

Flat or Solid?

Sort figures by whether they are flat or take up space.

4.MG.6.c “Compare and contrast plane and solid figures (limited to circles, squares, triangles, rectangles, spheres, cubes, square pyramids, and rectangular prisms) according to their characteristics (number of sides, angles, vertices, edges...)”

NAME _____

DATE _____

PLANE FIGURE

Plane figures are flat. They have length and width, but no thickness.

A flat letter L drawn on paper is a plane figure.

SOLID FIGURE

Solid figures take up space. They have length, width, and height.

A ball of modeling clay is a solid figure.

1 SORT _____ 8 items

Circle PLANE or SOLID for each figure, then choose two figures and explain how their characteristics show that they are plane or solid figures.

1. circle

PLANE

SOLID

2. rectangle

PLANE

SOLID

3. cube

PLANE

SOLID

4. triangle

PLANE

SOLID

5. sphere

PLANE

SOLID

6. square pyramid

PLANE

SOLID

7. rectangular prism

PLANE

SOLID

8. square

PLANE

SOLID

2 PROVE IT Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ HOW I KNEW _____

ITEM # _____ HOW I KNEW _____

3 MAKE YOUR OWN One of each

Write one new example of a plane figure and one new example of a solid figure.

PLANE _____

SOLID _____

CHALLENGE

Choose one solid figure from Part 1. Name it, then tell the number and shape of its faces and the number of its edges and vertices.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	circle	PLANE	A circle is flat and has no thickness.
2	rectangle	PLANE	A rectangle is a flat plane figure with 4 sides and 4 vertices.
3	cube	SOLID	A cube takes up space and has 6 square faces.
4	triangle	PLANE	A triangle is flat and has 3 sides and 3 vertices.
5	sphere	SOLID	A sphere takes up space and has one curved surface.
6	square pyramid	SOLID	A square pyramid takes up space and has flat faces.
7	rectangular prism	SOLID	A rectangular prism takes up space and has 6 rectangular faces.
8	square	PLANE	A square is a flat plane figure with 4 equal sides and 4 vertices.

PART 2 • PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 • MAKE YOUR OWN (SAMPLE ANSWERS)

- **PLANE:** a drawing of a triangle
- **SOLID:** a cube-shaped toy block

Challenge: A square pyramid has 5 faces, 1 square face and 4 triangle faces. It has 8 edges and 5 vertices.

For Part 2, accept explanations that identify a plane figure as flat or a solid figure as taking up space. Students may also use correct details about faces, edges, vertices, angles, or sides.