Introduction to volume

Volume is a measure of the space taken up by a solid object. We measure volume in cubic units, for example cubic centimetres (cm³) or cubic metres (m³). The imperial system uses different units, for example cubic feet (ft³).

A solid like a cube or a cuboid is three-dimensional (3D). That means that you need three measurements in order to work out its volume: length, width and height. Sometimes height is called depth or thickness.

A unit cube has six square faces, and all three dimensions are the same, 1 cm. The volume of the cube is 1 cubic centimetre (1 cm³).

In simple cases you can find the volume of an object by counting the number of unit cubes it contains.

Each of the following diagrams represents a shape made from unit cubes.

Volume 5 cm³

Volume 9 cm³

Volume 8 cm³

Volume and capacity are not quite the same thing. Capacity is the amount of liquid a solid can contain.

In the metric system, capacity is usually measured in litres. The imperial system uses gallons.

Remember: 1000 cm³ = 1000 millilitres = 1 litre.