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Topic: Shapes - The Greedy Triangle - Using R&R to Teach Mathematics

Grade Level/Subject: 2nd/Mathematics

Objectives (P.A.S.S.): Standard 4.1.b.

Duration: Two 40-minute sessions

Description: Students will listen to The Greedy Triangle by Marilyn Burns and use geoboards to create various polygons. Students will also make shapes out of construction paper to form a "shape garden" bulletin board. The Shape of Things by Dayle Ann Dodds is also an excellent book to use.

Goals:

1. Students will be able to recognize and identify various polygons.
2. Students will make the connection that a polygon's name refers to the number of sides that it has.

Objectives:

1. SWBAT (Students will be able to) recognize the following geometric shapes: triangle, quadrilateral, pentagon, hexagon, nonagon, and decagon.
2. SWBAT relate each shape's name to its number of sides.
3. SWBAT construct the six geometric shapes on a geoboard.
4. SWBAT construct one of the six geometric shapes out of construction paper.

Materials:

- overhead projector
- clear geoboard for the overhead
- geoboards for students
- rubber bands
- pictures of shapes
- The Greedy Triangle by Marilyn Burns
- graph paper
- construction paper
- scissors
- markers

Vocabulary:

1. triangle -- 3-sided polygon
2. quadrilateral -- 4-sided polygon

3. pentagon -- 5-sided polygon
4. hexagon -- 6-sided polygon
5. nonagon -- 9-sided polygon
6. decagon -- 10-sided polygon

Introduction:

Anticipatory Set:

Review what the side of a shape is (the outside edges of a shape). Hold up pictures of a triangle, quadrilateral, pentagon, hexagon, nonagon, and decagon and ask if anyone can identify the shapes. Ask where students may have seen these shapes in their environment (at school, at home, at the store, on the road or sidewalk, etc.). Have all of the students come to the "reading rug" to hear the story, The Greedy Triangle . Instruct the students to listen for the names of the different shapes mentioned in the story.

[**Summary of Story:** A triangle is bored with having only three sides, so he goes to the shape doctor. He is changed into a quadrilateral, pentagon, hexagon, nonagon, and decagon. The book goes through the characteristics of each shape. Finally he decides that being a triangle is the best, because that's what all of his friends are.]

After the story is read, ask students to share the shapes that were mentioned in the book. Have students return to their desks and put everything on the floor so that their desks are clear.

Instructional Process:

Ask, "Do you remember yesterday we talked briefly about how we name shapes? Can anyone tell me what we said?" Explain to students that you name a shape by the number of sides the shape has (a hexagon has 6 sides, a nonagon has 9 sides, etc.). Review the prefixes and their meanings (hex- means 6, pent- means 5, etc.). Distribute one geoboard and a few rubber bands (different colors if available) to each student. (If you don't have enough geoboards for all students, then you can have students work in pairs.) On the overhead geoboard, model how to form each shape. Students should make the same shapes on their geoboards that you are making on the overhead geoboard. Give students 5-10 minutes to experiment making shapes on their geoboards. Have students pair up to discuss and compare the shapes that they made.

Closure:

Discuss, as a group, what the names of the shapes are and how they have gotten their names. Have the students write a short entry in their math journals about naming and identifying geometric shapes. Explain that for the remainder of the period, they will draw and cut out a shape that was mentioned in the story. They will first draw the shape on a piece of graph paper (as large as possible) and then cut out the shape using scissors. Next, each student will trace the shape onto a piece of construction paper and cut out the shape. Then, each student will write the name of the shape in the center of the cut-out. All of the shapes will be placed on a bulletin board to create a "shape garden."

Assessment: When students are using the geoboards, assess the following: Are students following the directions? Do their shapes look the way they are supposed to? Can students identify and name the shapes? For the "shape garden" project, assess the following: Did students name their shapes correctly? Does each shape have the correct number of sides?

Modifications/Accommodations: As students hold up their geoboards to show the shapes they have made, check for any student having trouble and give individual help to those students.

Reflection: The students really enjoy these hands-on activities which give them the opportunity to make the shapes and name the shapes.