
- b) construct and analyze scatterplots.

Patterns, Functions, and Algebra

Focus: Linear Relationships

8.14 The student will make connections between any two representations (tables, graphs, words, and rules) of a given relationship.

8.15 The student will
- a) solve multistep linear equations in one variable with the variable on one and two sides of the equation;
- b) solve two-step linear inequalities and graph the results on a number line; and
- c) identify properties of operations used to solve an equation.

8.16 The student will graph a linear equation in two variables.

8.17 The student will identify the domain, range, independent variable, or dependent variable in a given situation.

Pre-Algebra
Verification Sheet

By signing below, I am verifying that I have read and reviewed the following materials for the 8th grade math course taken during the 2014-2015 school year:

Course Syllabus
State SOLs
Course Pacing Guide
Supply List

Students should keep these materials in their notebooks for future reference.

Print Student's Name _____ Date _____
Student's Signature _____

Parent or Guardian's Information:

Print Parent's Name _____ Date _____
Parent's Signature _____

If your child does a super job or could use an extra reminder to complete their assignments, how would you like me to contact you? Please fill in any means that you would like me to use and number them in order of which means would reach you the quickest or be the most convenient for you:

_____ I have reliable internet at my house and would not mind if my child was assigned homework on the computer.
_____ I do not live in an area with reliable internet and homework on the computer would be a hardship.

	Means of Communication You would Prefer that I Use:	**Please number them in order of which means would reach you the quickest or be the most convenient for you.**
Home Phone Number:		
Cell Phone Number:		
If cell, do you prefer a call or a text?		
Work Phone Number:		
E-mail Address:		

I give permission for my child to be photographed. These photographs will only be used for educational records and data. _____

Please return this form to Mrs. Warren by Friday September 5, 2014.