

Length, Area, Volume, and Dimension

Let's revisit the ideas of length, area, and volume and see how they are different.

Length describes the size of something that is one-dimensional.

Area or surface area describes the size of something that is two-dimensional.

Volume describes the size of something that is three-dimensional.

Examples of things that are one-dimensional, two-dimensional, and three-dimensional:

one-dim: line segment, edge of circle, equator, where walls meet in the corner of a room

two-dim: disk, interior of square, rug, surface of the earth

three-dim: interior of a sphere, cube, etc.

Perimeter measures the length around the edge of an object and is a one-dim measurement.

When we measure area or surface area of an object, we are answering questions such as

How many one ft by one ft squares do we need to cover this object?

When we measure the volume of an object, we are answering questions such as

How many cups of water do we need to fill this object?

How many 1cm by 1cm by 1cm cubes do we need to fill this object?