Geometric Match Me

Objectives

- Reason about geometric shapes
- Check, guess, and revise possible solutions
- Use deductive reasoning to find solution
- Name and describe the attributes of three-dimensional shapes
- Identify similarities and differences among three-dimensional shapes

Materials

3-D shapes
Nets of 3-D shapes or paper polygons cut
Shape Cards
Tape

Directions

1. Display three-dimensional models
2. Show a copy of Shape Card 1. Ask students to think which three-dimensional shapes might have a square as a face.
3. Have students share answers (cube, square prism, square pyramid).
4. Continue with other cards if you feel the class needs more examples.
5. Working with a partner, students receive the Geometric Match Me Cards.
6. Students are to think of as many three-dimensional shapes as they can that fit the description on the card. To match the description, each shape on the card must have at least one face of the 3-D shape.
7. Students can use nets of 3-D shapes, paper polygons to tape or commercial materials to build the shapes.

Extension: Students can create cards for one another to solve.

Geometric Match Me

In second grade students distinguish between pyramids and prisms. They also predict 3-D figures by identifying the 2-D shapes in the figure. Students can match the figures by naming the 2-D shapes. They may not know all the names of the 3-D shapes.

The discussion about why 3-D shapes match the descriptions on the cards is critical. Some cards have only one answer and other have more than one answer.

Answers to the cards:

Card 1: square based pyramid, square based prism, cube

Card 2: square based pyramid

Card 3: triangular prism, square based pyramid, triangular based pyramid

Card 4: rectangular prism

Card 5: hexagonal based prism

Card 6: hexagonal based pyramid

Card 7: cylinder

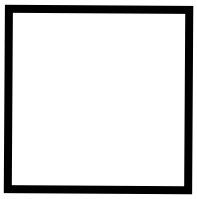
Card 8: triangular based pyramid

Adapted from: Navigating through Problem Solving and Reasoning in Grade 2, National Council of Teacher of Mathematics, 2004.

Geometric Match Me Cards

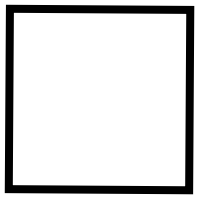
Card 1

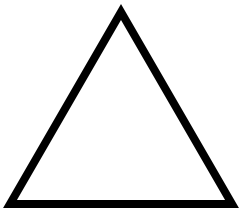
This square is one of the faces of a 3-D shape.



Card 2

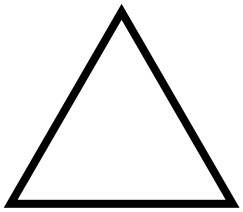
This square is one of the faces of a 3-D shape. The 3-D shape also has 4 triangles.





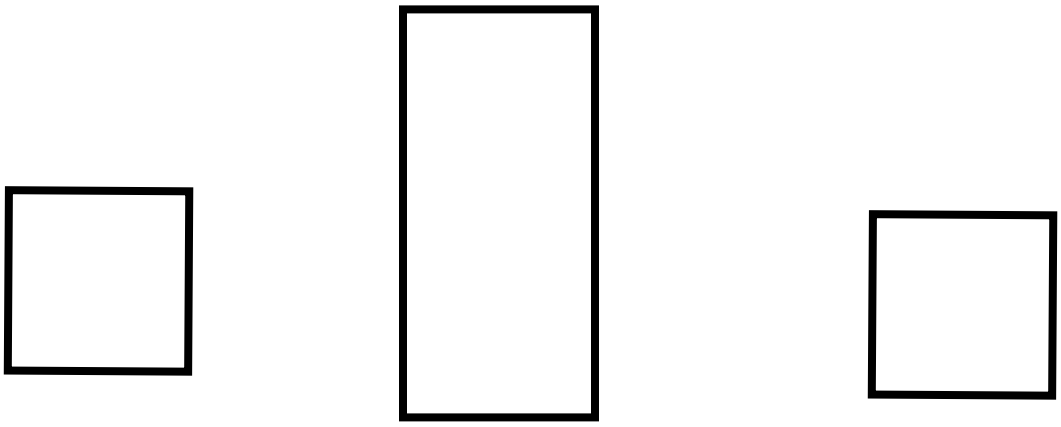
Card 3

The triangle is one of the faces of a 3-D shape.



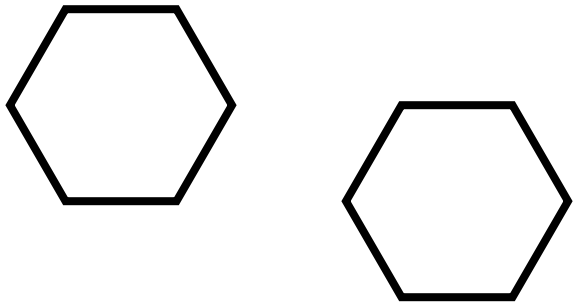
Card 4

These are three of the faces of a 3-D shape.
The shape has six faces altogether.



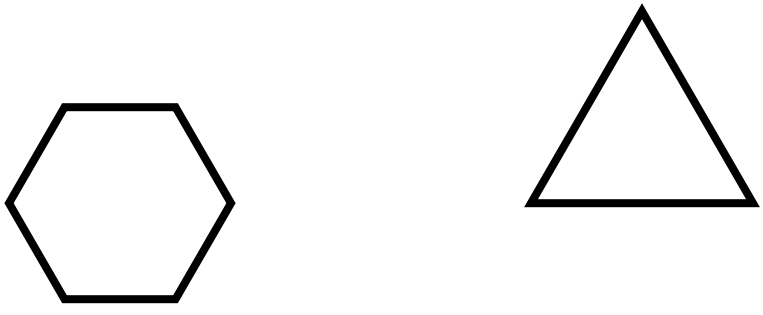
Card 5

These are two of the faces of a 3-D shape. The missing faces are rectangles.



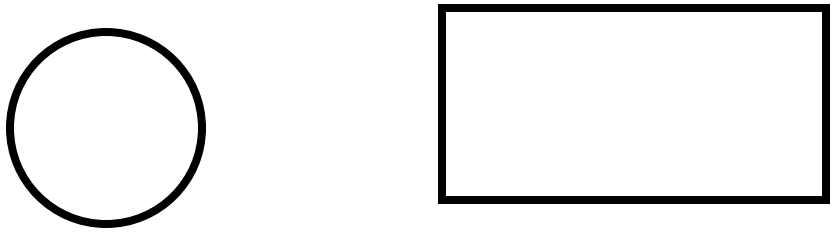
Card 6

The hexagon is one of the faces of a 3-D shape. It also has 6 triangular faces.



Card 7

This 3-D shape has two circles and a rectangle.



Card 8

3 triangles make this 3-D shape.