

GEOMETRY RIDDLES

Performance Standard 9A.E

Create riddles that include clues to the attributes and/or properties of geometric shapes accordingly:

- *Mathematical knowledge:* Describe geometric shapes using clues pertaining to their attributes and properties.
- *Strategic knowledge:* Use appropriate strategies to identify and communicate the attributes and properties of geometric shapes.
- *Explanation:* Explain completely and clearly what was done and why it was done.

Procedures

1. ***In order to demonstrate and apply geometric concepts involving points, lines, and planes (9A)***, students should experience sufficient learning opportunities to develop the following:
 - Identify, compare, and analyze attributes of two- and three- dimensional shapes and develop vocabulary to describe the attributes.
 - Classify two- and three-dimensional shapes according to their properties.
 - Identify, sketch and build two- and three-dimensional shapes given attribute clues.
2. Provide each student a copy of the “Geometry Riddles” task sheet and the rubric. Have students review and discuss the task to be completed and how the rubric will be used to evaluate it. Each student will create 5 riddles using the following criteria:
 - (1) *Keep a minimum of 5 clues.*
 - (2) *All clues in the riddle must begin with “I” and the appropriate verb (e.g., “I have...” or “I am...”).*
 - (3) *The first clue(s) should be general in nature (e.g., “I am a plane figure.” or “I am not a polygon.”).*
 - (4) *Clues should become more specific so as to narrow the possibilities.*
 - (5) *The last line should say, “What am I?”*

Example: I am a polygon. (This eliminates all solid figures.)
I am not regular. (This eliminates all plane figures with equal sides.)
I have an odd number of sides. (This eliminates quadrilaterals, hexagons, octagons, and decagons.)
I have two right angles. (This eliminates triangles.)
I have half the number of sides of a decagon. (Shows knowledge of another plane figure.)
What am I? (A pentagon that may look something like a house because of the two right angles.)
3. When the students have finished writing their riddles, use your classroom method for putting each student with a partner. Have each pair of students exchange their riddles with one another. Each student should read each of the five riddles and try to solve each one. Each student should then pick one of his/her partner’s riddles and, using a pencil, straightedge, and graph or dot paper, draw a picture of the figure described in that one riddle.
4. Evaluate student work using the rubric and the guide on the rubric to determine the performance level. Look for the use of important attributes, clues going from general to specific, a variety of shapes (plane and solid figures) and sketching what is described.

Examples of Student Work follow

Time Requirements

- One class period

Resources

- Copies of the “Geometry Riddles” task sheet
- Graph paper
- Dot paper
- Straight edges
- Mathematics Rubric

NAME _____ DATE _____

GEOMETRY RIDDLES

Directions: Create five riddles to describe geometric shapes using clues to their attributes and/or properties.

1. Each riddle needs to have at least five clues.
2. Clues must begin with “I” and the appropriate verb (for example, “I have...” or “I am...”).
3. First clue(s) should be general (for example, “I am a plane figure.” or “I am not a polygon.”).
4. Clues should become more specific so as to narrow the possibilities.
5. The last line should say, “What am I?”

RIDDLES	ANSWERS

Geometry Riddle

- ① I am a polygon.
- ② I have only one pair of parallel sides.
- ③ I have no right angles.
- ④ I am flat.
- ⑤ I am a quadrilateral.

What Am I?

