

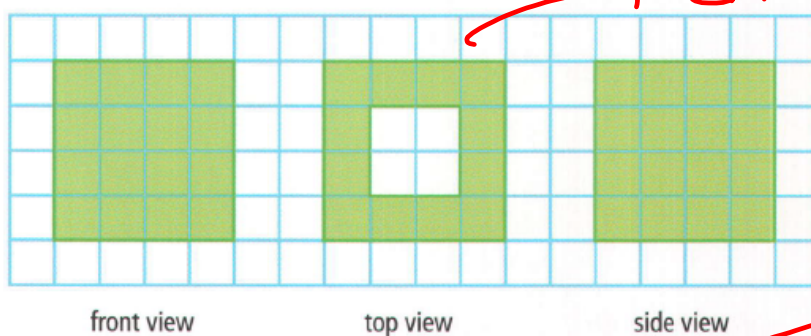
Recognise and Sketch 3D Figures

Brian is babysitting his cousins Allison and Eric. The children are building a fort with large plastic blocks. They decide to make each wall 4 blocks long, 4 blocks high, and 1 block thick. How many blocks do they need to build the fort? Children learn much about our three-dimensional world by playing like this.



How can you distinguish three-dimensional figures from views?

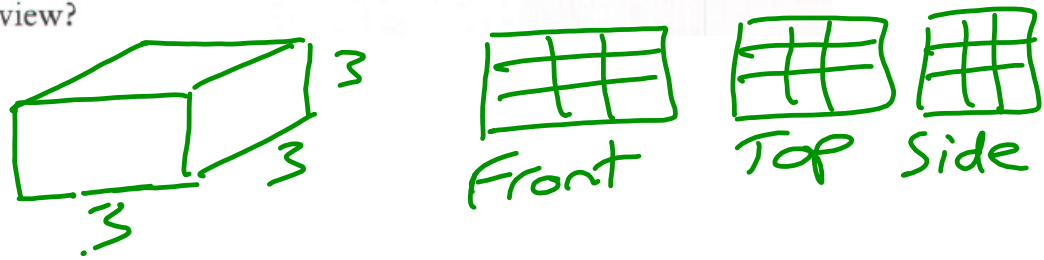
- After the children finish their fort, Brian draws a front view, top view, and side view.



Which view(s) tell you the height of the fort walls? Which view(s) tell you the width and the length of the fort?

2. **Reflect** Provide examples to illustrate your answers to the following.

a) Can a three-dimensional figure have the same front view, top view, and side view?

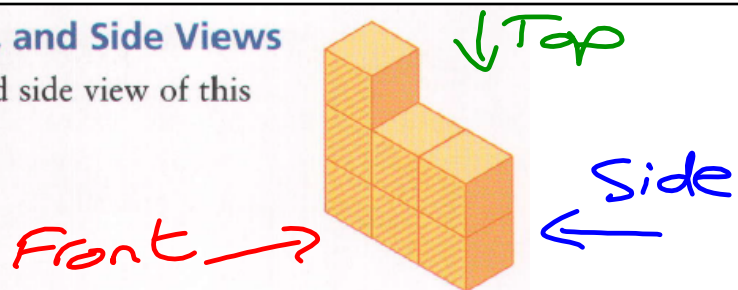


b) Can two different three-dimensional figures have the same front view? Can they also have the same top view? side view?

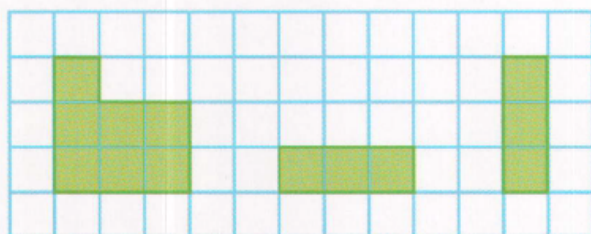
Same front → Yes
 Also same top → Yes
 But NOT all three.

Example 1: Draw Front, Top, and Side Views

Draw the front view, top view, and side view of this three-dimensional figure.



Solution



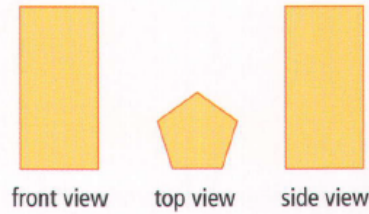
front view

top view

side view

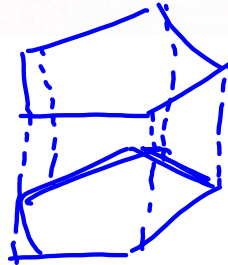
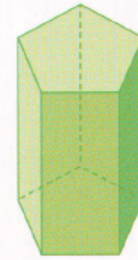
Example 2: Identify Geometric Figures From Views

Identify and sketch the **polyhedron** with these three views.

**Solution**

From the front view and the side view, this might be any prism, or even a cylinder.

The top view reveals that it is a prism with pentagonal bases. The three views together indicate a pentagonal prism.

**Prisms vs Pyramids**

Prisms have the same "base" shape all the way through the prism.

Pyramids will have faces that meet at a point.

Key Ideas

- A three-dimensional object can be represented by its front view, top view, and side view.
- Given the front view, top view, and side view, you can identify simple three-dimensional figures.

polyhedron

- a three-dimensional figure with faces that are polygons
- plural is polyhedra

Page 246 #s 3 - 15