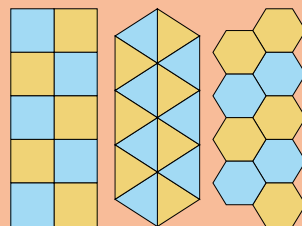


A hexagon is a polygon. It has 6 straight sides.

Honeycomb hexagons fit together with no gaps or overlaps. They form a pattern of shapes. Patterns like this are called **tessellations**.

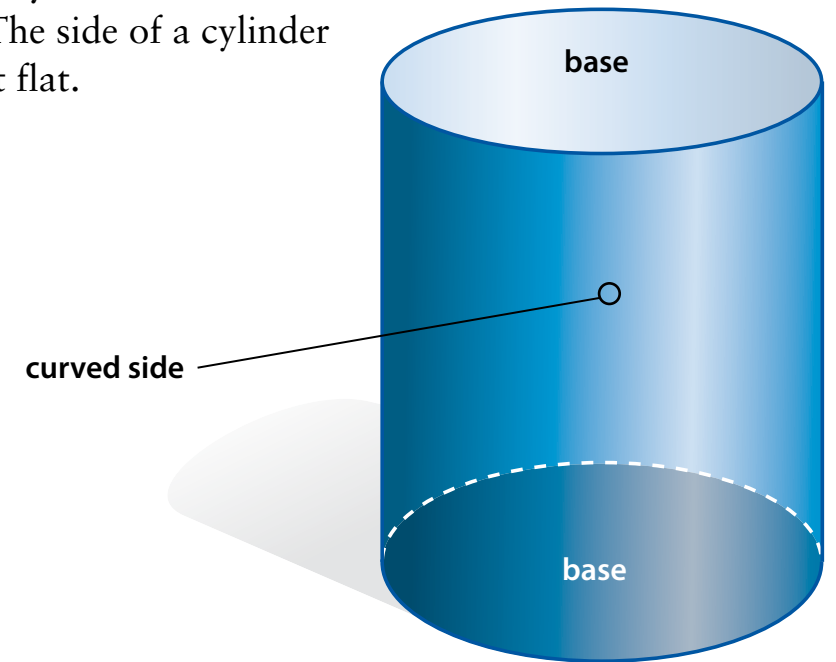
### Perfect Tessellations

Only 3 shapes make perfect tessellations on their own. They are squares, equilateral triangles, and regular hexagons.



# A Closer Look at Cylinders

Look at this 3-D shape. It is a cylinder. This cylinder has circles as its bases. The side of a cylinder is curved, not flat.



## LET'S EXPLORE MATH

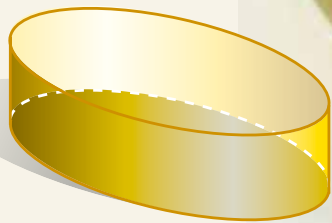
Look at the cylinder above.

- a. How many bases does the cylinder have?
- b. What 2-D shape makes up the bases of the cylinder?
- c. How many vertices does the cylinder have?

## Other Cylinders

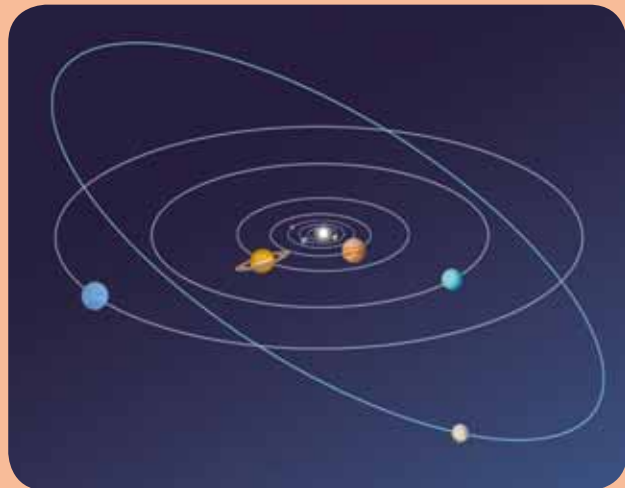
When we think of cylinders, we often think of circular cylinders. But there are other kinds of cylinders. This is an **elliptical** (ih-LIP-tuh-kuhl) cylinder.

An ellipse is not a perfect circle. An elliptical cylinder does not have perfect circles as its bases.



## Ellipses in Space

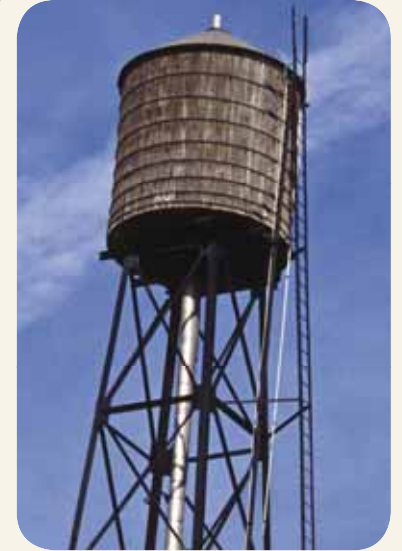
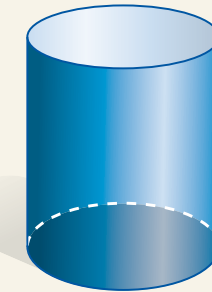
In space, planets and other objects **orbit** the sun. These orbits are elliptical in shape.



## Cylinders in Architecture

### Water Towers

Some water towers are in the shape of cylinders. They are built high off the ground. They can hold the water for whole **communities** (kuh-MYOO-nuh-teez).



### Grain Silos

These huge containers are called **silos** (SY-lows). They usually hold grain. A silo is a cylinder. It has 2 circles for bases and 1 curved side. A silo can hold thousands of pounds of grain.