

**Fifth Grade Math
Higher Order Thinking (H.O.T.) Lesson 4
Creature Design**

Tuesday, November 13, 2007

Learning Objectives:

The student will be able to –

1. Construct regular and irregular polygons.
2. Create an original creature design following specific criteria.
3. Analyze a peer's creature design for the specified geometric elements.

Language Objectives:

The student will be able to –

1. Provide appropriate definitions for “twice as many”, “half as many”, “at least one”, and “two more than.”
2. Give geometric definitions for regular polygons and irregular polygons.
3. List elements of the triangle (equilateral, scalene, isosceles, obtuse), quadrilateral, pentagon, hexagon and octagon.
4. Discuss the geometric differences between two creature designs.

Materials:

1. Geometry template
2. Ruler
3. Pencil & eraser
4. Colored pencils/markers/crayons
5. Creature design activity sheet
6. Examples of creatures
7. Reflection

Procedures:

1. Math message: refresh different kinds of triangles – also using templates
2. Read student-friendly objectives.
3. Tell students that we have been learning a lot about different kinds of polygons (who can give me a definition of a polygon?). But where do we see these polygons? Talk about how these shapes are everywhere, even in the drawings of creatures – link to Pokemon. (~5 min)
4. Tell students they will be creating their own creature/monster today that uses the geometry we have been talking about!
 - Hand out activity sheet.
 - Ask several students to read what the design must include. Review the key vocabulary words making sure students have sound definitions. Give examples of regular polygons and irregular polygons. Students are not limited to the criteria, but that is the minimum.
 - Explain how the color code works.
 - Tell students they will have **15 minutes** to create their design and color it. We do not care about what the design looks like (be creative!) We are not judging based on your artistic ability. We care that you have all the geometry you are supposed to have.
 - Distribute geometry templates (for regular polygons), coloring materials. (Directions & creating creature ~25 min)

3. Students turn to a neighbor and do the pair analysis on the back of the activity sheet. They should discuss the differences between the two designs. (Why do they look different? Can you envision the design if it was twice as big? Etc.) Monitor pairs work. (~10 min)
4. Have students collect materials and creature designs. Distribute independent reflection sheets. (~7 min)

Closure:

Ask students orally – Think back to that *Walk-a-thon* lesson & math detective activity we did. Is there a relationship (something similar) between that lesson and today's lesson? What is the relationship?

Assessments:

1. Observations (pairs and independent work)
2. Whole-class discussion to review vocabulary
3. Creature design (scored against rubric)
4. Pair analysis sheet

Extensions:

Write a story about the creature you designed with regular and irregular shapes.

As a class, vote on and choose a creature to build as a life-sized model. Each student should have a role building at least one piece of the life-sized creature.

Notes and To do:
write up objectives