5 E Lesson: Cutting Corners

Lesson Objective: Students will cut a polygon into two new shapes and come to understand the meaning of both the nouns (shape names) and the adjectives used to describe polygons by applying them to new and different shapes. They will further solidify this knowledge by analyzing others' posters to see which adjectives are redundant or necessary to understand the definitions of the shapes.

Materials Used:
Copies of polygons on colored paper
Scissors
Tape
Chart Paper
Markers
Post-it notes
The Greedy Triangle book
Blank Paper
Colored Pencils

ENGAGE: ***Connect to Prior Knowledge and Experience, Create Emotionally Safe Learning Environment, Preview New Vocabulary*** **Estimated time: 10 minutes**

Description of Engage: 1) Teacher shows a picture of a right trapezoid and an isosceles right triangle and asks the students to write down the most specific name of each shape. 2) Teacher will create a 2-column class chart with the left labeled Nouns and the right Adjectives. The title will be Polygons. The teacher will elicit the names (nouns) of polygons and record these in the left column. Each time a word is recorded, the teacher asks for the definition. The simplest definitions will be listed; for example, a triangle is just 3 sides (all assume closed, plane figures). The same process is repeated for adjectives.

Teacher's Role	**Teacher Questions**	**Students' Role**
Ask questions Create class chart Elicit, record and refine definitions (see handout for all necessary nouns and adjectives).	What are the names of some polygons? What makes a ____ a _____? Would ____ also be considered a _____? What are some words we can use to describe two different triangles?	Recall names of polygons. Recall names of adjectives to describe triangle or polygons. Share what they think the definition of each noun or adjective is.

EXPLORE: ***Hands-On Learning, Contextualize Language, Use of Scaffolding (Graphic Organizers, Thinking Maps, Cooperative Learning), Use of Multiple Intelligences, Check for Understanding*** **Estimated time: 20 min.**

Description of Explore: Each group will receive multiple copies of 1 polygon, chart paper, tape, markers and scissors. They will each make 1 straight cut through the shape to get two new shapes. They will tape the 2 new shapes on the poster (so it looks like the original shape) and then label the two shapes with a noun and as many adjectives as they think apply. They will continue doing this to the same original shape to get as many different shapes as possible.

Teacher's Role	**Teacher Questions**	**Students' Role**
Explain and model task. Distribute materials. Question groups or individuals. Ensure groups are on task.	Could you get a pentagon with one cut? Could you get an isosceles right triangle? Could you add any other adjectives to that shape? How are these two shapes different?	Cut & paste shapes. Label shapes. Discuss and classify each shape. Discuss the meaning of the adjectives and apply the meaning to new shapes.

	How do you know that shape is an equilateral triangle?	Come to consensus as to which noun is the most precise for that shape.

EXPLAIN: ***Listening, Speaking, Reading, and Writing to Communicate Conceptual Understanding*** **Estimated time: 20 minutes**

Description of Explain: Each group will hang their poster in the classroom. Each group will get post-its and will then rotate to evaluate other groups' posters, using post-its to challenge the group with one of three comments: 1) Is this correct?; 2) Is this necessary?; 3) Could we add ____?. Groups will have 2 minutes at each poster. After 10 minutes, the class will come back together and the teacher will go over all the post-its, asking questions to get the class to see which of the students' statements are correct or incorrect.

Teacher's Role	Teacher Questions	Students' Role
Pass out post-it notes to each group Give directions. Circulate to ensure groups remain on task. Question groups to push or challenge their thinking. Select a few posters to analyze the post-its and question students to come to a consensus.	Are all trapezoids right? Which noun is more specific? Can a triangle be both isosceles and scalene? Can we say something about the sides of the shape? Can we say something about the angles in that shape? Are all _____ (noun) _____ (Adj)? Can you draw a picture of a _____ (adj) _____ noun?	Analyze others' posters. Discuss with group the meaning of the nouns. Discuss the meaning of the adjectives with the group. Draw a shape to demonstrate the need or lack thereof for an adjective. Look for any shapes that could have been made that the group may have missed.

EVALUATE: ***Thinking Maps, Summarize Lesson and Review Vocabulary, Variety of Assessment Tools, Games to Show Understanding*** **Estimated time: 5 minutes**

Description of Evaluate: Part 1 of evaluate is the class discussion in explain. Part 2 is a ticket-out-the-door with the same 2 questions that were asked in the beginning of the lesson. Each student will record their answer and turn it in to the teacher.

Teacher's Role	Teacher Questions	Students' Role
See Explain above for part 1 Pass out ticket out the door.	See Explain above for part 1	See Explain above for part 1 **Complete ticket out the door.**

EXTEND: ***Group Projects, Plays, Murals, Songs, Connections to Real World, Connections to Other Curricular Areas*** **Estimated Time: 15 minutes**

Description of Extend: Teacher reads The Greedy Triangle and asks questions throughout. Then teacher passes out the extension questions.

Teacher's Role	**Teacher Questions**	**Students' Role**
Read story Ask Questions. Present final task. Give 5 minutes for students to work on independently followed by 5 minutes to discuss with a partner. End y using thumbs up/down to have students answer each question and then use random selection to have students explain their thinking.	What type of triangle is this? What is a more specific name for that quadrilateral? Do you think the shape will be content as a quadrilateral? What type of pentagon is this? What shape do you think the pentagon will want to become? Could a _____ (shape) roll?	Listen. Answer questions. Complete the final task- answer extension questions alone, discuss with partner, vote when asked to ands explain thinking when asked to.