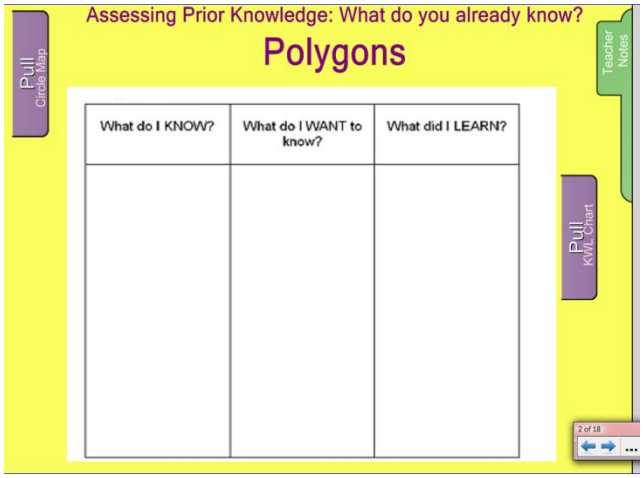
Instructional Plan for the Unit
The instructional unit focused on the geometry strand of the mathematics standards found in the Common Core standards and the South Carolina state standards. The unit emphasizes two dimensional shapes, including naming by defining properties, classifying by properties, comparing and contrasting properties to develop a defined hierarchy, and comparing congruency within a polygon and within multiple polygons. The students build on their prior knowledge of angles to create polygons, and using a protractor to aid in defining and classifying the polygons. The unit also utilized the previous skill of coordinate pairs and coordinate graphing to create polygons for identification and comparison in congruency. These unit objective correlate directly with the Common Core Standards and South Carolina States standards for mathematics in geometry with the focus on two dimensional figures, polygons. The standards require students to understand, analyze, and classify polygons. The students develop the defining properties through interacting with and comparing polygons. With knowledge of these properties, the students generate a hierarchy of how the various polygons relate to one another. With the focus on groups of polygons, which are triangles and quadrilaterals, the students engage with evidence for justifying the correlations they have generated. The students then apply their knowledge of polygons to identification of congruences with a single polygon and when polygons are compared to each other. The unit has many hands on lessons and lots of opportunities to discuss how polygons build our world. The students look for polygons in our classroom and in their homes. Though we are working in two dimensions for this unit, the upcoming units will move to the three dimensional and we can continue to discuss buildings and architecture. The students will be able to make real world connections to make the content relevant, meaningful and memorable.

Major Unit Objectives	Standards/ Competencies Correlation
1. The student will generate descriptions of the relationships between and among polygons and apply these relationships to construct arguments about their properties.	CCSS 5.G.B.3, CCSS 5.G.B.4, SC 5-4.1
2. The student will classify polygons in a hierarchy based on broad defining properties of polygons to specific defining properties of polygons.	CCSS 5.G.B.3, CCSS 5.G.B.4, SC 5-4.1
3. The student will generate mathematical statements about polygons and explain and justify their statements to their classmates and teacher using correct, complete, and clearly written and oral mathematical language.	CCSS 5.G.B.3, CCSS 5.G.B.4, SC 5-4.1, SC 5-4.2, SC5-4.3

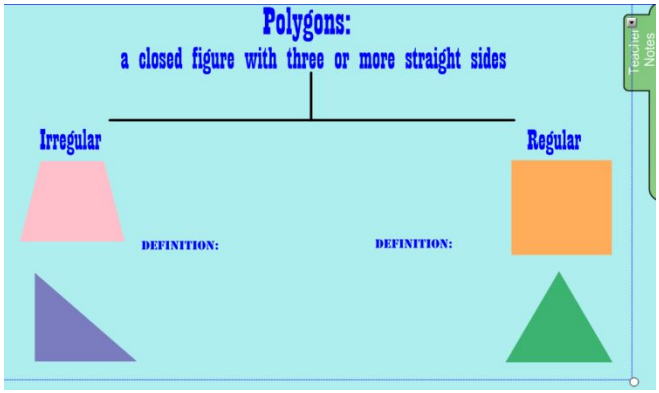
4. The student will analyze various polygons for corresponding parts, and classify the polygon as congruent or non congruent.	SC 5-4.2, SC 5-4.3
5. The student will create one to one mappings of polygons to justify with evidence congruency in sides and angles.	SC 5-4.2, SC 5-4.3

Lesson One	
Spiral Review	The students complete a weekly spiral math review called "Math 4 Today" There are four problems each day for Monday through Thursday. The students complete the problems independently and then all problems are examined, reviewed and answered through class discussion. The students lead this activity by agreeing, disagreeing and explaining their thoughts for solving the problems. On Fridays, the students independently complete the back of the worksheet, which contains ten problems that mimic the skills taught throughout the week. This work is graded as weekly classwork.
Whole Class Instruction	
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.
Objective	The student will identify the characteristics of a polygon, and classify polygons as regular and irregular.
Essential Question	What is a polygon? What are the attributes of a regular and irregular polygon?
Resources	1 Geoboard with two different colored bands for each student SMART Notebook: Smart Class Polygons 1 Index cards
Procedure	1. The teacher will begin with a warm-up review on the three types of angles. 2. The teacher will distribute geoboards with two bands to each student. 3. The teacher will ask the students to flip their boards so the fully pegged side of the geoboards faces up. 4. The teacher will introduce each band as a ray. 5. The teacher will instruct the students to create a right angle using their bands. 6. The students will hold their boards up to show their work as the teacher says "One, Two, Three – Show Me." 7. The teacher will survey the boards for correctness.

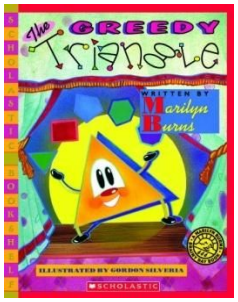
8. The teacher will instruct the students to change their right angles into acute angles by moving one of the rays of the right angle.
9. The students will hold their boards up to show their work as the teacher says “One, Two, Three – Show Me.”
10. The teacher will survey the boards for correctness.
11. The teacher will instruct the students to move one ray to create a right angle again.
12. The teacher will instruct the students to move one ray to create an obtuse angle.
13. The students will hold their boards up to show their work as the teacher says “One, Two, Three – Show Me.”
14. The teacher will survey the boards for correctness.
15. The teacher will ask the students what would occur if they had three bands to make three rays.
16. The students should generate a response that we could make a triangle.
17. The teacher will ask the students to name other shapes.
    a. Answers may include circle, square, rectangle, pentagon, trapezoid, octagon, and other shapes.
18. The teacher will ask the class helper for the day to collect the geoboards.
19. The teacher will introduce the new unit “How Do We Shape Up” with the focus on polygons in geometry.
20. The class will complete a KWL chart on polygons.



21. The teacher will then show the students a slide with polygons at the top of the hierarchy with two branches: one with regular polygons and one with irregular polygons.

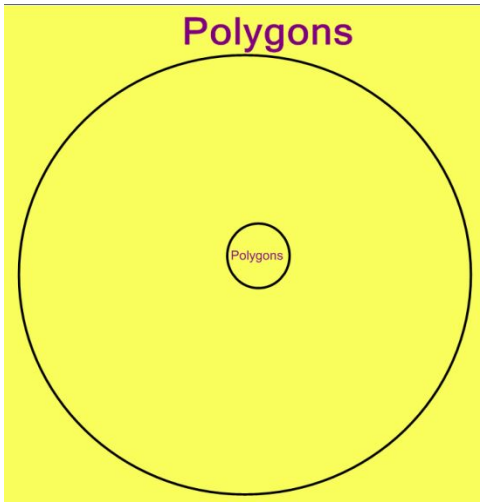
	 22. The teacher will ask the students to use the pictures of the polygons to determine what defines an irregular polygon and what defines a regular polygon. a. The teacher should encourage the students to build on the observations of other students. b. The conclusion should be that irregular polygons to not have congruent sides and angles, while regular polygons have congruent sides and angles. i. The students will most likely use the words “same” or “equal” but the teacher should take this opportunity to introduce the mathematical vocabulary terms of “congruent” and “congruency”. Congruent and congruency will be the term used in upcoming lessons in the unit. 23. The teacher will ask the students to name polygons that are present in the classroom and describe the polygon as regular or irregular. a. The teacher can pull name sticks if needed, but should get a verbal response from each student to check on understanding of the lesson. b. Polygons named by the students may include desk tops (irregular), cinder blocks of the walls (irregular), textbooks (irregular), SMART board (irregular), text books (irregular). 24. The teacher will tell the students the homework is to name 15 polygons in their rooms, and label the polygons as regular or irregular. a. The teacher will give each student an index card for their responses.
Assessment	Teacher monitors student responses Homework is checked the next day for accuracy and completion.

Lesson Two	
Spiral Review	The students complete a weekly spiral math review called “Math 4 Today” There are four problems each day for Monday through Thursday. The students complete the problems independently and then all problems are examined, reviewed and answered through class discussion. The students

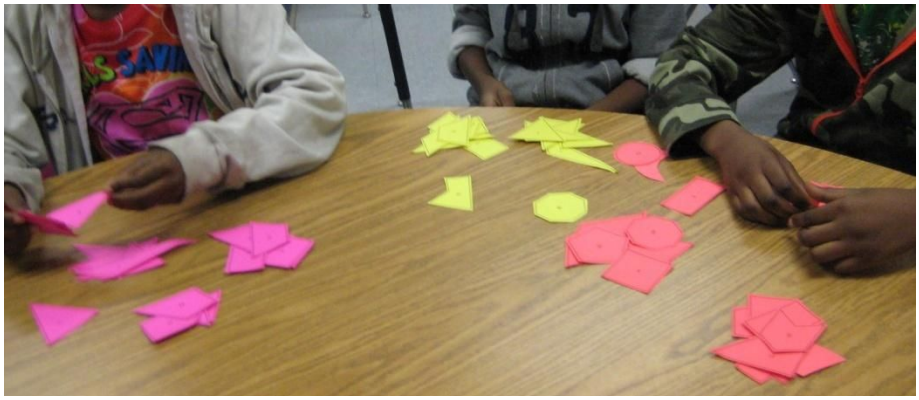
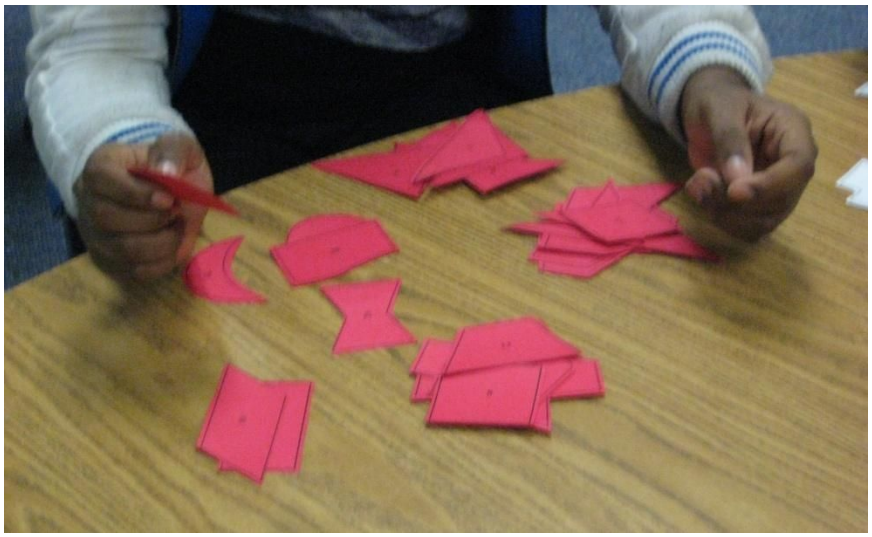
	lead this activity by agreeing, disagreeing and explaining their thoughts for solving the problems. On Fridays, the students independently complete the back of the worksheet, which contains ten problems that mimic the skills taught throughout the week. This work is graded as weekly classwork.
Whole Class Instruction	
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.
Objective	The student will identify side and angle measurement as defining properties of polygons.
Essential Questions	What are the defining properties of polygons?
Resources	The Greedy Triangle by Marilyn Burns  Geoboards with two different colored bands for each student.
Procedure	1. The teacher will begin by asking the students to place one band on the back of the board, which has a circle of pegs. 2. The teacher will tell the students they will be using the side with full pegs for today's lesson. 3. The teacher will introduce the book, *The Greedy Triangle*. 4. The teacher will ask the students to create a triangle on their geoboards. 5. The teacher will say "One, Two, Three – Show Me" and the students will hold up their work. 6. The teacher will survey the boards for correctness. 7. The teacher will tell the students that as we continue through the book today, our geoboard shape is going to change. 8. The teacher will read aloud the book. As the triangle changes, the students should change their geoboard shapes. a. Order: quadrilateral, pentagon, hexagon, heptagon, octagon, nonagon, decagon.

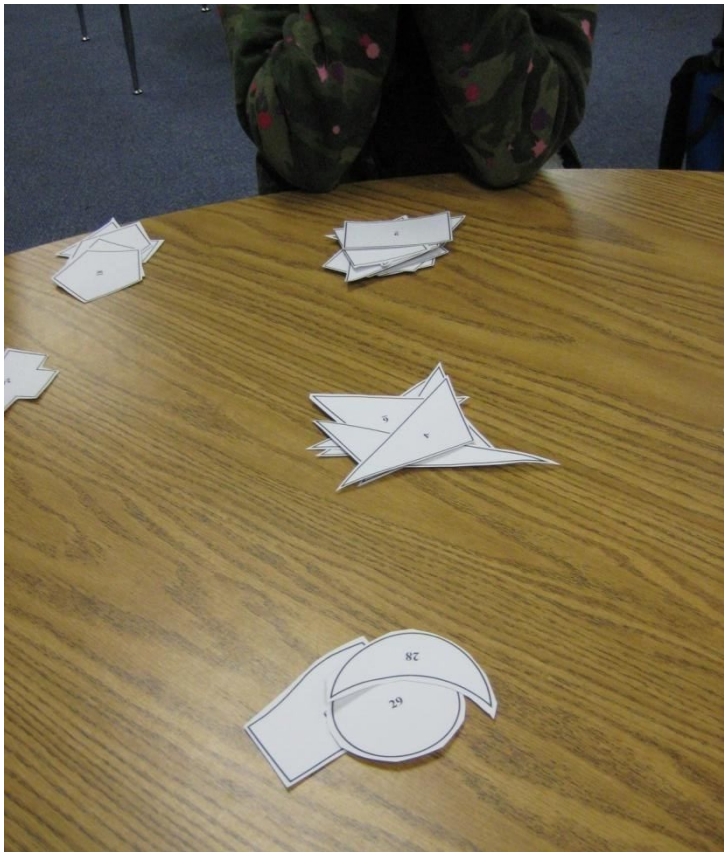
	b. The last changes are just an adding of sides, after sides, until the students arrive at a circle. 9. The teacher will ask what the students what is the ultimate change the triangle went through. a. The class discussion should lead to the fact that the triangle was no longer a polygon because a circle does not have sides. 10. The teacher will direct students to discuss what attributes all polygons must have. a. The class discussion should lead to all polygons have sides, which also means all polygons have angles. 11. The teacher will read aloud the exit ticket for the day.  Sam said that all of these shapes are polygons. Trisha said that only two of these shapes are polygons. Which student is correct? Explain why their statement is correct. Include mathematical language used in class to support your explanation. Be sure to discuss each of the shapes. 12. The students will independently complete the exit ticket.
Assessment	The teacher will grade the exit ticket for correctness of answer and use of mathematical vocabulary about the characteristics of polygons and the non polygon.

Lesson Three	
Spiral Review	The students complete a weekly spiral math review called “Math 4 Today” There are four problems each day for Monday through Thursday. The students complete the problems independently and then all problems are examined, reviewed and answered through class discussion. The students lead this activity by agreeing, disagreeing and explaining their thoughts for solving the problems. On Fridays, the students independently complete the back of the worksheet, which contains ten problems that mimic the skills taught throughout the week. This work is graded as weekly classwork.
Whole Class Instruction	
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.

	CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.
Objective	The student will identify polygons as closed figures with straight sides and angles.
Essential Questions	What are the defining properties of polygons?
Resources	SMART Notebook: Smart Class Polygons 1 Polygons Graphic Organizer for each student Polygons Exit Ticket 1
Procedure	1. The teacher will show the graphic organizer the students will complete.  2. The teacher will explain that the students should write what they know defines a polygon inside the circle, and use the space outside of the circle to write what is not a polygon. 3. The teacher will set the timer for 3 minutes. 4. The teacher will collect the graphic organizers to be used again at the conclusion of the lesson.
5 Centers for differentiated instruction	
1. Teacher Led Small Group Instruction (4-6 Students)	Small groups were creating using the Winter MAP scores, current grades in mathematics, and behavior skills for interactions with peers. The work in several centers is collaborative so strong social skills are needed to allow for the teacher to facilitate the teacher led small group without needed to heavily monitor the interactions of the other groups, which function independent of the teacher. The order of the groups varies depending on the current mood of the classroom, but all students are met with during each lesson. The centers menu is posted at the front of the classroom, and the students switch with cues from the teacher.

Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.
Objective	The student will identify the defining properties of polygons
Essential Questions	What are the defining properties of polygons?
Resources	7 Sets of 30 Shapes
Procedure	1. The teacher will give each student a bag of 30 shapes. 2. The teacher will instruct each student to sort their shapes using any logic they would like to apply. 3. The teacher will tell the students they must be able to verbally explain their logic and rationale for sorting their shapes in their chosen manner.

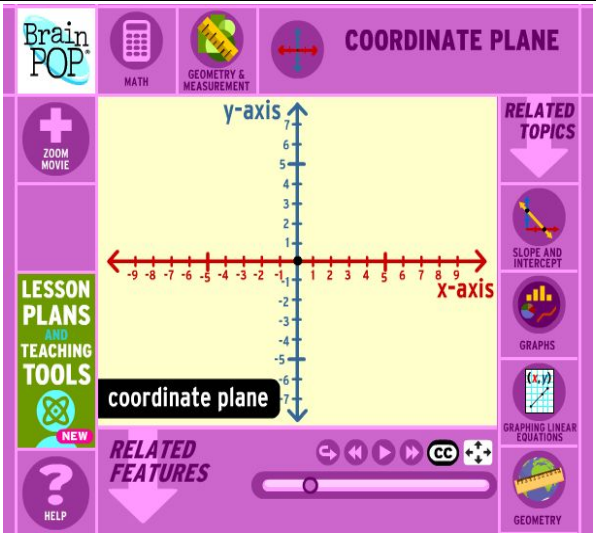
	 

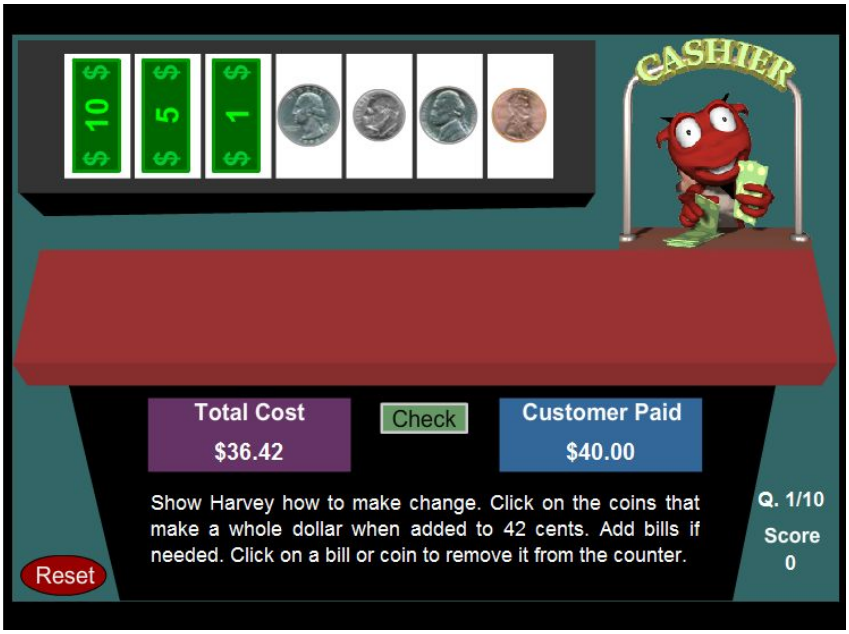


4. The student will take turns explaining their rationale for their sorting.
    a. The teacher should echo student's statements to ensure all the students in the group hear each others' responses.
5. The teacher will ask what similarities the students noticed in how each of them sorted the shapes.
6. The teacher will ask what differences the students noticed.
7. The small group should discuss together to develop the understanding that polygons are defined and classified by the measurements of the sides and angles.
8. The teacher will ask the students to review the characteristics of a polygon.
9. The teacher will ask the students to find the non polygons in their set of shapes. The students should hide their selections until all the students have selected.
10. The students will reveal their choices at the same time.
11. The teacher will spread out their choices and look for similarities and differences.
    a. The students should ultimately end up with three non polygons: the circle, the crescent, and the almost quadrilateral but for one curved side.
12. The discussion should conclude with a reinforcement of the characteristics of polygons as closed figures with straight sides that do not intersect at more than one place, which creates the angles.

	*The five resource students will be instructed with one bag of shapes. The teacher will ask the students to select two shapes that they think would be grouped together. These groupings will be the foundation for the same discussion had with the other groups of students.
Assessment	The teacher will monitor the rationale for sorting individually, and contributions to discussion.
Compass Learning (4 Students)	Differentiated assignments are given to each student to spiral prior skills for review and reinforcement. Six of the students are given lesson on upcoming skills to challenge. Current focus skills assigned are : 1. Adding and subtracting decimals to the hundredths place a. Resource students are completing subtraction on their level of 3rd or 4th grade. 2. Multiplying and dividing fractions 3. Division of whole numbers a. Resource students and three regular education are completing this activity on the level of 4th grade.
Standards	Focus 1 CCSS 5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Focus 2 CCSS 5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction Focus 3CCSS 5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Procedure	1. The students log on to Compass Learning and complete assigned tasks. 2. The students have individual white boards and EXPO markers to aid with computations.
Assessment	The teacher uses the reporting features on Compass Learning to monitor student progress.
Fast Math (4 students)	
Standards	CCSS 5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm. CCSS 5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place

	value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Procedure	1. The students log on to Fast Math and complete facts multiplication or division facts assigned by the program. a. Several students have been switched to division facts to aid in fluency and automaticity.
Assessment	The teacher uses the reporting feature on Fast Math to monitor student progress.
Cooperative Learning (4 – 6 Students)	
Standard	CCSS.Math.Content.5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
Objective	The student will accurately identify and mark a given coordinate pair.
Essential Question	How do you mark coordinate pairs on a coordinate plane?
Resources	*Battleship* board game Brain Pop video: Coordinate Planes
Procedure	1. The students play the game *Battleship* in pairs. a. A mini lesson was taught prior to the unit on how to play the game. The students have reached proficiency in independent play. b. Review with Brain Pop video: Coordinate Planes

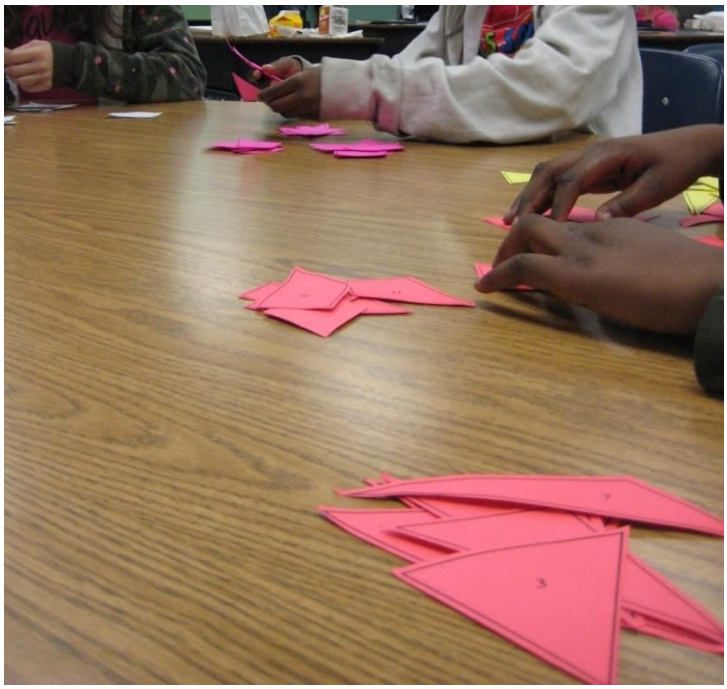
	 c. The students are seated at desks near the teacher, so she can hear the coordinates being called during play. i. The students are strictly instructed to make sure they call an x coordinate and then a y coordinate, which in the game means a number and a letter in the coordinate pair, i.e. (1, A). ii. If coordinates are called in the wrong order, i.e. (A, 1), their opponent does not have to declare a hit or a miss.
Independent Practice (4 Students)	
Standard	CCSS 5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
Objective	The student will fluently subtract decimals through the hundredths place.
Essential Question	How do you accurately subtract decimals?
Resources	Math Playground: *Making Change* SMART Board White Boards Expo Markers
Procedure	1. The students take turns subtracting the money amounts to determine the correct change. a. All the students use white boards to solve the subtraction problem, but only one student is at the Smart Board at a time. The remaining students are seated in front of the Smart Board.

	 2. The student must select the correct monetary units to display the correct change. a. If the student at the SMART Board incorrectly pulls the change, the next student may go to the board.
Whole Class Instruction	
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.
Objective	The student will identify side and angle measurement as defining properties of polygons.
Essential Questions	What are the defining properties of polygons?
Resources	SMART Notebook: Smart Class Polygons 1 Polygons Graphic Organizer for each student Brain Pop Video: Polygons

Procedure	1. The teacher will show the Brain Pop Video Polygons  2. The class will take the quiz that follows the lesson. a. The teacher should pull several name sticks for each question to allow for agreement and disagreement before answer choices are made. 3. The teacher will redistribute the graphic organizers from the introduction of the lesson. 4. The teacher will ask the students to add or change information on their organizers. a. The teacher should tell students not to erase, but to cross out earlier thoughts so she can see the change in understanding. 5. The teacher will show and read aloud the exit ticket question.  Stan said, “All of these polygons share the attribute of right angles.” Tamara disagreed with Stan by saying, “No, only two of these polygons share the attribute of right angles.” Who is correct? Explain using mathematical terms used in class. Your explanation should include: who is correct, why they are correct, and details about the angles. 6. The students must independently answer the question on their exit ticket.

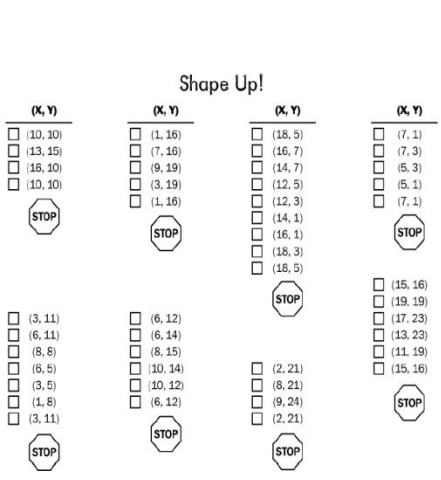
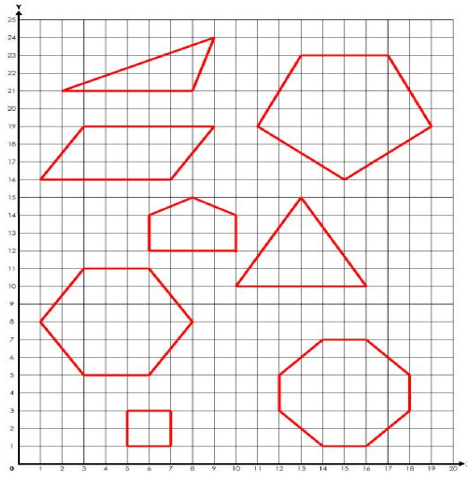
Assessment	The teacher will grade the organizers for accuracy of properties and characteristics written. The teacher will grade the exit ticket for correctness of answer and use of mathematical vocabulary about the angles in the polygons.

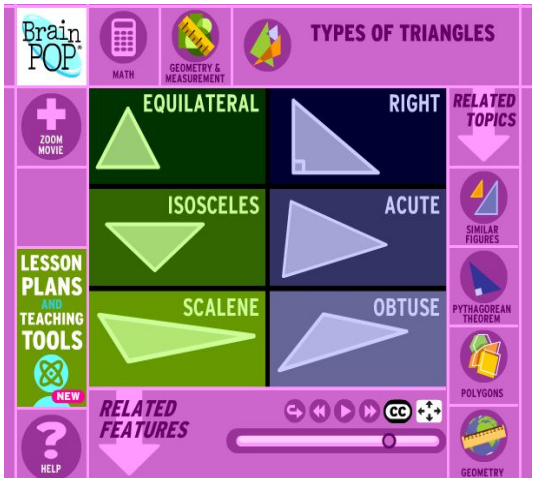
Lesson Four	
Spiral Review	The students complete a weekly spiral math review called “Math 4 Today” There are four problems each day for Monday through Thursday. The students complete the problems independently and then all problems are examined, reviewed and answered through class discussion. The students lead this activity by agreeing, disagreeing and explaining their thoughts for solving the problems. On Fridays, the students independently complete the back of the worksheet, which contains ten problems that mimic the skills taught throughout the week. This work is graded as weekly classwork.
5 Centers for differentiated instruction	
1. Teacher Led Small Group Instruction (4-6 Students)	Small groups were creating using the Winter MAP scores, current grades in mathematics, and behavior skills for interactions with peers. The work in several centers is collaborative so strong social skills are needed to allow for the teacher to facilitate the teacher led small group without needed to heavily monitor the interactions of the other groups, which function independent of the teacher. The order of the groups varies depending on the current mood of the classroom, but all students are met with during each lesson. The centers menu is posted at the front of the classroom, and the students switch with cues from the teacher.
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-5.2 Use a protractor to measure angles from 0 to 180 degrees
Objective	The student will identify side and angle measurement as defining properties of triangles.
Essential Questions	What are the defining properties of triangles?
Resources	7 Sets of 30 Shapes Rulers (metric side should be used) Protractors

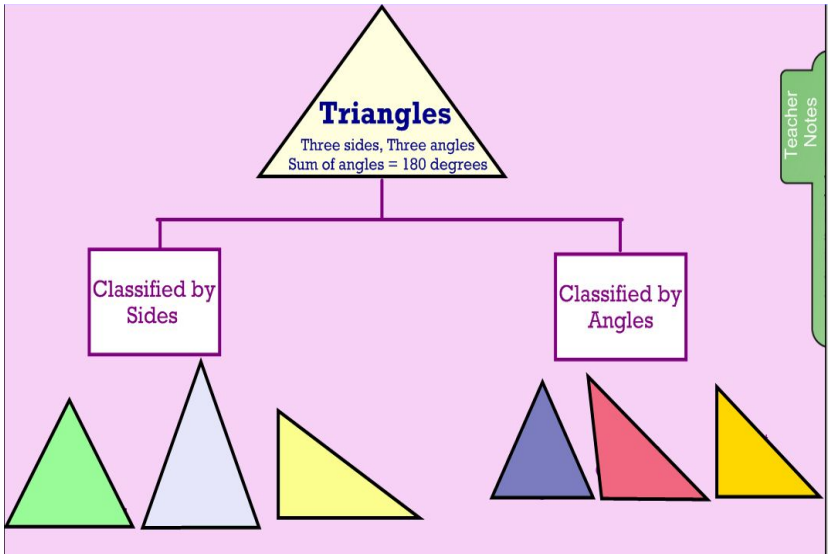
Procedure	1. Each student is given a bag of 30 shapes. 2. The teacher instructs the students to pull the three non polygons. a. The students should hide their selections. b. The students will all reveal at once the non-polygons they have pulled. c. The students should explain why they removed the three non polygons. 3. The teacher will ask the students to pull out all of the three sided polygons.  4. The teacher will ask the students for the name of a three sided polygon. a. The students will identify these shapes as triangles. 5. The teacher will ask the students to sort the triangles using logic of their choice. The students take turns explaining their rationales. a. The students should begin to notice the angles of the triangles and side lengths. 6. The teacher will guide the students in using their protractors to measure the angles in the triangles. 7. The teacher will ask the students to name the types of angles they are measuring as acute, right or obtuse. 8. The teacher will introduce how the triangles can be classified by their angles into the group: right, acute and obtuse. a. Acute triangles – ALL angles must be acute b. Right triangles – One angle is a right angle c. Obtuse triangles – One angle is an obtuse angle. 9. The teacher will ask the students to pull an acute triangle. a. As before, students should cover their selections and reveal all at once.

	10. The students will exchange chosen triangles and measure the angles to verify the answer. 11. This process will be repeated with right and obtuse triangles. 12. The teacher will ask the students if there is a second defining feature for the triangles other than the angles. a. The students should mention side lengths again. 13. The teacher will explain second labels for triangles: equilateral, isosceles and scalene. a. Equilateral: ALL sides are congruent b. Isosceles: Two sides are congruent c. Scalene: No sides are congruent. 14. The teacher will ask the students to group their triangles by side measurements. *The five resource students will be instructed with one bag of shapes. The teacher will spread out the shapes and ask the students to choose the non polygons to remove from the set. The teacher will ask the students to justify the shapes they removed as non polygons. The teacher will then ask the students to select triangles from the set. The teacher will then go through grouping the triangles by their characteristics of side length and angle measurement.
Assessment	The teacher will monitor the rationale for sorting individually, and contributions to discussion.
Compass Learning (4 Students)	Differentiated assignments are given to each student to spiral prior skills for review and reinforcement. Six of the students are given lesson on upcoming skills to challenge. Current focus skills assigned are : 1. Adding and subtracting decimals to the hundredths place a. Resource students are completing subtraction on their level of 3rd or 4th grade. 2. Multiplying and dividing fractions 3. Division of whole numbers 4. Resource students and three regular education are completing this activity on the level of 4th grade.
Standards	Focus 1 CCSS 5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Focus 2 CCSS 5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction Focus 3 CCSS 5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on

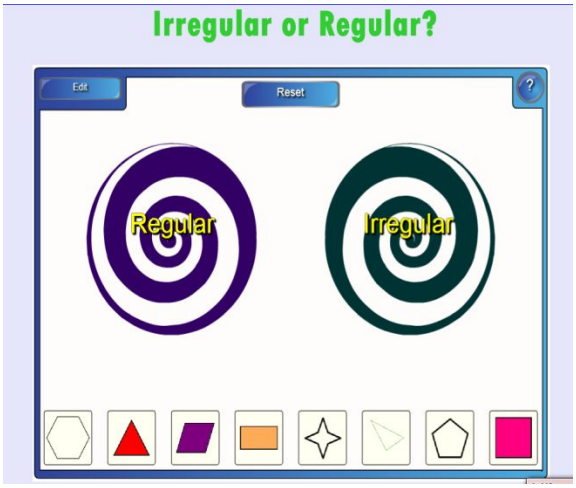
	place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Procedure	3. The students log on to Compass Learning and complete assigned tasks. 4. The students have individual white boards and EXPO markers to aid with computations.
Assessment	The teacher uses the reporting features on Compass Learning to monitor student progress.
Fast Math (4 students)	
Standards	CCSS 5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm. CCSS 5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Procedure	2. The students log on to Fast Math and complete facts multiplication or division facts assigned by the program. a. Several students have been switched to division facts to aid in fluency and automaticity.
Assessment	The teacher uses the reporting feature on Fast Math to monitor student progress.
Cooperative Learning (4 – 6 Students)	
Standard	CCSS.Math.Content.5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
Objective	The student will accurately identify and mark a given coordinate pair.
Essential Question	How do you mark coordinate pairs on a coordinate plane?
Resources	*Battleship* board game

Procedure	2. The students play the game *Battleship* in pairs. a. A mini lesson was taught prior to the unit on how to play the game. The students have reached proficiency in independent play. b. The students are seated at desks near the teacher, so she can hear the coordinates being called during play. i. The students are strictly instructed to make sure they call an x coordinate and then a y coordinate, which in the game means a number and a letter in the coordinate pair, i.e. (1, A). ii. If coordinates are called in the wrong order, i.e. (A, 1), their opponent does not have to declare a hit or a miss.
Independent Practice (4 Students)	
Standard	CCSS.Math.Content.5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
Objective	The student will accurately plot x and y coordinates on a coordinate grid.
Essential Question	How do you plot coordinates on a coordinate grid?
Resources	Mystery picture plot Rulers
Procedure	1. The student independently plots the listed coordinates, and connects the plotted points using a ruler to create a picture.  

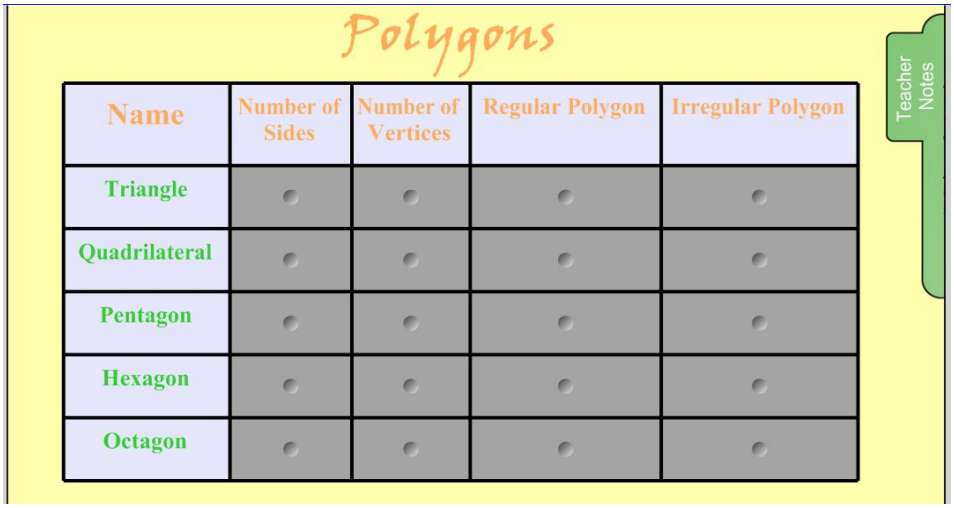
Whole Class Instruction	
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties.
Objective	The student will identify side and angle measurement as defining properties of triangles.
Essential Questions	What are the defining properties of polygons?
Resources	SMART Notebook: Smart Class Polygons 1
Procedure	1. The teacher will ask the students to recall the ways to classify triangles. 2. The teacher will show the Brain Pop video: Types of Triangles.  3. The teacher will show the classifying triangles slide.

	 4. The students will go through the names of each of the triangles. a. The triangles slide to reveal the name underneath. 5. The students will complete a short definition chart for triangles along with an exit ticket. 6. The teacher will read aloud the definition chart and the exit ticket.  Sara and Mark were talking about these two triangles. Sara said that they both have two congruent sides. Mark said that only one triangle has congruent sides. Write a response that Mark would give to Sara to justify his remark back to Sara. Be sure you explain using similarities and differences in both triangles. 7. The students will independently complete the work.
Assessment	The teacher will grade the definition chart for accuracy. The teacher will grade the exit ticket for correctness of answer and use of mathematical vocabulary about the characteristics of the two triangles.

Lesson Five	
Spiral Review	The students complete a weekly spiral math review called “Math 4 Today” There are four problems each day for Monday through Thursday. The students complete the problems independently and then all problems are examined, reviewed and answered through class discussion. The students lead this activity by agreeing, disagreeing and explaining their thoughts for solving the problems. On Fridays, the students independently complete the back of the worksheet, which contains ten problems that mimic the skills taught throughout the week. This work is graded as weekly classwork.
Whole Class Instruction	
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.
Objective	The student will classify polygons using angle and side measurements as defining characteristics.
Essential Questions	How do you classify polygons?
Resources	SMART Notebook: Smart Class Polygons 1 Study Jams: Classifying Triangles Angles and Classifying Polygons Assessment
Procedure	1. The teacher will review by asking students to recall the difference between regular and irregular polygons. 2. The teacher will pull name sticks for students to complete an interactive polygon sort.



3. The class will then review sides and angles defining characteristics for polygons.



Name	Number of Sides	Number of Vertices	Regular Polygon	Irregular Polygon
Triangle				
Quadrilateral				
Pentagon				
Hexagon				
Octagon				

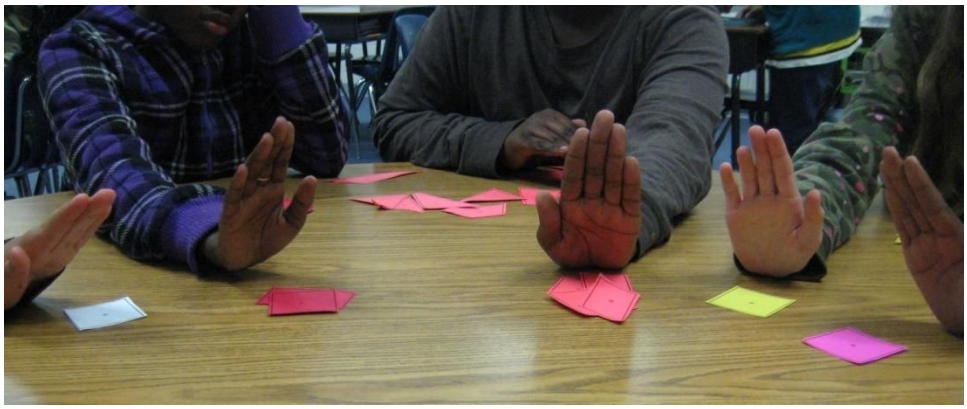
4. The teacher will then show the final review about triangles – Study Jams: Classifying Triangles.

5. The teacher will display the assessment on the Smart Board.
6. The teacher will read through the test with the students to ensure all students understand the directions and requirements.

	7. The teacher will answer students' questions about the directions and requirements. a. Specific student questions are addressed as needed at the student's desk. 8. The teacher will remind the students of test taking expectations for the classroom environment. 9. The teacher will distribute the assessments. a. Students are to place assessments face down at the corner of their desks when completed. b. Students are to read silently at their desks until all tests are submitted. c. Resource students will have their assessments collected, reviewed, and given a second opportunity to test in the resource room. 10. The teacher will collect assessments as described above. a. The teacher should double check that the students have answered all questions with reasonableness to what was asked. b. If a student appears to have misunderstood directions, the assessment should be given back with teacher clarification of the expected work to be completed.
Assessment	The assessment will be graded for correctness, accuracy and thoroughness of answers. A rubric is used for short answer responses.

Lesson Six	
Spiral Review	The students complete a weekly spiral math review called "Math 4 Today" There are four problems each day for Monday through Thursday. The students complete the problems independently and then all problems are examined, reviewed and answered through class discussion. The students lead this activity by agreeing, disagreeing and explaining their thoughts for solving the problems. On Fridays, the students independently complete the back of the worksheet, which contains ten problems that mimic the skills taught throughout the week. This work is graded as weekly classwork.
6 Centers for differentiated instruction	
1. Teacher Led Small Group Instruction (4-6 Students)	Small groups were creating using the Winter MAP scores, current grades in mathematics, and behavior skills for interactions with peers. The work in several centers is collaborative so strong social skills are needed to allow for the teacher to facilitate the teacher led small group without needed to heavily monitor the interactions of the other groups, which function independent of the teacher. The order of the groups varies depending on the current mood of the classroom, but all students are met with during each lesson. The centers menu is posted at the front of the classroom, and the students switch with cues from the teacher.
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.

	CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties. SC 5-5.2 Use a protractor to measure angles from 0 to 180 degrees
Objective	The student will identify side and angle measurement as defining properties of quadrilaterals.
Essential Questions	What are the defining properties of quadrilaterals?
Resources	7 Sets of 30 Shapes Rulers (metric side should be used) Protractors
Procedure	1. Each student is given a bag of 30 shapes. 2. The teacher instructs the pull out all the triangles and quadrilaterals. a. The teacher should ask the students to explain what a triangle is and what is a quadrilateral to ensure students are making the correct selections. 3. The teacher will ask the students to set aside the quadrilaterals. 4. The teacher will ask the students to choose an equilateral triangle. a. The students should hide their selections under their hands. b. All the students will reveal their selections at the same time. c. This process will be repeated for all selections made during small group. 5. The teacher will place their choices in groups if multiple students selected the same shape. Single picks will also be displayed. 6. The teacher will ask the students to justify their selections using mathematical vocabulary. a. The students should explain equilateral triangles all have the same side lengths. i. Students can describe the triangle as regular. b. Students may use rulers and protractors to justify selections 7. The teacher will repeat this process with isosceles, scalene, acute, right and obtuse. 8. The teacher will ask the students to set aside the triangles. 9. The teacher will ask the students to sort the quadrilaterals using logic of their choice. The students take turns explaining their rationales. a. The students should begin to notice the angles of the quadrilaterals and side lengths. 10. The teacher will ask the students to select the regular polygon from the quadrilaterals. a. The students should hide their selections under their hands. b. All the students will reveal their selections at the same time.



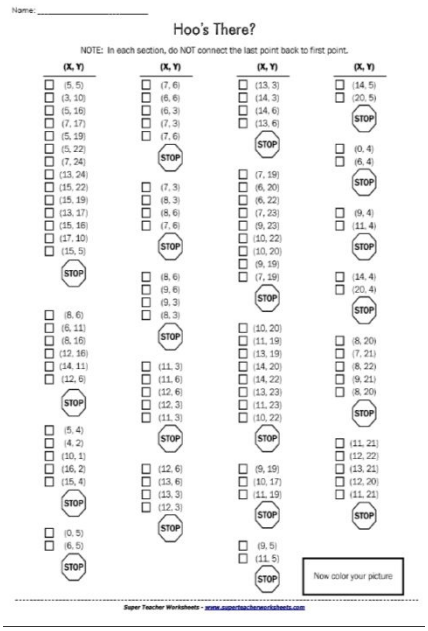
11. The teacher will place their choices in groups if multiple students selected the same shape. Single picks will also be displayed.
    a. The students should work to identify the square as the only regular polygon.
12. The teacher will ask the students to describe the defining features of the square using side lengths and angle measurements.
    a. The students should conclude all sides are congruent.
    b. The students should conclude that all the angles are also congruent and 90˚.
        i. Each student should use a protractor to confirm this observation.
13. The teacher will ask the students to look at the sides of the square and ask the students to give another word than congruent that could be used to describe the sides.
    a. Students may say equal or same, but must be reminded that these are synonyms for congruent.
    b. The teacher may need to draw her fingers along the opposite sides to aid the students in recalling the term parallel from the unit on angles.
14. The teacher will explain that two sets of parallel lines is a defining characteristic of certain quadrilaterals.
15. The teacher will ask the students to find another quadrilateral with two sets of parallel lines.
    a. The students should hide their selections under their hands.
    b. All the students will reveal their selections at the same time.

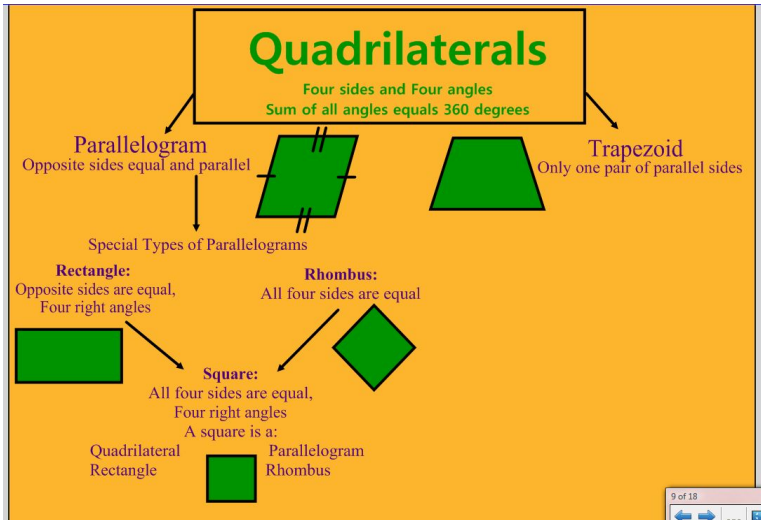
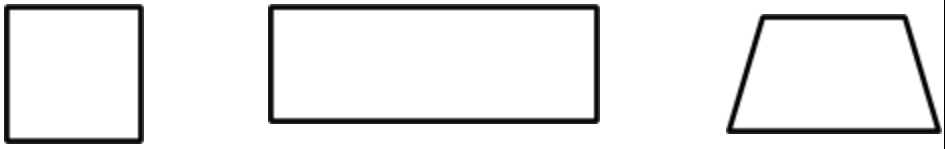
	16. The teacher will place their choices in groups if multiple students selected the same shape. Single picks will also be displayed. a. The teacher will ask the students to justify their choices by running their fingers along the parallel lines. b. The teacher should pull the parallelogram to the front. i. The students may have also correctly pulled a rectangle or rhombus. 17. The teacher will ask the students to recall the name for these shapes. a. The term the students should reach is a parallelogram. 18. The teacher will explain that the parallelogram begins a naming hierarchy for quadrilaterals. a. If the rectangle and rhombus have not been selected by any of the students, the teacher may ask for another parallelogram. i. The square, rhombus and rectangle should all be present. 19. The teacher will ask the students to identify the characteristics of the rectangle. a. The students should work to identify two sets of congruent sides and four 90˚ angles. b. The students should confirm these observations using rulers and protractors. 20. The teacher will ask the students to identify the characteristics of the rhombus. a. The students should work to identify four congruent sides, but not congruent angles. i. The students should use rulers and protractors. ii. The students should identify two sets of acute angles and two sets of obtuse angles. 21. The teacher should ask the students to identify the similarities in all shapes. a. All four have two sets of parallel sides. b. Rectangles and squares have four 90˚ angles. c. Rhombuses and squares have four congruent sides. 22. The teacher should lay the quadrilaterals into a hierarchy with parallelogram at the top, rectangle and rhombus directly underneath and square on the bottom. a. The teacher should review the names for all as quadrilaterals. b. Parallelograms are quadrilaterals and parallelograms. c. Rectangles are rectangles, parallelograms and quadrilaterals. d. Rhombuses are rhombuses, parallelograms and quadrilaterals. e. Squares are squares, rectangles, rhombuses, parallelograms and quadrilateral. 23. The teacher will ask the students to pull out the polygons we have not yet discussed. 24. The teacher will ask the students to select one polygon they believe has a specific name. a. The students should be seeking the trapezoid.

	25. The teacher will identify the trapezoid. 26. The teacher will ask the students what they think are the defining characteristics of a trapezoid. a. The students should notice one set of parallel sides. b. The students may notice the set of congruent sides. i. The teacher should pull the second trapezoid that does not have congruent sides. ii. The students should conclude that trapezoids have one set of parallel sides. 27. The teacher will ask the students what names can be given to classify the trapezoid. a. The students should conclude the trapezoid has two names- trapezoid and quadrilateral. 28. The teacher should ask the students what the remaining polygons are classified as. a. The students should look for parallel sides to start the investigation. b. The students should conclude that the remaining polygons are just quadrilaterals. *The five resource students will be instructed with one bag of shapes. The teacher will ask the students to select quadrilaterals from the set. The teacher will then go through grouping the quadrilaterals by their characteristics of side length and angle measurement.
Assessment	The teacher will monitor the rationale for sorting individually, and contributions to discussion.
Compass Learning (4 Students)	Differentiated assignments are given to each student to spiral prior skills for review and reinforcement. Six of the students are given lesson on upcoming skills to challenge. Current focus skills assigned are : 5. Adding and subtracting decimals to the hundredths place 6. Multiplying and dividing fractions 7. Division of whole numbers
Standards	Focus 1 CCSS 5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Focus 2 CCSS 5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction Focus 3 CCSS 5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place

	value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Procedure	1. The students log on to Compass Learning and complete assigned tasks. 2. The students have individual white boards and EXPO markers to aid with computations.
Assessment	The teacher uses the reporting features on Compass Learning to monitor student progress.
Fast Math (4 students)	
Standards	CCSS 5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm. CCSS 5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Procedure	3. The students log on to Fast Math and complete facts multiplication or division facts assigned by the program. a. Several students have been switched to division facts to aid in fluency and automaticity.
Assessment	The teacher uses the reporting feature on Fast Math to monitor student progress.
Cooperative Learning (4 – 6 Students)	
Standard	CCSS.Math.Content.5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
Objective	The student will accurately identify and mark a given coordinate pair.
Essential Question	How do you mark coordinate pairs on a coordinate plane?
Resources	*Battleship* board game
Procedure	3. The students play the game *Battleship* in pairs.

	a. A mini lesson was taught prior to the unit on how to play the game. The students have reached proficiency in independent play. b. The students are seated at desks near the teacher, so she can hear the coordinates being called during play. i. The students are strictly instructed to make sure they call an x coordinate and then a y coordinate, which in the game means a number and a letter in the coordinate pair, i.e. (1, A). ii. If coordinates are called in the wrong order, i.e. (A, 1), their opponent does not have to declare a hit or a miss.
Independent Practice (4 Students)	
Standard	CCSS.Math.Content.5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
Objective	The student will accurately plot x and y coordinates on a coordinate grid.
Essential Question	How do you plot coordinates on a coordinate grid?
Resources	Mystery picture plot Rulers
Procedure	1. The student independently plots the listed coordinates, and connects the plotted points using a ruler to create a picture.

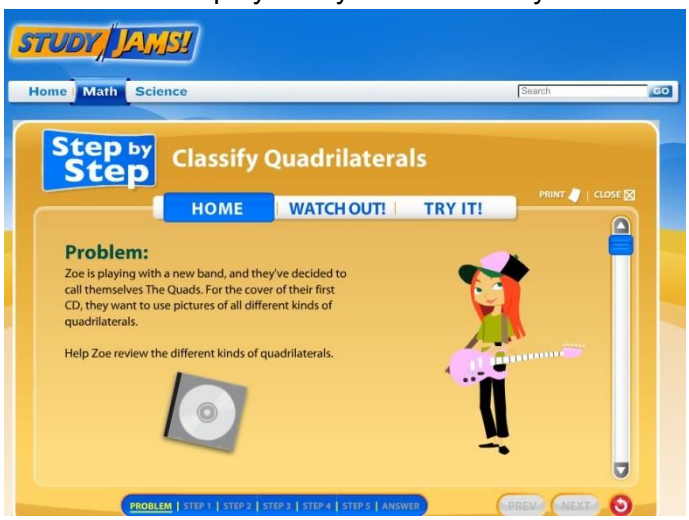
	
SMART Board	
Logic Game	This game is used as a cooperative learning tool and a reward incentive for students working well during small group centers. The students must manipulate the pieces in the game to have the correct colored sphere land the basket. Students work as individuals and in pairs, learning from the successes and mistakes made. 
Whole Class Instruction	
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For

	example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.
Objective	The student will identify side and angle measurement as defining properties of quadrilaterals. The students will classify quadrilaterals into a hierarchy based on defining properties.
Essential Questions	What are the defining properties of quadrilaterals? How are quadrilaterals related based on their properties?
Resources	SMART Notebook: Smart Class Polygons 1
Procedure	1. The teacher will ask the students to recall the ways to classify quadrilaterals. 2. The teacher will show the classifying quadrilaterals slide.  3. The teacher should use the screen feature to start with just the definition of quadrilaterals showing and move through the hierarchy. 4. The students should discuss the properties of each shape, as discovered in small groups. 5. The teacher will read aloud the exit ticket. 

	Denise says all of these polygons can be described as rectangles. Linda disagrees with Denise, and says that only one can be described as a rectangle. Explain which student is right using mathematical language about quadrilaterals. 6. The students will independently answer and submit their exit ticket..
Assessment	The teacher will grade the exit ticket for correctness of answer and use of mathematical vocabulary about the characteristics of the quadrilaterals.

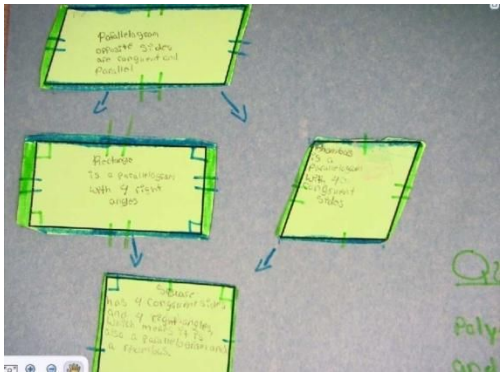
Lesson Seven	
Spiral Review	The students complete a weekly spiral math review called “Math 4 Today” There are four problems each day for Monday through Thursday. The students complete the problems independently and then all problems are examined, reviewed and answered through class discussion. The students lead this activity by agreeing, disagreeing and explaining their thoughts for solving the problems. On Fridays, the students independently complete the back of the worksheet, which contains ten problems that mimic the skills taught throughout the week. This work is graded as weekly classwork.
Whole Class Instruction	
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.
Objective	The student will classify quadrilaterals into a hierarchy based on defining properties.
Essential Question	How can quadrilaterals be classified into a hierarchy?
Resources	SMART Notebook: Smart Class Polygons 1 Study Jams: Classify Quadrilaterals Quadrilaterals on cardstock for each student Ledger sized sheet of construction paper for each student Scissors for each student Glue stick for each student Two different colored markers for each student
Procedure	1. The teacher will ask the students to recall the different names for quadrilaterals. a. The students should name parallelogram, rectangle, rhombus, square and trapezoid.

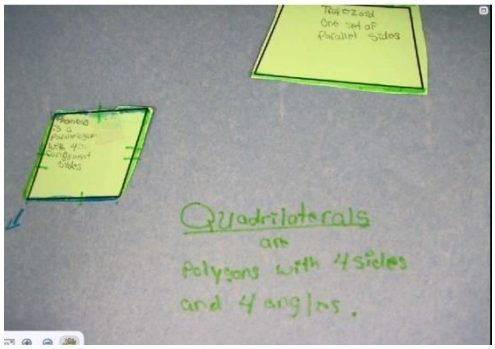
2. The teacher will play Study Jams: Classify Quadrilaterals.

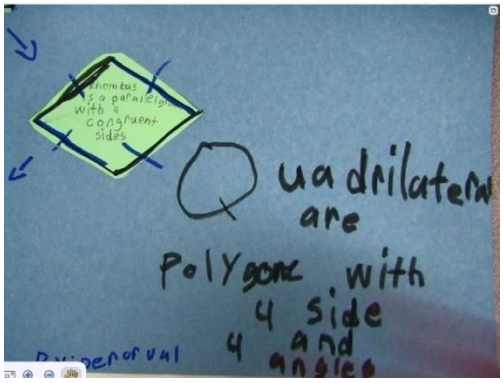


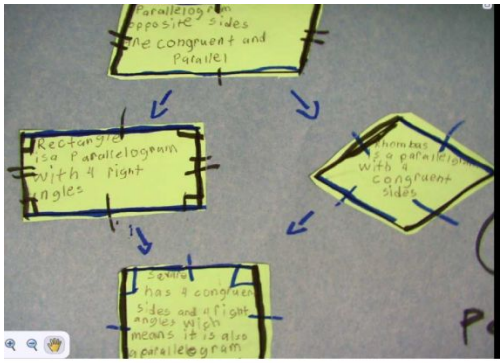
3. The teacher will explain that they will be creating a hierarchy chart for the quadrilaterals with definitions and labeled characteristics.
4. The teacher will show the students their quadrilaterals to cut out.
5. The teacher will explain that each quadrilateral should be cut out leaving a slight border around the edge.
    a. The students should not cut on the lines because the sides will be needed to label parallels, congruency and angles.
6. The teacher will distribute the quadrilaterals and scissor to each student.
    a. Scraps should be placed flat in the center of each group to be collected for recycling.
    b. Students should have five shapes: parallelogram, rectangle, rhombus, square and trapezoid.
7. The teacher will collect the scissors and the class helper will collect the scraps for recycling.
8. The teacher will go through the polygons on the ELMO, creating definitions with the students to write on each polygon.
    a. Parallelogram –Opposite sides that are parallel and congruent.
    b. Rectangle – a parallelogram with four right angles
    c. Rhombus – a parallelogram with 4 congruent sides
    d. Square – four congruent sides and 4 right angles, which means it is also a rhombus, rectangle, and parallelogram.
    e. Trapezoid – One set of parallel sides
9. The teacher will distribute a ledger sized piece of construction paper to each student.
10. The teacher will then model placing the shapes in a hierarchy.
    a. Parallelogram and Trapezoid at the top spaced apart.
    b. Rectangle and Rhombus under the Parallelogram
    c. Square under the Rectangle and Rhombus.
11. The teacher will verify that each student has correctly placed the shapes.

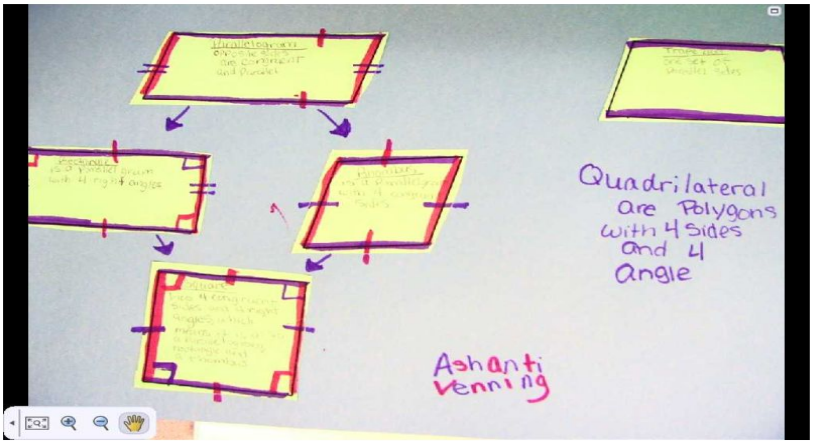
	a. The teacher will give a glue stick and allow the student to pick out two different colored markers. b. The teacher will circulate until all students have glued their shapes. 12. The teacher will then go through marking the characteristics of each quadrilateral. a. Parallelogram i. Using the different colored markers, one set of parallels is marked with one color, and the other set with the other color. ii. One dash for one set of congruent lines. iii. Two dashes for the other set of congruent lines. b. Rectangle i. Using the different colored markers, one set of parallels is marked with one color, and the other set with the other color. ii. One dash for one set of congruent lines. iii. Two dashes for the other set of congruent lines. iv. Four small L's turned in each angle to mark the right angles c. Rhombus i. Using the different colored markers, one set of parallels is marked with one color, and the other set with the other color. ii. One dash on each side to mark all sides as congruent d. Square i. Using the different colored markers, one set of parallels is marked with one color, and the other set with the other color. ii. One dash on each side to mark all sides as congruent iii. Four small L's turned in each angle to mark the right angles e. Trapezoid i. Using the different colored markers, one set of parallels is marked with one color, and the other set with the other color. 13. The students will use the bottom corner to mark all the polygons as quadrilaterals. a. Quadrilaterals are polygons with four sides and four angles.



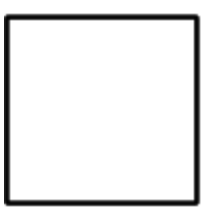


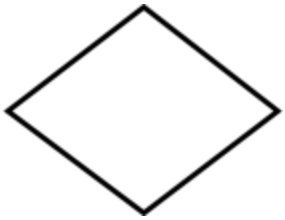






14. The teacher will read aloud the exit ticket.

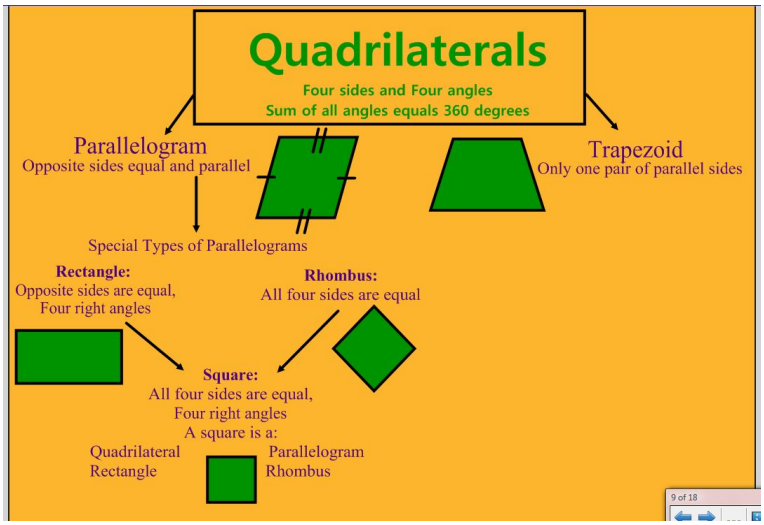




Two students are looking at these shapes in their math group. Jonah says that both of the shapes are squares because they each have four equal sides, but William disagrees. He says that only one shape is a square. Explain which

	student is right using mathematical language about the properties of quadrilaterals. 15. The students will complete and submit their exit tickets.
Assessment	The teacher will grade each hierarchy for accuracy in written characteristics and in labeling. The teacher will grade the exit ticket for correctness of answer and use of mathematical vocabulary about the characteristics of the quadrilaterals.

Lesson Eight	
Spiral Review	The students complete a weekly spiral math review called “Math 4 Today” There are four problems each day for Monday through Thursday. The students complete the problems independently and then all problems are examined, reviewed and answered through class discussion. The students lead this activity by agreeing, disagreeing and explaining their thoughts for solving the problems. On Fridays, the students independently complete the back of the worksheet, which contains ten problems that mimic the skills taught throughout the week. This work is graded as weekly classwork.
Whole Class Instruction	
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties.
Objective	The student will classify quadrilaterals and triangles using angle and side measurements as defining characteristics.
Essential Questions	How do you classify quadrilaterals and triangles?
Resources	SMART Notebook: Smart Class Polygons 1 Study Jams: Classifying Triangles Coordinate Pairs and Classifying Triangles and Quadrilaterals Assessment

Procedure	1. The teacher will review by asking students to recall the defining characteristics when classifying polygons. a. The students should name sides and angles. 2. The teacher will post the quadrilaterals hierarchy  3. The class will then review sides and angles defining characteristics for the quadrilaterals. 4. The teacher will name a characteristic such as parallel sides, right angles, or congruent sides and a student must name a quadrilateral with those characteristics. a. The teacher should pull name sticks, and allow multiple students to answer each time to allow for agreement and disagreement. 5. The teacher will review coordinate pair graphing. a. The students should answer that the x coordinate precedes the y coordinate. 6. The teacher will display the assessment on the Smart Board. 7. The teacher will read through the test with the students to ensure all students understand the directions and requirements. 8. The teacher will answer students' questions about the directions and requirements. a. Specific student questions are addressed as needed at the student's desk. 9. The teacher will remind the students of test taking expectations for the classroom environment. 10. The teacher will distribute the assessments. a. Students are to place assessments face down at the corner of their desks when completed. b. Students are to read silently at their desks until all tests are submitted. c. Resource students will have their assessments collected, reviewed, and given a second opportunity to test in the resource room. 11. The teacher will collect assessments as described above.

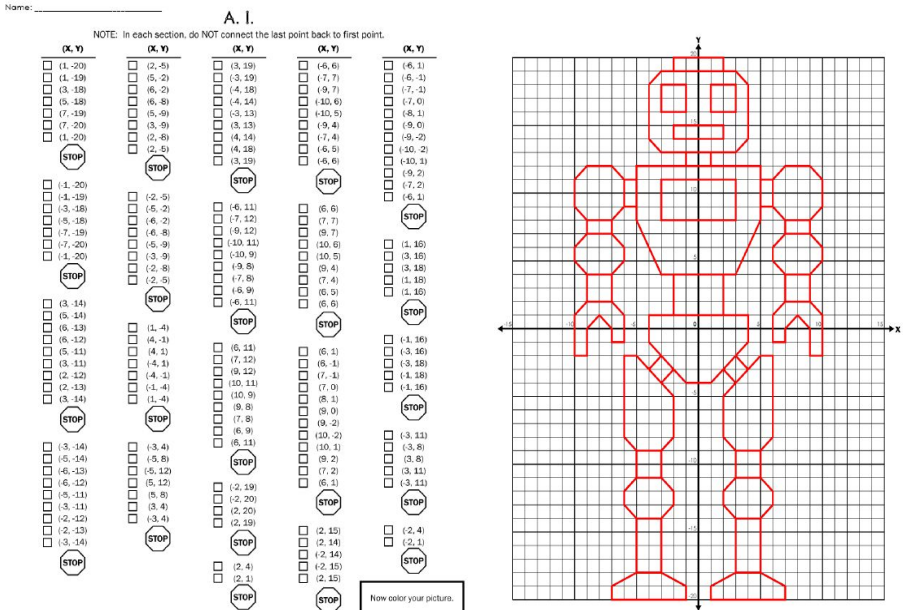
	a. The teacher should double check that the students have answered all questions with reasonableness to what was asked. b. If a student appears to have misunderstood directions, the assessment should be given back with teacher clarification of the expected work to be completed.
Assessment	The assessment will be graded for correctness, accuracy and thoroughness of answers. A rubric is used for short answer responses.

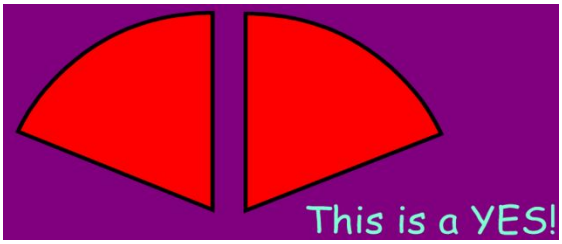
Lesson Nine	
Spiral Review	The students complete a weekly spiral math review called “Math 4 Today” There are four problems each day for Monday through Thursday. The students complete the problems independently and then all problems are examined, reviewed and answered through class discussion. The students lead this activity by agreeing, disagreeing and explaining their thoughts for solving the problems. On Fridays, the students independently complete the back of the worksheet, which contains ten problems that mimic the skills taught throughout the week. This work is graded as weekly classwork.
Whole Group Instruction	
6 Centers for differentiated instruction	
1. Teacher Led Small Group Instruction (4-6 Students)	Small groups were creating using the Winter MAP scores, current grades in mathematics, and behavior skills for interactions with peers. The work in several centers is collaborative so strong social skills are needed to allow for the teacher to facilitate the teacher led small group without needed to heavily monitor the interactions of the other groups, which function independent of the teacher. The order of the groups varies depending on the current mood of the classroom, but all students are met with during each lesson. The centers menu is posted at the front of the classroom, and the students switch with cues from the teacher.
Standard	SC 5-4.2 Compare the angles, side lengths, and perimeters of congruent shapes. SC 5-4.3 Classify shapes as congruent.
Objective	The student will identify congruent polygons. The student will compare angles, side lengths and perimeters of congruent polygons.
Essential Question	What defines to polygons as congruent? What are the congruent parts of congruent shapes?
Resources	7 sets of 16 shapes White board Four different colored expo markers

Procedure	1. The teacher will give each student a bag of 16 shapes. 2. The teacher will instruct each student to sort their shapes using any logic they would like to apply. 3. The teacher will tell the students they must be able to verbally explain their logic and rationale for sorting their shapes in their chosen manner. 4. The student will take turns explaining their rationale for their sorting. a. The students may have chosen to sort by size, while some may have sorted by shape. b. The teacher should echo student's statements to ensure all the students in the group hear each others' responses.   5. The teacher will ask what similarities the students noticed in how each of them sorted the shapes. 6. The teacher will ask what differences the students noticed. 7. The teacher will ask the students to adjust their sorts as necessary to group congruent shapes. 8. The teacher will explain that congruent shapes look exactly the same. Shapes that are different sizes are described as similar. 9. The teacher will set two congruent squares on the white board. 10. The teacher will label the vertices of the square 1 as A, B, C,D and square 2 as E, F, G, H

	11. The teacher will ask the students to name a segment of square A 12. The teacher will name the congruent segment in square 2. 13. The teacher will repeat this process with the next student, but have another student name the congruent segment in square 2. 14. The teacher will then ask the students to name an angle in square 1. 15. The students will then name the congruent angle in square 2. 16. The teacher will emphasize congruency means that all parts of square 1 must be equal to all parts of square 2 for shapes to be congruent. .
Assessment	The teacher will monitor the rationale for sorting individually, and contributions to discussion.
Compass Learning (4 Students)	Differentiated assignments are given to each student to spiral prior skills for review and reinforcement. Six of the students are given lesson on upcoming skills to challenge. Current focus skills assigned are : 1. Adding and subtracting decimals to the hundredths place 2. Multiplying and dividing fractions 3. Division of whole numbers
Standards	Focus 1 CCSS 5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Focus 2 CCSS 5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction Focus 3 CCSS 5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Procedure	1. The students log on to Compass Learning and complete assigned tasks. 2. The students have individual white boards and EXPO markers to aid with computations.
Assessment	The teacher uses the reporting features on Compass Learning to monitor student progress.
Fast Math (4 students)	
Standards	CCSS 5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm. CCSS 5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place

	value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Procedure	1. The students log on to Fast Math and complete facts multiplication or division facts assigned by the program. a. Several students have been switched to division facts to aid in fluency and automaticity.
Assessment	The teacher uses the reporting feature on Fast Math to monitor student progress.
Cooperative Learning (4 – 6 Students)	
Standard	CCSS.Math.Content.5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
Objective	The student will accurately identify and mark a given coordinate pair.
Essential Question	How do you mark coordinate pairs on a coordinate plane?
Resources	*Battleship* board game
Procedure	4. The students play the game *Battleship* in pairs. a. A mini lesson was taught prior to the unit on how to play the game. The students have reached proficiency in independent play. b. The students are seated at desks near the teacher, so she can hear the coordinates being called during play. i. The students are strictly instructed to make sure they call an x coordinate and then a y coordinate, which in the game means a number and a letter in the coordinate pair, i.e. (1, A). ii. If coordinates are called in the wrong order, i.e. (A, 1), their opponent does not have to declare a hit or a miss.
Independent Practice (4 Students)	
Standard	CCSS.Math.Content.5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates.

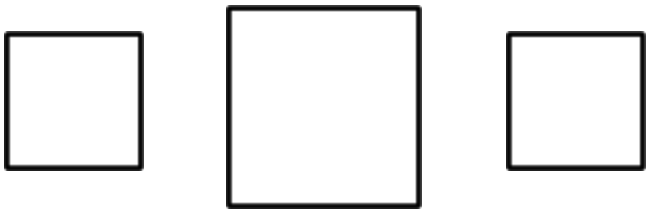
	Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
Objective	The student will accurately plot x and y coordinates on a coordinate grid.
Essential Question	How do you plot coordinates on a coordinate grid?
Resources	Mystery picture plot Rulers
Procedure	2. The student independently plots the listed coordinates, and connects the plotted points using a ruler to create a picture.  Name: _____ A. I. NOTE: In each section, do NOT connect the last point back to first point. (X, Y) (1, -20) (1, -19) (3, -18) (5, -18) (7, -19) (7, -20) (1, -20) STOP (-1, -20) (-1, -19) (-3, -18) (-5, -18) (-7, -19) (-7, -20) (-1, -20) STOP (3, -14) (5, -14) (6, -13) (6, -12) (5, -11) (3, -11) (2, -12) (2, -13) (3, -14) STOP (-3, -14) (-5, -14) (-6, -13) (-6, -12) (-5, -11) (-3, -11) (-2, -12) (-2, -13) (-3, -14) STOP (X, Y) (2, -5) (5, -2) (6, -2) (6, -5) (5, -9) (3, -9) (2, -8) (2, -5) STOP (-2, -5) (-5, -2) (-6, -2) (-6, -8) (-5, -9) (-3, -9) (-2, -8) (-2, -5) STOP (1, -4) (4, -1) (4, 1) (-4, 1) (-4, -1) (-1, -4) (1, -4) STOP (-3, 4) (-5, 8) (-5, 12) (5, 12) (5, 8) (3, 4) (-3, 4) STOP (X, Y) (3, 19) (-3, 19) (-4, 18) (-4, 14) (-3, 13) (3, 13) (4, 14) (4, 18) (3, 19) STOP (-6, 11) (-7, 12) (-9, 12) (-10, 11) (-10, 9) (-9, 8) (-7, 8) (-6, 9) (-6, 11) STOP (6, 11) (7, 12) (9, 12) (10, 11) (10, 9) (9, 8) (7, 8) (6, 9) (6, 11) STOP (-2, 19) (-2, 20) (2, 20) (2, 19) STOP (2, 4) (2, 1) STOP (X, Y) (-6, 6) (-7, 7) (-9, 7) (-10, 6) (-10, 5) (-9, 4) (-7, 4) (-6, 5) (-6, 6) STOP (6, 6) (7, 7) (9, 7) (10, 6) (10, 5) (9, 4) (7, 4) (6, 5) (6, 6) STOP (6, 1) (6, -1) (7, -1) (7, 0) (8, 1) (9, 0) (9, -2) (10, -2) (10, 1) (9, 2) (7, 2) (6, 1) STOP (2, 15) (2, 14) (-2, 14) (-2, 15) (2, 15) STOP (X, Y) (-6, 1) (-6, -1) (-7, -1) (-7, 0) (-8, 1) (-9, 0) (-9, -2) (-10, -2) (-10, 1) (-9, 2) (-7, 2) (-6, 1) STOP (1, 16) (3, 16) (3, 18) (1, 18) (1, 16) STOP (-1, 16) (-3, 16) (-3, 18) (-1, 18) (-1, 16) STOP (-3, 11) (-3, 8) (3, 8) (3, 11) (-3, 11) STOP (-2, 4) (-2, 1) STOP Now color your picture.
SMART Board	
Logic Game	This game is used as a cooperative learning tool and a reward incentive for students working well during small group centers. The students must manipulate the pieces in the game to build structures using polygons to get the shapes into their bins. The students work as individuals and in pairs, learning from the successes and mistakes made.

	
Whole Class Instruction	
Standard	SC 5-4.2 Compare the angles, side lengths, and perimeters of congruent shapes. SC 5-4.3 Classify shapes as congruent.
Objective	The student will identify congruent polygons. The student will compare angles, side lengths and perimeters of congruent polygons.
Essential Questions	What defines to polygons as congruent? What are the congruent parts of congruent shapes?
Resources	SMART Notebook: Congruency Study Jams: Congruent Figures
Procedure	1. The teacher will ask the students to recall the definition of congruent in polygons. a. The students should respond that congruent means same or equal. 2. The teacher will go through a series of slides to show congruent and similar figures. Examples: a. 

b. 

c. 

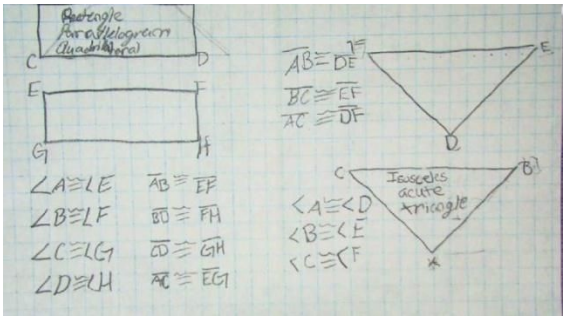
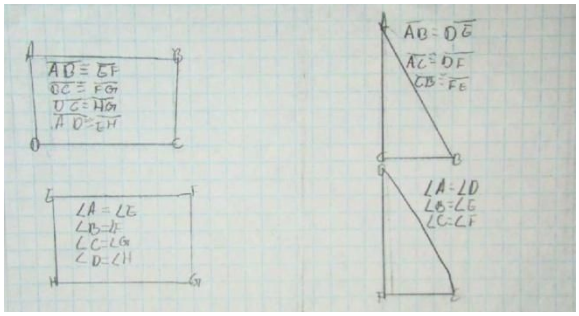
3. The next series of slides, the teacher will ask the students to determine if the shapes are congruent or similar.
    a. The teacher should pull multiple name sticks and allow students to discuss agreement and disagreement.
4. The teacher will distinguish between similar and congruent figures, as congruent means equal in every way. The pictures should be exactly the same.
5. The teacher will draw a trapezoid on the Smart Board.
6. The teacher will label the vertices.
7. The teacher will ask the students to name the line segments for the trapezoid.
8. The teacher will ask the students to name the angles.
9. The teacher will then clone the trapezoid and label the vertices.
10. The teacher will ask the students to name the line segments in trapezoid 2.
11. The teacher will ask the students to name the angles of trapezoid 2.
12. The teacher will then ask the student to drag the congruent parts listed next to each other.
    a. The teacher should pull name sticks and not confirm the correctness of the work until all parts are connected.
    b. The teacher should ask for student agreement and disagreement by a show of hands.
    c. Students that disagree must explain their disagreement and make changes.
    d. This process will continue until agreement is reached.
    e. The teacher will verify accuracy of the answers.
13. This process will be repeated using a rectangle.

	14. The teacher will read aloud the exit ticket.  Dan says all of these polygons are congruent since they are all squares. Rick disagrees and says that only two of the polygons are congruent. Explain which student is right using mathematical language about congruency and polygons. 15. The students will independently answer and submit their exit ticket..
Assessment	The teacher will grade the exit ticket for correctness of answer and use of mathematical vocabulary about congruency.

Lesson Ten	
Spiral Review	The students complete a weekly spiral math review called “Math 4 Today” There are four problems each day for Monday through Thursday. The students complete the problems independently and then all problems are examined, reviewed and answered through class discussion. The students lead this activity by agreeing, disagreeing and explaining their thoughts for solving the problems. On Fridays, the students independently complete the back of the worksheet, which contains ten problems that mimic the skills taught throughout the week. This work is graded as weekly classwork.
Whole Class Instruction	
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.2 Compare the angles, side lengths, and perimeters of congruent shapes. SC 5-4.3 Classify shapes as congruent.
Objective	The student will identify congruent polygons. The student will compare angles, side lengths and perimeters of congruent polygons.
Essential Question	What defines to polygons as congruent? What are the congruent parts of congruent shapes?

Resources	SMART Notebook: Congruency Study Jams: Congruent Figures White boards for each student Expo Marker for each student One sheet of graph paper for each student One ruler for each student
Procedure	1. The teacher will ask a student to recall the definition of congruent for the class. a. The student should answer same or equal. b. The teacher should emphasize same and equal in every way. 2. The teacher will show the Study Jams: Congruent Figures  3. The teacher will have the class helper distribute white boards and expo markers to each student. 4. The teacher will draw a scalene triangle on the board and label the vertices A, B ,C. 5. The teacher will clone the scalene triangle on the board and label the vertices D, E, F. 6. The teacher will ask the students to name the line segment that is congruent to line segment AB. 7. The students will hold their boards up to show their work as the teacher says “One, Two, Three – Show Me.” a. The students should write line segment DE. 8. The teacher will continue this process for line segments BC and AC. 9. The teacher will then ask the students to continue this process with the angles. 10. The teacher will then leave triangle ABC as it is, and move triangle DEF to the bottom of the screen. 11. The teacher will clone triangle ABC and then flip the new triangle to have a mirror reflection. 12. The new triangle will be named triangle GHI. 13. The teacher will ask the students to name the congruent line segment to line segment AB. a. The students will have to adjust for the flipped triangle to name the correct line segment. 14. The students will hold their boards up to show their work as the teacher says “One, Two, Three – Show Me.”

	15. The teacher will go through the process of asking for all the congruent line segments and the congruent angles. 16. The teacher explain that the students will now create their own congruent shapes. 17. The teacher will model creating a shape on the graph paper. a. The teacher will allow a student to select the polygon for her to model. 18. The teacher will use the ruler and graph paper to create the polygon. 19. The teacher will label the vertices of the polygon. 20. The teacher will model recreating the congruent polygon next to the original polygon. 21. The teacher will label the vertices of the second polygon. 22. The teacher will then ask the students to help name the congruent parts. 23. The teacher will list the congruent parts under both polygons. 24. The class helper will distribute graph paper to each student. 25. The teacher will distribute rulers. 26. The teacher will instruct the students to fold their graph paper in half and then again for fourths. 27. The teacher will tell the students to unfold their graph paper. 28. The teacher will tell the students their first congruent polygons will go in ONE of the rectangle. 29. The class as a whole will repeat the modeled process with a rectangle. a. The teacher should circulate after the first rectangle is drawn and ask students to peer peek at their neighbors, and again after the second rectangle is drawn. 30. The students may choose the names of the vertices. a. Students may go alphabetically or choose a word to spell out with the labels. 31. The teacher will circulate as the students list the congruent line segments and angles. 32. The teacher will tell the students to choose 3 more polygons to repeat the process in the other quadrants of their graph paper. 33. The students may share their congruent graph pictures on the ELMO for the class. 34. The teacher will collect their congruent graph pictures for a formative assessment.

	 
Assessment	Teacher monitors student responses The teacher will grade congruent graph pictures for accuracy in creating a congruent polygon and correctness in the naming of congruent sides and angles.

Lesson Eleven	
Spiral Review	The students complete a weekly spiral math review called “Math 4 Today” There are four problems each day for Monday through Thursday. The students complete the problems independently and then all problems are examined, reviewed and answered through class discussion. The students lead this activity by agreeing, disagreeing and explaining their thoughts for solving the problems. On Fridays, the students independently complete the back of the worksheet, which contains ten problems that mimic the skills taught throughout the week. This work is graded as weekly classwork.
Whole Class Instruction	
Standard	CCSS 5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. CCSS 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties. SC 5-4.1 Apply the relationships of quadrilaterals to make logical arguments about their properties. SC 5-4.2 Compare the angles, side lengths, and perimeters of congruent shapes.

	SC 5-4.3 Classify shapes as congruent.
Objective	
Essential Question	
Resources	Classifying Polygons and Congruency Summative Assessment
Procedure	1. The teacher will read through the directions of the assessment using the ELMO and SMART Board. 2. The teacher will answer any student questions about the directions and expectations for the assessment. a. Individual and specific student questions will be answered at the student's desk. 3. The teacher will remind the students of the expectations for the test taking environment. 4. The teacher will instruct students to place the assessment at the corner of their desks to be collected when finished. 5. The students are to read their just right books silently at their desks after their assessments have been completed. 6. The teacher will review the assessments to ensure all questions have been answered with reasonable effort.
Assessment	The teacher will grade the assessment for accuracy and completeness of answers.