

Angles and properties of shape

We will explore right angles which links to the concepts of parallel, perpendicular, vertical and horizontal lines. Then compare angle properties of 2D shapes. Vertical and horizontal lines of symmetry will also be explored and, finally, describe and construct 3D shapes.

Key Vocabulary



Angles

There are three different types of angles to know

An acute angle

An acute angle ("acute" meaning "small") is an angle smaller than a right angle. The range of an acute angle is between 0 and 90 degrees.

A right angle

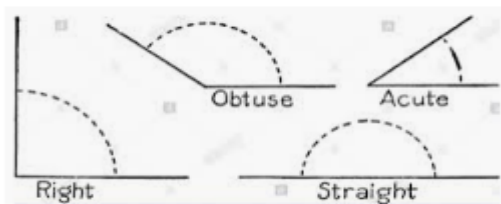
A right angle is an angle of exactly 90° , corresponding to a quarter turn.

Obtuse angle

Obtuse angles can be from 90 degrees to 180 degrees.

Angles are measured in degrees. The symbol is $^\circ$

Angles



<https://www.bbc.co.uk/bitesize/topics/zb6tyrd/articles/zg68k7h>

BBCbitesize – angles

<https://www.bbc.co.uk/bitesize/topics/zvmxsbk/articles/zggsfrd>

BBCbitesize – triangles

Parallel, Perpendicular, Horizontal and Vertical

Parallel lines are always the same distance apart for their entire length and **NEVER** meet. Perpendicular lines cross each other at right angles. If two lines eventually meet, but not at a right angle they are **NEITHER** parallel nor perpendicular.

Horizontal lines follow the lines of the horizon and are drawn left to right/right to left.

Vertical lines are drawn north to south.

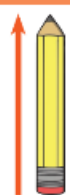
<https://www.bbc.co.uk/bitesize/topics/zb6tyrd/articles/zp327hv>

Lines – BBC Bitesize

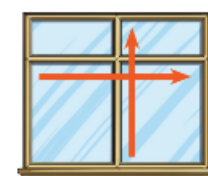
horizontal



vertical



perpendicular

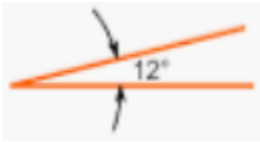


parallel



<https://www.bbc.co.uk/bitesize/topics/zrhp34j/articles/z8t72p3> BBCbitesize – Symmetry

Compare angles:



12° is an acute angle, it is less than 90° (a right angle).



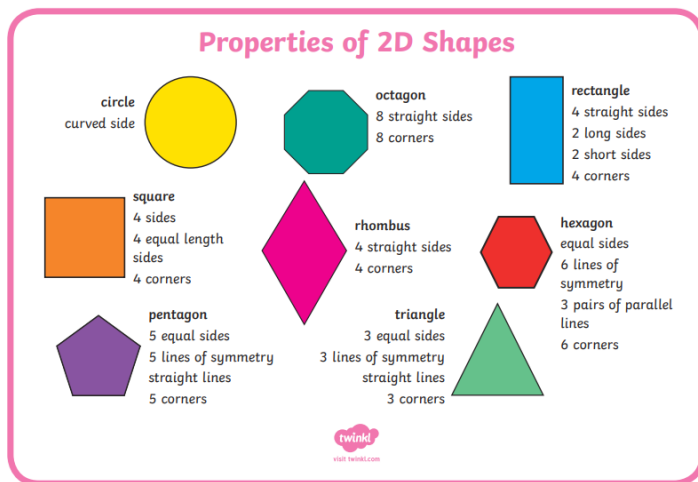
116° is an obtuse angle, it is more than 90° (a right angle).

Challenge: Can you work out the difference between two angles?

$96^\circ - 12^\circ = 84^\circ$ This reduces an obtuse angle to an acute angle.

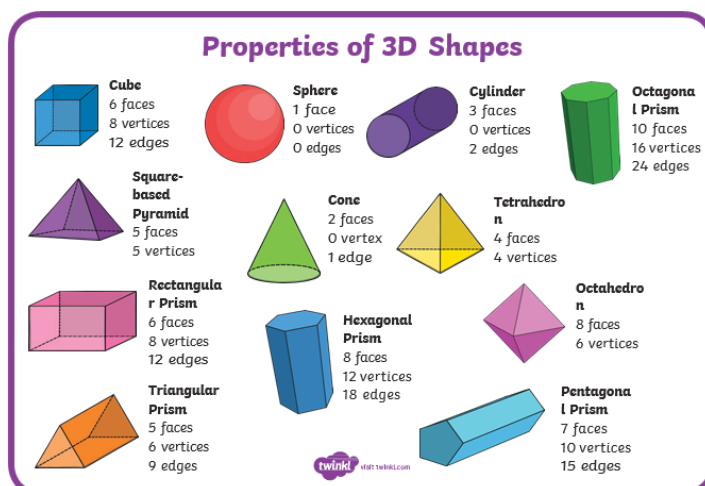
SHAPE: <https://www.bbc.co.uk/bitesize/topics/zjv39j6/articles/ztpwdmn> - 2D shape

<https://www.bbc.co.uk/bitesize/topics/zt7xk2p/articles/z247tv4> - 3D shape nets



2D Vocabulary:

Corner, Side, curved, straight



3D Vocabulary:

Faces: flat or curved surfaces.

Vertex: corner of a 3D shape (Plural of vertex is **vertices**).

Edge: where two faces meet.

Learn to say and spell this maths vocabulary:

angle, right angle, obtuse, acute, parallel, perpendicular, vertical, horizontal, triangle, vertices, edge, face.