Unit 1, Lesson 1

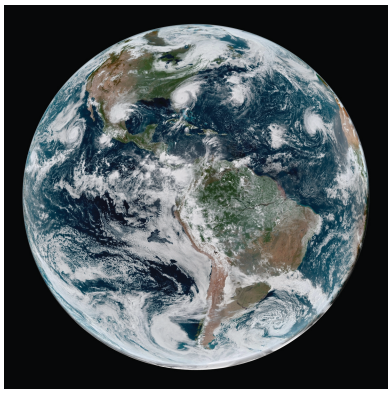
Solids

Let's explore three-dimensional solids.

1.1 A World of Shapes

Choose at least two images. How are the objects in them similar? How are they different?













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1.2 Card Sort: Shape Sorting

Your teacher will give you a set of cards. Each card contains a shape.

1. Sort the cards into categories of your choosing. Be prepared to describe your categories. Pause here for a class discussion.

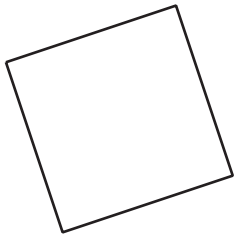
2. Sort the cards into new categories in a different way. Be prepared to describe your new categories.

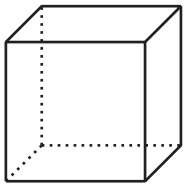
Are you ready for more?

If the cylinder on Card A has a radius of 5 centimeters and a height of 8 centimeters, what is the volume? If the cone on Card H has the same height and volume, what is its radius?

Lesson 1 Summary

Two-dimensional figures and three-dimensional solids share some features, but they also have differences. The similarities and differences between two-dimensional figures and three-dimensional solids can be used to describe three-dimensional solids in terms of the shapes of their faces and cross-sections, their edges, which can be curved or straight, and their vertices, which are pointed.





For example, both a square and a cube have a square component, as the base and faces of a cube are squares. However, the square is a flat, two-dimensional figure measured by area, while a cube is a three-dimensional solid that has surface area and volume. In a square, edges are the sides, and vertices are where the two sides meet. In a cube, edges are where two faces meet, and vertices are where three faces meet. A square has 4 straight edges and 4 vertices, while a cube has 12 straight edges and 8 vertices. Furthermore, a cube can be sliced to reveal two-dimensional cross-sections, which could take the shape of a square or several other shapes.