CURRICULUM UNIT MAP
1ST QUARTER

COURSE TITLE: Mathematics **GRADE:** 8

Unit Title and Objectives	List CLTs for Each Objective	Brief Description of Formative Assessment(s)	End-of-Unit Benchmark or Performance Assessment
Unit:1 **DATA AND PROBABILITY** **WEEK 1—3 - OBJECTIVES** Select, create, and use appropriate graphical representations of data Compare different representations of the same data Find, use, and interpret measures of center, outliners, and spread, including range, and interquartiles range Make conjectures about possible relationships between two characteristics of a sample on the basis of scatterplots and approximate lines of fit	Know the uses and benefits of various graphical representations: line plots, bar graphs, circle graphs, stem-and-leaf plots, histograms, box-and-whisker plots, line graphs, and scatterplots. Create various graphical representations: line plots, bar graphs, circle graphs, stem-and-leaf plots, histograms, box-and-whisker plots, line graphs, and scatterplots. Find, use, and interpret measures of center including mean, median, and mode. Find, use, and interpret measures of variation including outliers, range, quartiles, and interquartile range. Display and interpret data in a box-and-whisker plot. Identify the two values associated with each point in a scatterplot. Determine and interpret the relationship between two variables and the data it represents. Use scatterplots and approximate lines of fit to predict and interpolate data values.	*Create a foldable and write notes over key concepts regarding graphical representations and statistics *Complete graphs and analysis of AV 8th graders birth data *Create a foldable and write notes over measures of center, measures of variation, and box-and-whisker plots *Complete "Algebra Activity-Analyzing Data" on pg. 237 in Glencoe Textbook *Participate in kinesthetic activity using unifix cubes to determine an average and then write a journal entry describing the average process *Complete "Reading a Scatterplot" activity *Complete "Congress and Pizza" activity *Complete "Predicting" activity	Unit 1 Benchmark Assessment
Unit: 2 **NUMBERS AND OPERATIONS** **WEEK 4-6—OBJECTIVES** Compare and order rational numbers including percents Find their location on a number line	Define, classify, and identify rational numbers Write fractions as terminating and repeating decimals. Express percents as fractions and vice-versa, express percents as decimals and vice-versa. Graph rational numbers on a number line.	*Create foldable and write notes over rational numbers in it. *Participate in a class activity where each student is given an index card with a fraction or mixed number already printed on one side. Each student must write the decimal equivalent of that number on the other side. Then the class will line up in front of the classroom on order from least to greatest.	Continued on next page

CURRICULUM UNIT MAP
1ST QUARTER (Cont'd)

COURSE TITLE: Mathematics **GRADE:** 8

Unit Title and Objectives	List CLTs for Each Objective	Brief Description of Formative Assessment(s)	End-of-Unit Benchmark or Performance Assessment
Unit: 2 *Continued* **NUMBERS AND OPERATIONS** **WEEK 4-6—OBJECTIVES** Use fractions, decimals, and percents to solve problems Apply properties of operations to all rational numbers including order of operations and inverse operations Recognize equivalent representations for the same number and generate them by decomposing and composing numbers	Write ratios as fractions in simplest form Solve proportions using real-world problems Use the percent proportions to solve problems Estimate percents Use the order of operations to evaluate expressions Use Commutative and Associative Properties when evaluating expressions and solving equations Solve equations by using the Properties of Equality for all four operations Express numbers in standard form and in scientific notation Compare and order numbers written in scientific notation Write expressions using positive and negative exponents Write the prime factorization of composite numbers	*Create a foldable and write notes over using fractions, decimals, and percents to solve problems in it *Create a collage of advertisements and coupons, highlight the ratios used in ads and coupon, and write at least two math problems using those ratios. They must also write an explanation of the different ways ratios are used in ads and coupons *Create a foldable and write notes over the order of operations, Commutative and Associative Properties, Distributive Property, and Properties of Equality. *Solve problems over properties and order of operations using the e-instruction Clickers. *Find prime numbers on a hundreds chart (Sieve of Eratosthenes) *Complete a task requiring them to cut rectangles in equal squares with no material left. They will be in groups of 3 or 4.	Unit 2 Benchmark Assessment
Unit: 3 **ALGEBRAIC RELATIONSHIPS** **WEEK 7-9 – OBJECTIVES** Generalize patterns represented graphically or numerically with words or symbolic rules using explicit notation Compare and contrast various forms of representations of patterns	Use a table or chart to organize information Generalize a rule that describes a pattern for the nth term Understand pattern development Analyze patterns represented graphically or numerically	*Complete "Building Toothpicks" activity: students look for patterns in the number of toothpicks used to make the perimeter of each shape. They are required to write a formula that could be used to find the perimeter of any shape. *Solve patterns assigned from the textbook and worksheets as a homework grade. *Participate in several investigation activities regarding patterns. Teacher observation will be the assessment tool.	Unit 3 Benchmark Assessment

CURRICULUM UNIT MAP
2nd QUARTER

COURSE TITLE: Mathematics **GRADE:** 8

Unit Title and Objectives	List CLTs for Each Objective	Brief Description of Formative Assessment(s)	End-of-Unit Benchmark or Performance Assessment
Unit: 4 **ALGEBRAIC RELATIONSHIPS** **WEEK 1-4 —OBJECTIVES** Identify functions as linear or nonlinear from tables, graph, or equations Use symbolic algebra to represent and solve problems that involve linear relationships	Determine whether a function is linear or nonlinear by looking at its equation Determine whether a function is linear or nonlinear by using a table and comparing the rates of change Determine whether a function is linear or nonlinear by looking at its graph Identify and graph quadratic and cubic functions Translate verbal phrases into algebraic expressions and equations Evaluate expression containing variables Identify and solve one- and two-step equations	*Create foldable and take notes in it over linear and nonlinear functions *Work several problems as practice over identifying functions as linear or nonlinear from tables, graph, or equations and identifying and graphing quadratic and cubic functions *Use white boards to practice working one- and two-step problems *Work problems in a challenge activity using the clickers, kind of like jeopardy.	Unit 4 Benchmark Assessment
Unit: 5 **ALGEBRAIC RELATIONSHIPS** **WEEK 5-6—OBJECTIVES** Use properties to generate equivalent forms for simple algebraic expressions	Identify and use properties of addition and multiplication to simplify algebraic expressions Use the Distributive Property to write equivalent forms of algebraic expressions Use the Distributive Property to simplify algebraic expressions	*Work several problems over indentifying and using addition and multiplication properties to simplify algebraic expressions *Work several problems over using the Distributive Property to write equivalent forms of algebraic expressions and to simplify them	Continues on next page
Unit: 5 continued **ALGEBRAIC RELATIONSHIPS** **WEEK 5-6—OBJECTIVES** Model and solve problems using multiple representations such as graphs, tables, and linear equations	Solve linear equations with two variables Make a table to find solutions of linear equations Graph linear equations using ordered pairs	*Work several problems from their Glencoe textbook and worksheets	Unit 5 Benchmark Assessment
Unit: 6 **ALGEBRAIC RELATIONSHIPS** **WEEK 7-9—OBJECTIVES** Analyze the nature of change in quantities in linear relationships	Find the rates of change Solve problems involving direct variation Determine slopes and y-intercepts of lines	*Create foldable and write notes over analyzing rates of change *Complete the following activities: “Bouncing Tennis Balls,” “Building a Sense of Time and Its Relations to Distance and Speed,” “Algebra Activity: It’s All Downhill.”	Unit 6 Benchmark Assessment

CURRICULUM UNIT MAP
3rd QUARTER

COURSE TITLE: Mathematics **GRADE:** 8

Unit Title and Objectives	List CLTs for Each Objective	Brief Description of Formative Assessment(s)	End-of-Unit Benchmark or Performance Assessment
Unit: 7 **GEOMETRIC AND SPATIAL RELATIONSHIPS** **WEEK 1-2—OBJECTIVES** Identify the number of rotational symmetries of regular polygons	Classify polygons Distinguish the difference between regular polygons and other polygons Determine the sum of the measures of the interior and exterior angles of a polygon Distinguish between the different types of symmetry: line, bilateral, turn, rotational	*Create a foldable and write notes of key concepts regarding polygons and symmetry *Create several problem activities from their textbook and worksheet *Create a poster of symmetrical items *Create a poster of regular polygons with emphasis on their rotational symmetries	Unit 7 Benchmark Assessment
Unit: 8 **GEOMETRIC AND SPATIAL RELATIONSHIPS** **WEEK 3-4—OBJECTIVES** Create isometric drawings from a mat plan and vice versa	Build a three-dimensional figure when given a mat plan Draw the mat plan when given a three-dimensional figure built from cubes	*Given isometric drawings, students will be required to match them up with the correct mat plan(s) and vice versa *Build a three-dimensional figure out of wooden blocks, then a partner will draw a mat plan of it. (Partners will take turns doing both things) *Use the Isometric Drawing Tool to create and build isometric drawings from given mat plan	Unit 8 Benchmark Assessment
Unit: 9 **GEOMETRIC AND SPATIAL RELATIONSHIPS** **WEEK 3-5—OBJECTIVES** Draw and use visual models to represent and solve problems Use coordinate geometry to analyze properties of triangles and quadrilaterals	Draw geometric objects with specified properties, such as side lengths or angle measures Use two-dimensional representations of three-dimensional objects to visualize and solve problems such as those involving surface area and volume Use visual tools such as networks to represent and solve problems Use geometric models to represent and explain numerical and algebraic relationships Draw and label a coordinate plane Use ordered pairs to graph points on a coordinate plane Recognize and use the properties of triangles and quadrilaterals to solve problems	*Complete several tasks using a set of tangrams and an interactive program with tangrams *Complete "Constructing Three-Dimensional Figures" activity *Complete "Building Triangles and Quadrilaterals" *Complete several tasks in which students are required to infer information based on their knowledge of the properties of triangles and quadrilaterals and the coordinate system	Unit 9 Benchmark Assessment

CURRICULUM UNIT MAP
3rd QUARTER (Cont'd)

COURSE TITLE: Mathematics **GRADE:** 8

Unit Title and Objectives	List CLTs for Each Objective	Brief Description of Formative Assessment(s)	End-of-Unit Benchmark or Performance Assessment (Place after last objective in unit that is assessed)
Unit: 10 **GEOMETRIC AND SPATIAL RELATIONSHIPS** **WEEK 6-7—OBJECTIVES** Describe the relationship between the scale factor of the area of an image using a dilation	Use and construct scale drawings Use dilations to draw similar figures Recognize similar figures and corresponding parts- proportionality	*Create a foldable and write notes over scale drawings and dilations on it *Complete "Algebra Activity-Dilations" pg. 512 in Glencoe textbook	Unit 10 Benchmark Assessment
Unit: 11 **GEOMETRIC AND SPATIAL RELATIONSHIPS** **WEEK 8-9—OBJECTIVES** Reposition shapes under formal transformation such as reflection, rotation, and translation	Recognize and be able to draw a reflection (flip) Recognize and be able to draw a rotation (turn) Recognize and be able to draw a translation (slide)	*Create foldable and write their notes over formal transformations in it *Complete "Translations, Reflections, and Rotations" worksheet *Practice transformations using applet from NCTM	Unit 11 Benchmark Assessment

CURRICULUM UNIT MAP
4th QUARTER

COURSE TITLE: Mathematics **GRADE: 8**

Unit Title and Objectives	List CLTs for Each Objective	Brief Description of Formative Assessment(s)	End-of-Unit Benchmark or Performance Assessment
Unit: 12 **WEEK 1-4—OBJECTIVES** **MAP REVIEW**	*Review everything learned up to this point to prepare for MAP testing.	*Work several problems in class and as homework over material learned up to this point.	MAP BENCHMARK ASSESSMENT
Unit: 13 **GEOMETRIC AND SPATIAL RELATIONSHIPS** **WEEK 5-6—OBJECTIVES** Use the Pythagorean Theorem to find the length of a side of a right triangle Describe, classify, and generalize relationships between and among types of a) 2-dimensional objects, and b) 3-dimensional objects using their defining properities	Become familiar with the Pythagorean Theorem Use an area model to discover the Pythagorean Theorem Use the Pythagorean Theorem to solve word problems involving right triangles Use characteristics and properties of two-dimensional shapes to describe, classify, and generalize relationships Use characteristics and properties of three-dimensional shapes to describe, classify, and generalize relationships Justify geometric thinking	*Complete "Pythagorean Theorem" Activity *Complete "Reasoning about the Pythagorean Theorem" activity *Work several problems over Pythagorean Theorem in class and as homework *Complete a "journal write": write about a cube, telling all they know or have observed about it, describe some of the properties you have investigated or discovered, include a sketch, network, and answer to exercise 3 of "Exploring Cubes".	Unit 13 Benchmark Assessment
Unit: 14 **MEASUREMENT** **WEEK 7-9—OBJECTIVES** Solve problems of angle measure, including those involving triangles and parallel lines cut by a transversal Analyze precision and accuracy in measurement situations and determine the number of significant digits	Draw and measure angles, including reflex angles, to the nearest tenth Classify angles as acute, right, obtuse, straight, or reflex Find the missing angle in a triangle Identify and solve problems involving the relationships of angles formed by two parallel lines cut by a transversal Identify and solve problems involving the relationships of vertical, adjacent, complimentary and supplementary angles Describe measurements using precision and significant digits Apply precision and significant digits in problem-solving situations	*Create a foldable and write notes over angles and angle measurement problems in it *Work several problems over measuring, drawing, and classifying angles in class and as homework *Work several problems over identifying the relationships of angles formed by two parallel lines and a transversal, and of vertical, adjacent, complementary, and supplementary angles. *Complete "Reading to Learn Mathematics" pg. 642 *Work several problems over analyzing accuracy and precision in measurement situations and determining significant digits in class and as homework. *Create a table showing the rules for determining significant digits when adding, subtracting, and multiplying and include an example of each.	Unit 14 Benchmark Assessment