



Year:	5	Unit:	Properties of 3D Shape
What will I learn this year?			

Key Vocabulary	Regular and Irregular Polygons	Properties of 3D Shapes																																																																														
angle	<table><tr><th>Regular</th><th>Irregular</th></tr><tr><td></td><td></td></tr></table> A polygon is any two-dimensional shape formed with straight lines. In a regular polygon, all the sides and angles are equal. In an irregular polygon, the sides and angles are not equal.	Regular	Irregular			<table><tr><th rowspan="2">Name</th><th colspan="2">Surfaces</th><th colspan="2">Edges</th><th rowspan="2">Vertices</th><th rowspan="2">Picture</th></tr><tr><th>Flat</th><th>Curved</th><th>Flat</th><th>Curved</th></tr><tr><td>cube</td><td>6</td><td>0</td><td>12</td><td>0</td><td>8</td><td></td></tr><tr><td>cuboid</td><td>6</td><td>0</td><td>12</td><td>0</td><td>8</td><td></td></tr><tr><td>square-based pyramid</td><td>5</td><td>0</td><td>8</td><td>0</td><td>5</td><td></td></tr><tr><td>tetrahedron</td><td>4</td><td>0</td><td>6</td><td>0</td><td>4</td><td></td></tr><tr><td>triangular prism</td><td>5</td><td>0</td><td>9</td><td>0</td><td>6</td><td></td></tr><tr><td>pentagonal prism</td><td>7</td><td>0</td><td>15</td><td>0</td><td>10</td><td></td></tr><tr><td>hexagonal prism</td><td>8</td><td>0</td><td>18</td><td>0</td><td>12</td><td></td></tr><tr><td>octagonal prism</td><td>10</td><td>0</td><td>24</td><td>0</td><td>16</td><td></td></tr><tr><td>octahedron</td><td>8</td><td>0</td><td>12</td><td>0</td><td>6</td><td></td></tr></table>	Name	Surfaces		Edges		Vertices	Picture	Flat	Curved	Flat	Curved	cube	6	0	12	0	8		cuboid	6	0	12	0	8		square-based pyramid	5	0	8	0	5		tetrahedron	4	0	6	0	4		triangular prism	5	0	9	0	6		pentagonal prism	7	0	15	0	10		hexagonal prism	8	0	18	0	12		octagonal prism	10	0	24	0	16		octahedron	8	0	12	0	6	
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Representations	
Cube models can be drawn as 2D representations using different elevations.	A shape net is a 2D drawing of an unfolded 3D shape. When you are drawing or reasoning about shape nets, think carefully about where the edges of the faces meet.

Shape net of a tetrahedron.

A cone has an apex. This is because a vertex is the point where two straight edges meet and a cone has no straight edges.

Identifying Angles

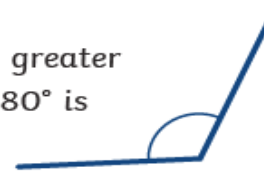
Acute Angles

Any angle that measures less than 90° is called an **acute** angle.



Obtuse Angles

Any angle that measures greater than 90° and less than 180° is called an **obtuse** angle.

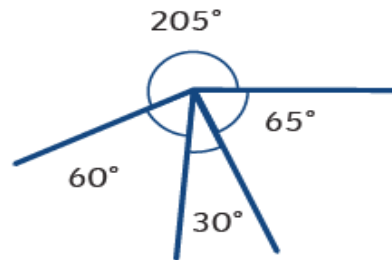


Reflex Angles

Any angle that measures greater than 180° is called a **reflex** angle.

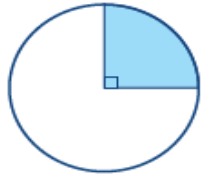


Angles on a straight line always total 180° .

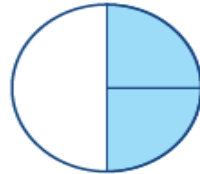


Angles around a point always total 360° .

Multiples of 90° can be used as descriptions of a turn.



$\frac{1}{4}$ turn - 90°



$\frac{1}{2}$ turn - 180°



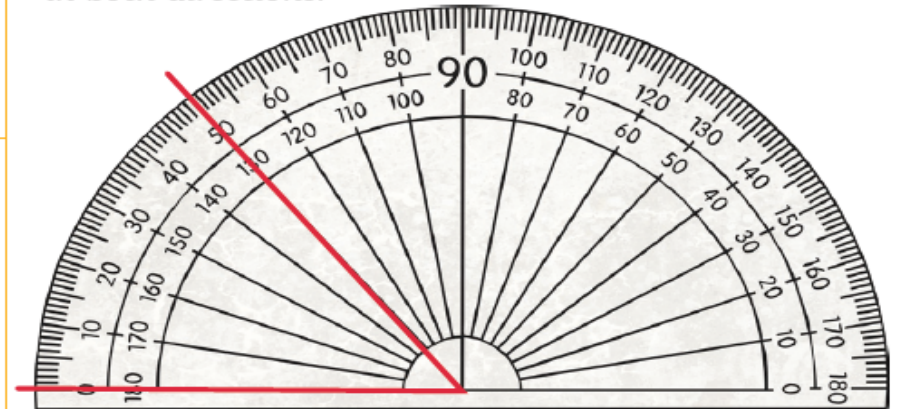
$\frac{3}{4}$ turn - 270°



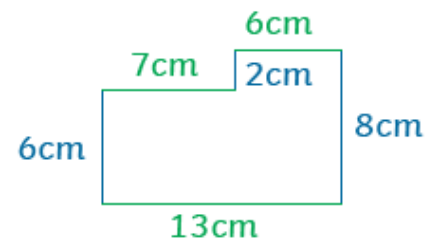
1 turn - 360°

Measuring and Drawing Angles

To measure angles, we use a protractor. Look carefully at how the numbers on the scale count from 0° to 180° in both directions.



Using Properties of Rectangles



$$6\text{cm} + 2\text{cm} = 8\text{cm}$$

$$7\text{cm} + 6\text{cm} = 13\text{cm}$$

