

Further investigations:

Take turns with your child writing riddles about real-life solid shapes. For example, "I am a rectangular prism. You use me to clean up. What am I?" Answer: a sponge.

Help your child make prisms or other solid shapes by using toothpicks and raisins or marshmallows.

Cut basic shapes from stiff cardboard. Make different types and sizes. Put the shapes in a small bag. Have your child stick her hand into the bag and choose a shape. She should describe as many properties as possible by feeling the shape, and name it if the name is known. Pull the shape out to see if she is correct.

Terminology:

Plane figure: Flat figures that have 2 dimensions (length and width); 2nd grade plane figures include triangles, squares, rectangles, trapezoids, quadrilaterals, pentagons, hexagons, and irregular polygons.

Polygon: A closed shape (no gaps or openings) that lies in a plane and is made up of 3 or more straight sides and angles.

Parallel: Lines that lie in the same plane and are the same distance apart at all points.

Trapezoid: A quadrilateral with two parallel sides.

Quadrilateral: A four-sided polygon.

Pentagon: A five-sided polygon

Hexagon: A six-sided polygon

Regular Polygon: A polygon in which all the sides are equal and all the angles are equal

Irregular Polygon: A polygon that has angles and sides of different sizes.

Solid figure: A three dimensional (3-D) figure (length, width and height); 2nd grade solid figures include prisms, pyramids, cylinders, cones, and spheres.

Sphere: A three-dimensional figure that is perfectly round like a ball.

Apex: The highest point at the top of a shape

Pyramid: A solid shape with a polygon as a base and triangular faces that taper to a point (apex)

Prism: A solid shape that takes its name from the shape of its base

Vertices: The corners of a geometric figure. The singular form of vertices is

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Plane and Solid Figures

Students will:

- Further develop understandings of basic geometric figures
- Identify and describe plane and solid figures based on geometric properties
- Investigate what happens when geometric figures are combined or cut apart
- Look for and recognize geometry in the real world

Second Grade 4 of 7

Classroom Cases:

1. Explore the 3D shapes below. Write the name of each solid shape. Record on the chart how many faces, vertices and edges it has. After the chart is completed, write a riddle for each of the solid shapes.



Case Closed - Evidence:

Solid shape	Shape name	# of faces (A face is a flat surface)	# of vertices (A vertex is where three or more faces meet.)	# of edges (An edge is where two faces meet.)
	Rectangular prism	6	8	12
	Cube	6	8	12
	Cone	1	0 The point on a cone is the apex	1 curved edge
	Square pyramid	5	5	8

My number of faces is 12 minus 6. I have 2 more vertices than faces. All my edges are equal in length. Can you guess my name? (Answer: cube)

I have one point called an apex or vertex. My face is round and sometimes you may say I am good to eat. What am I? (Answer: cone)

2. Place a deck of geometric shape cards face down on the table. The first player draws a card and describes the shape. The first child to identify the shape correctly takes the card. Continue until all the cards have been drawn.

Case Closed - Evidence:

Sam: This shape has four sides and four vertices. All the sides are the same size.

Karen: I think the shape is a square. Karen is correct, so she takes the card.

Book'em:

Listen to a Shape by Marcia Brown

Circles, Triangles, and Squares by Tana Hoban

Color Zoo by Lois Ehlert

The Greedy Triangle by Marilyn Burns

Three Pigs, One Wolf, and Seven Shapes by Grace Maccaroni

Shapes in Nature by Judy Feldman

The Village of Round and Square Houses by Ann Grifalconi