

Shapes and Their Properties Lapbook

How to Make Your Lapbook

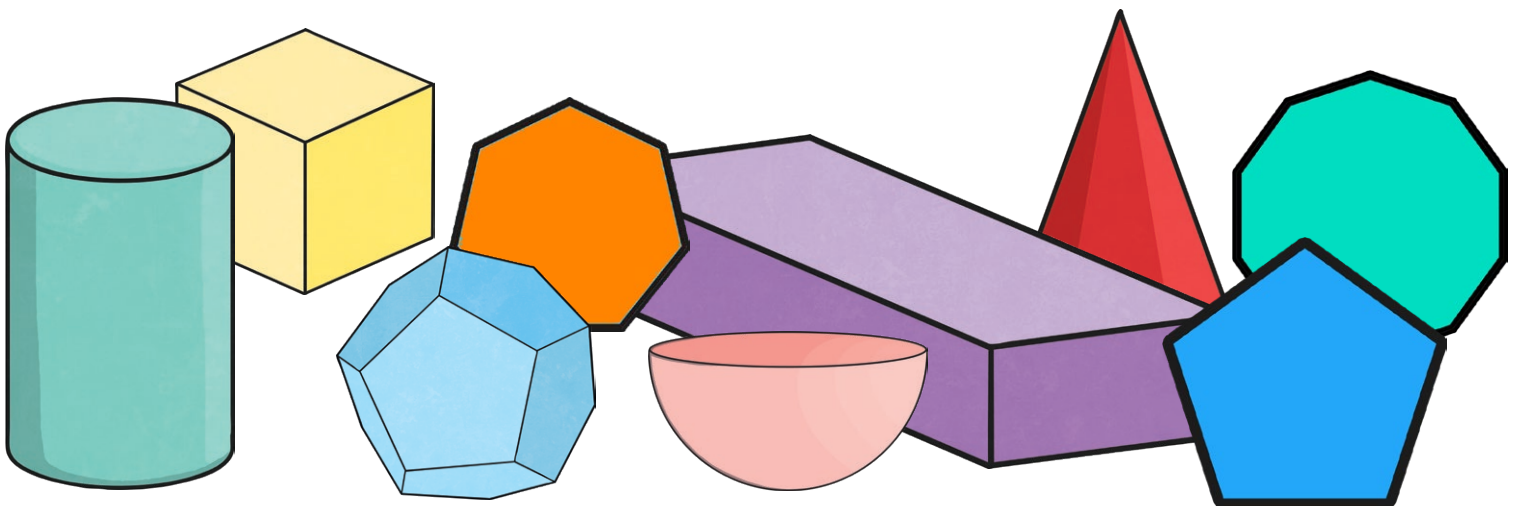
Lapbooks

Lapbooks are a great way to showcase your learning. You can be creative in how you use these resources or simply follow these instructions to make a fun lapbook all about shapes.

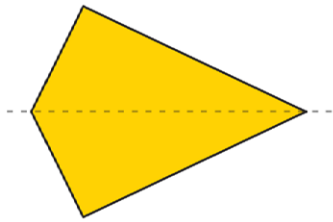
1. Find a large piece of cardboard to use as the base of your lapbook. Opened out A4 document wallets or cereal packets work well. Fold the cardboard so that the edges meet in the middle. If necessary, add additional pieces of cardboard to extend your lapbook.
2. Choose which of the printables you are going to use. Each one will have guidelines on how to construct and display it. Stick them into your lapbook.
3. Display your lapbook or keep it somewhere safe. Use it to revise all the key ideas in your shape topic. If you learn new facts about shapes, you can add them to your lapbook. You can find blank templates for using in the on Twinkl.

2D and 3D Shapes

1. Cut out the pockets and stick them into your lapbook. Only glue the edges of the pockets as you need to be able to slide the cards into them.
2. Cut out the sets of cards and sort them into the correct pockets.

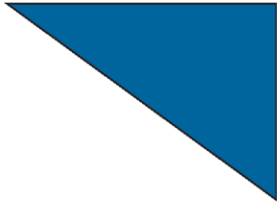


Kite



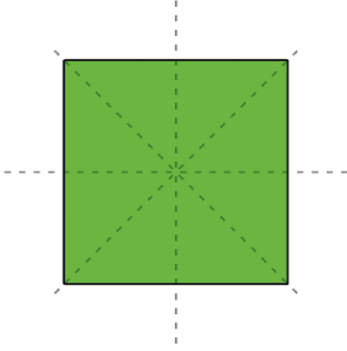
Sides	4
Vertices	4
Angles	add to 360°
Symmetry	1 line

Right-Angled Triangle



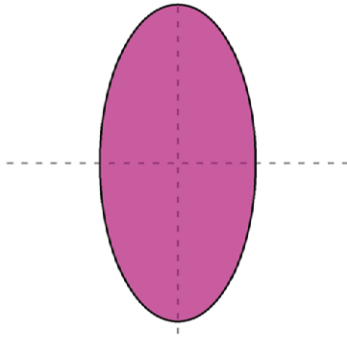
Sides	3
Vertices	3
Angles	add to 180°
Symmetry	sometimes 1 line

Square



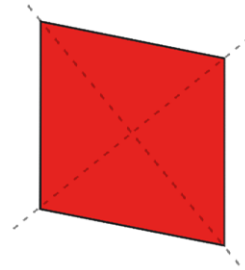
Sides	4
Vertices	4
Angles	add to 360°
Symmetry	4 lines

Oval



Sides	1
Vertices	0
Symmetry	2 lines

Rhombus



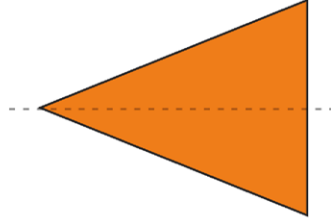
Sides	4
Vertices	4
Angles	add to 360°
Symmetry	2 lines

Parallelogram



Sides	4
Vertices	4
Angles	add to 360°
Symmetry	0 lines

Isosceles Triangle



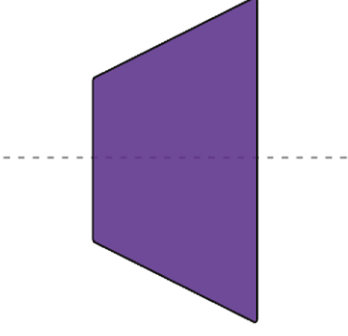
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Vertices	3
Angles	add to 180°
Symmetry	1 line

Scalene Triangle



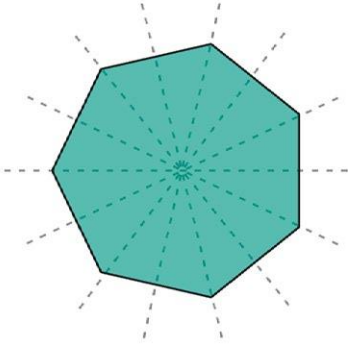
Sides	3
Vertices	3
Angles	add to 180°
Symmetry	0 lines

Trapezium



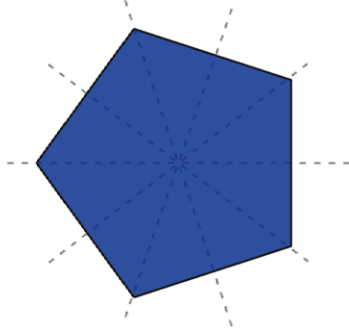
Sides	4
Vertices	4
Angles	add to 360°
Symmetry	sometimes 1 line

Regular Heptagon



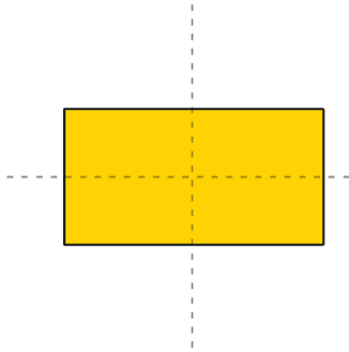
Sides	7
Vertices	7
Angles	add to 900°
Symmetry	7 lines

Regular Pentagon



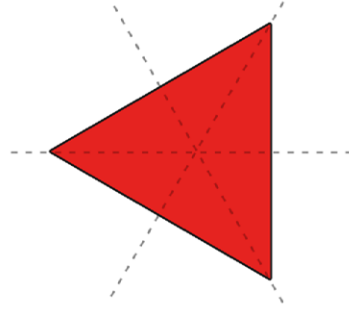
Sides	5
Vertices	5
Angles	add to 540°
Symmetry	5 lines

Rectangle



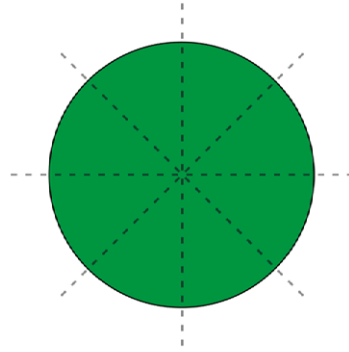
Sides	4
Vertices	4
Angles	add to 360°
Symmetry	2 lines

Equilateral Triangle



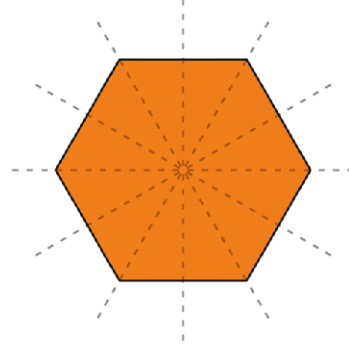
Sides	3
Vertices	3
Angles	add to 180°
Symmetry	3 lines

Circle



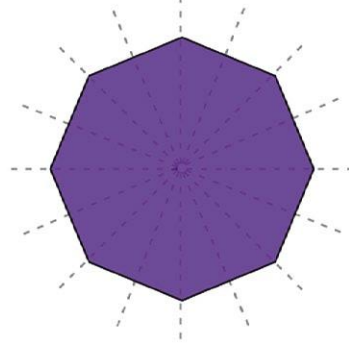
Sides	1
Vertices	0
Symmetry	infinite

Regular Hexagon



Sides	6
Vertices	6
Angles	add to 720°
Symmetry	6 lines

Regular Octagon



Sides	8
Vertices	8
Angles	add to 1080°
Symmetry	8 lines



Glossary

Glue the sheet with the definitions into your lapbook. Then take the sheet with the shape names and cut along the solid lines up to the margin. Glue down the margin only so the flaps lift up individually to reveal the definitions.

Glossary

Face

Any flat or curved surface of a 3D shape.

Edge

On 2D shapes, edges are the lines between each vertex. On 3D shapes, they're the lines that separate each face.

Vertex

Vertex (plural: vertices): The vertices of 2D shapes are angular corners where two or more lines meet. The vertices in 3D shapes are angular corners where edges meet between faces.

Angle

An angle is the space between two intersecting lines. It is measured in degrees. An angle is also a measurement of turn.

Symmetry

Something is symmetrical when it has two matching halves. You can check for symmetry in a shape by drawing a mirror line down the middle and seeing if both halves are identical.

Net

The 'net' of a shape (also called a geometry net) is a term used to describe what a 3D shape would look like if it was opened out and laid flat.

Polygon

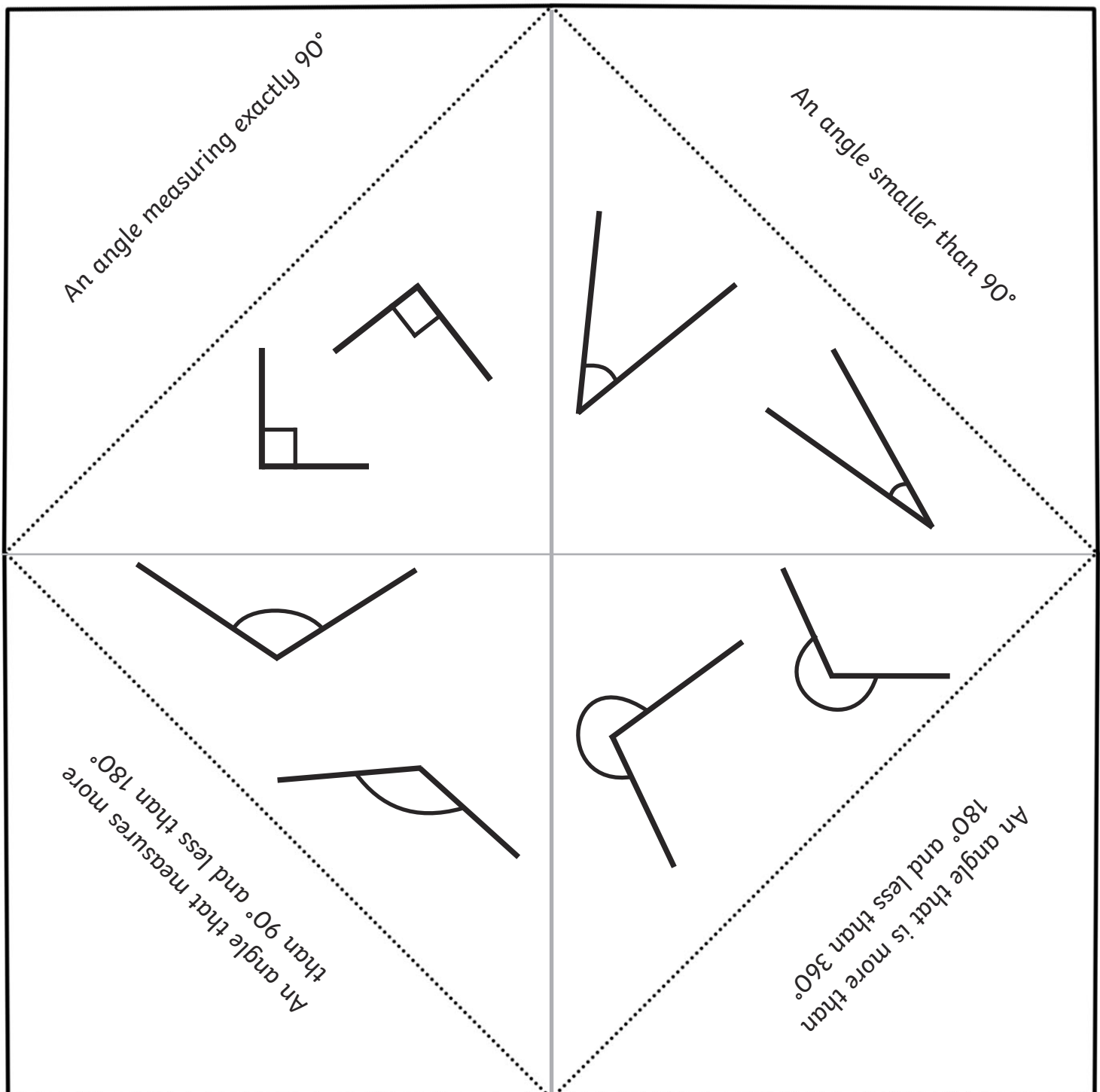
A polygon is a flat 2D shape with straight sides that are fully closed. The sides must be straight and not curved.

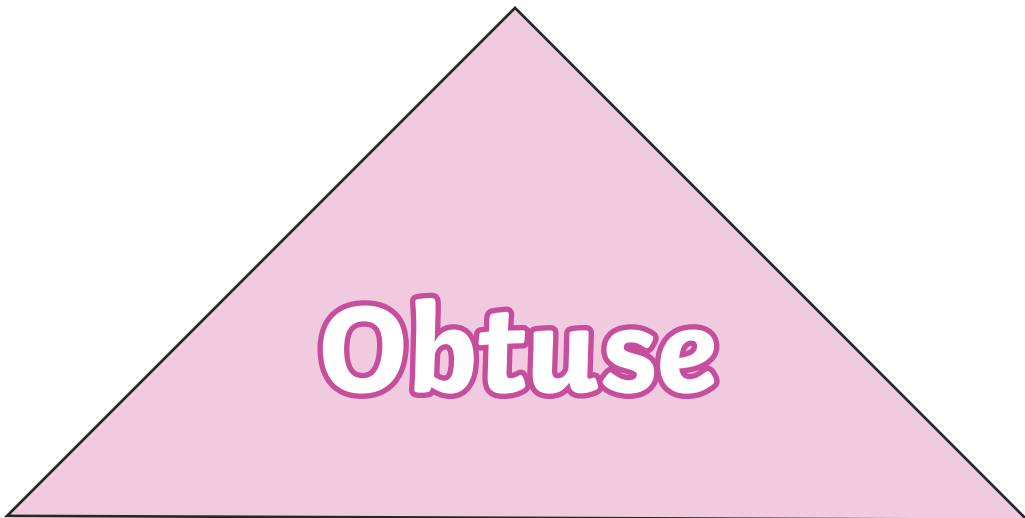
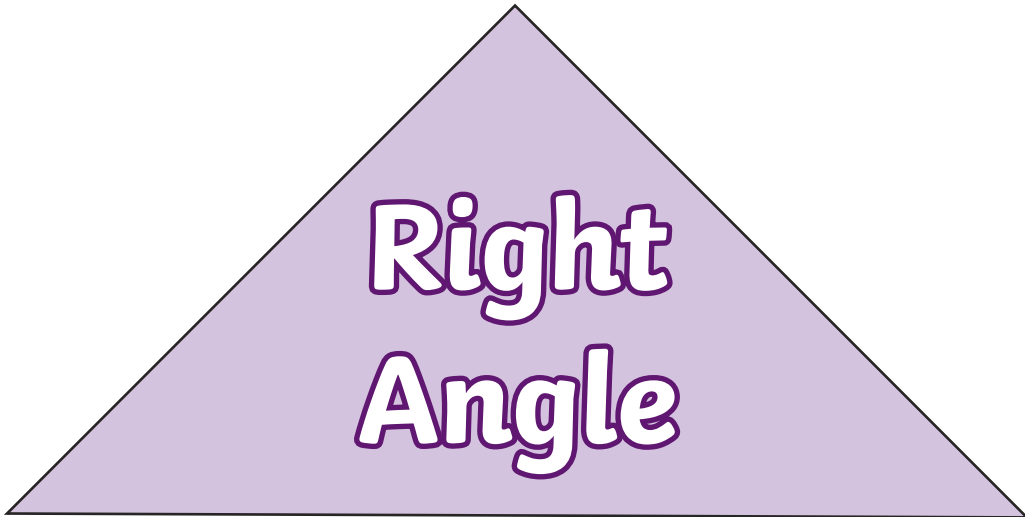
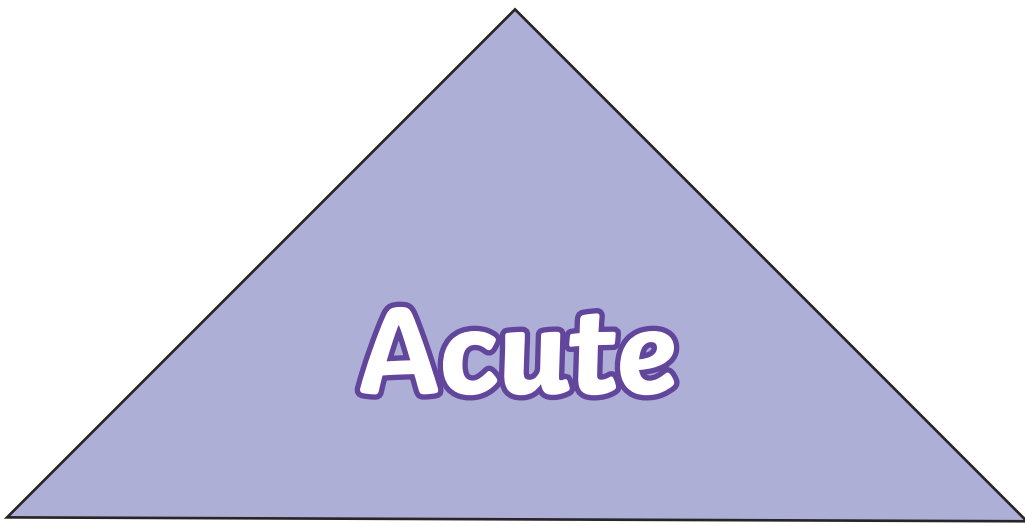
glue here

Types of Angle



1. Cut out the large square below. Cut out the four triangles on the next page which have angle names written on them.
2. Fold the four corners of the square into the centre - this will create four triangles.
3. Take the four triangles you have cut out and stick them onto the triangles you have folded. Make sure the definition of the angle on the inside of the shape matches the name of the angle on the outside of the shape.
4. Using glue underneath the small square, stick the folded square into your lapbook.

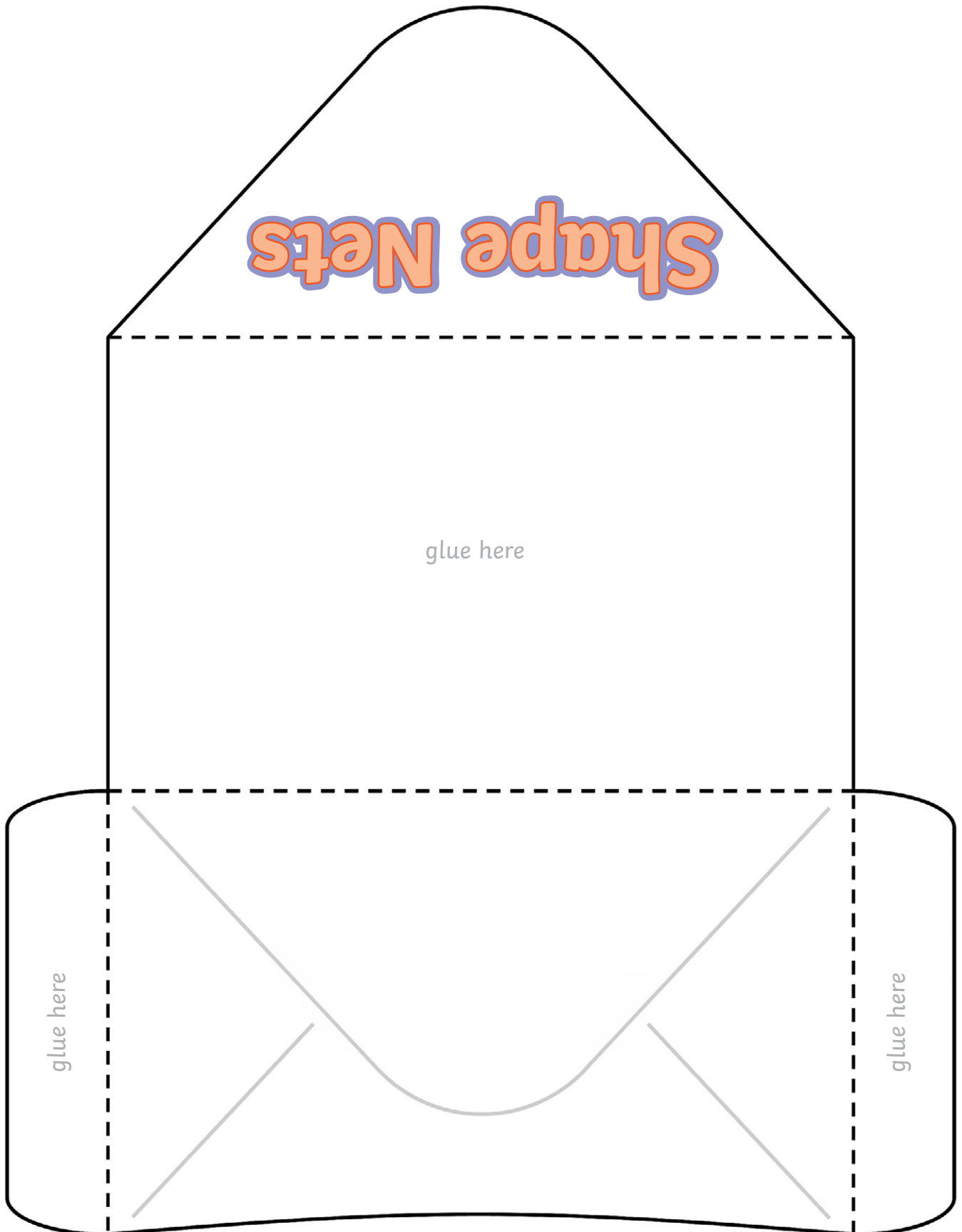




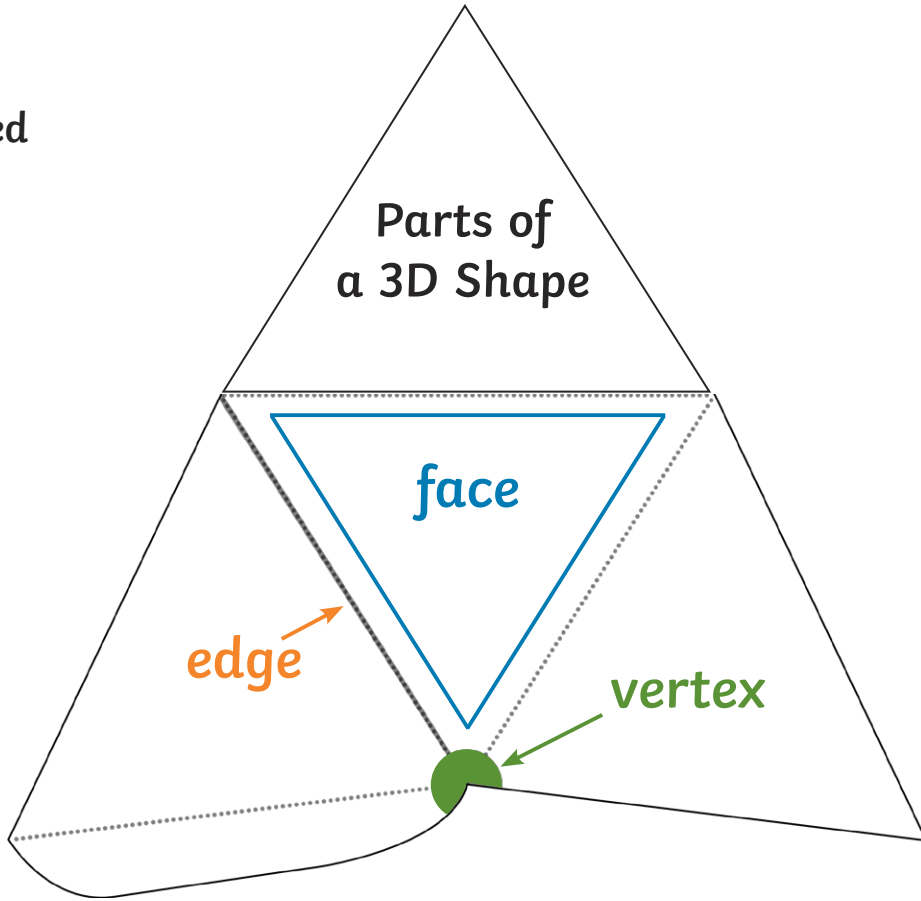
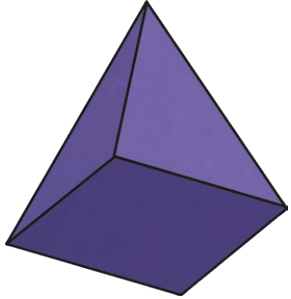
Shape Nets



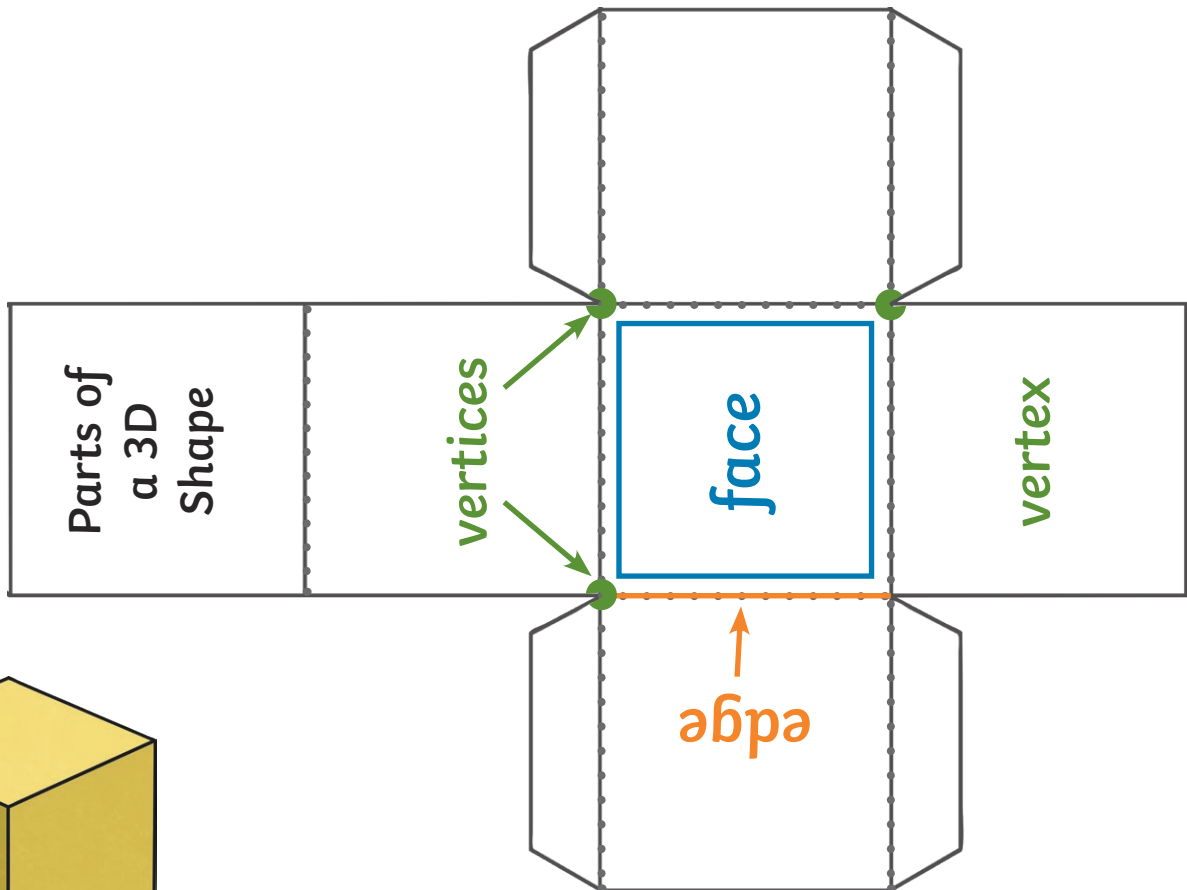
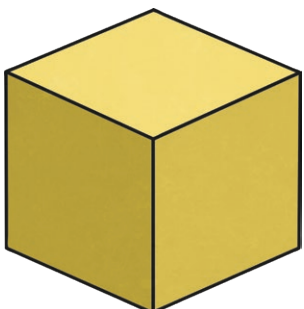
1. Cut out the envelope, assemble and glue.
2. Stick the envelope into your lapbook.
3. Cut out the shape nets and place them in the envelope. You may need to fold them to fit.



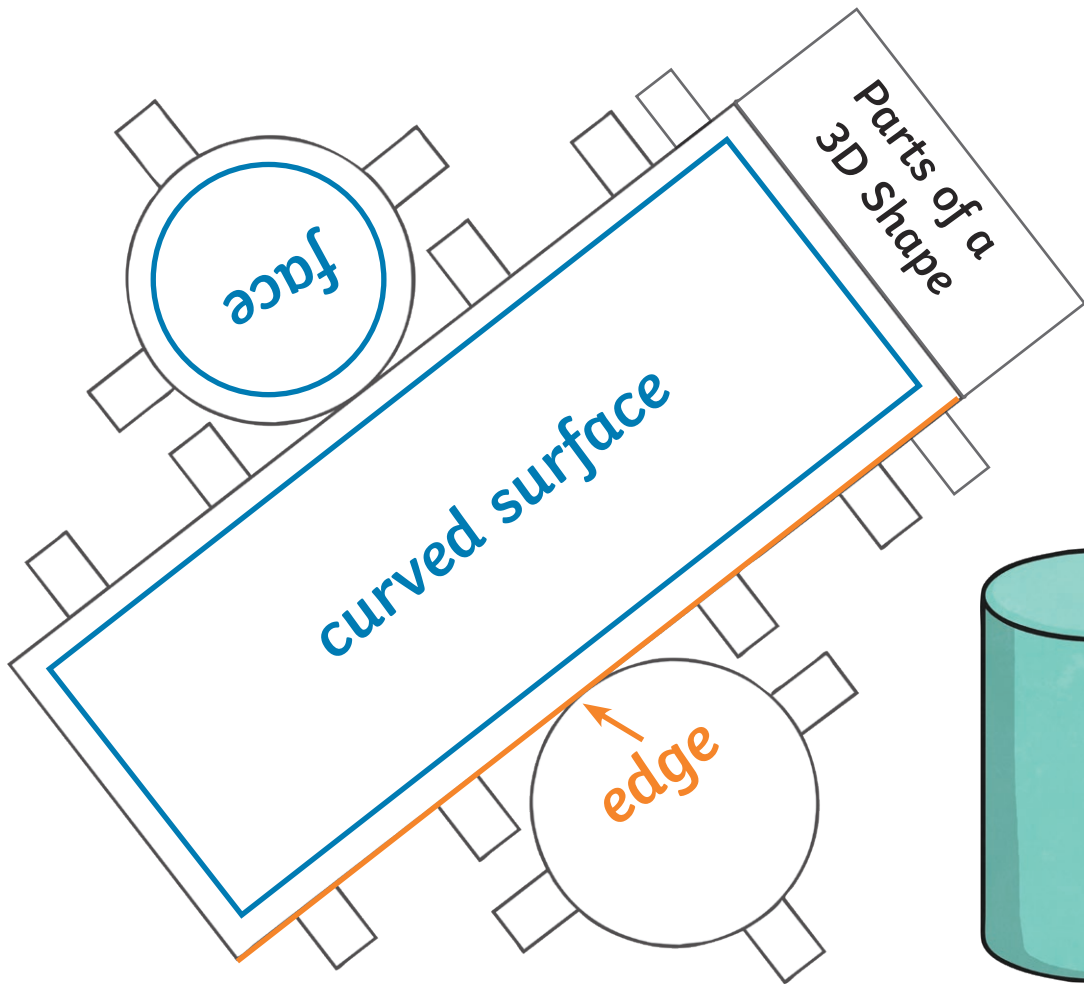
Triangular-based Pyramid



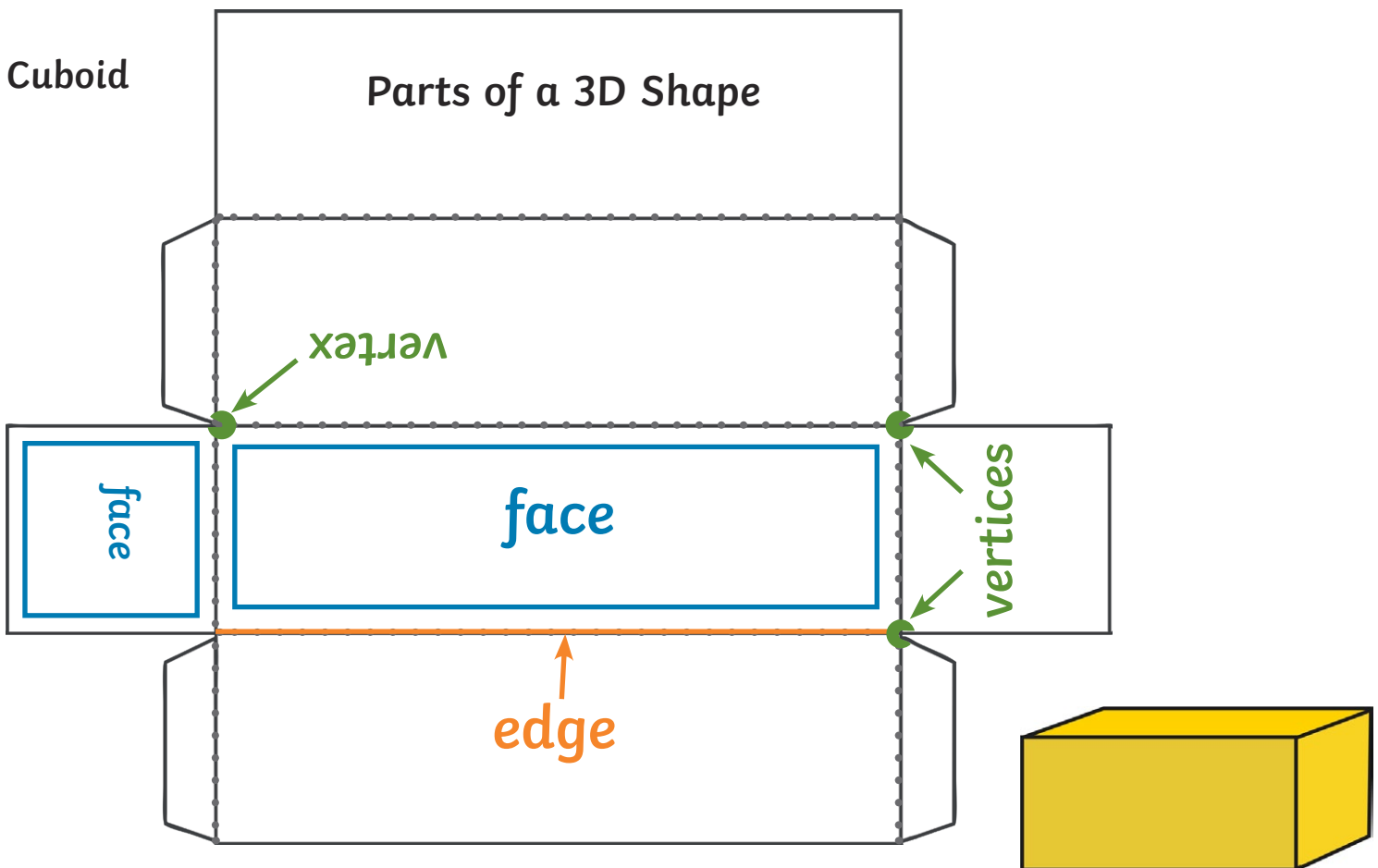
Cube



Cylinder



Cuboid



Parallel and Perpendicular Lines

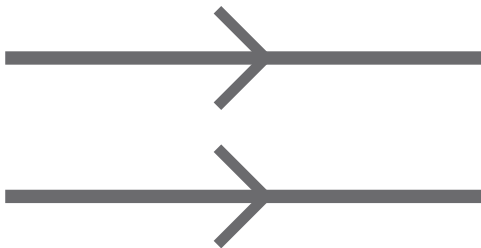
1. Cut out the shape - be careful to leave the flap attached.
2. Fold along the dotted lines.
3. Glue the name label onto the flap.
4. Stick the folded sheet into your lapbook.



Parallel and Perpendicular Lines

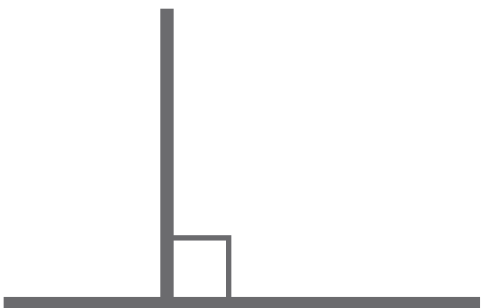
Parallel

Parallel refers to things that are the same distance apart all along their length. Parallel lines never meet



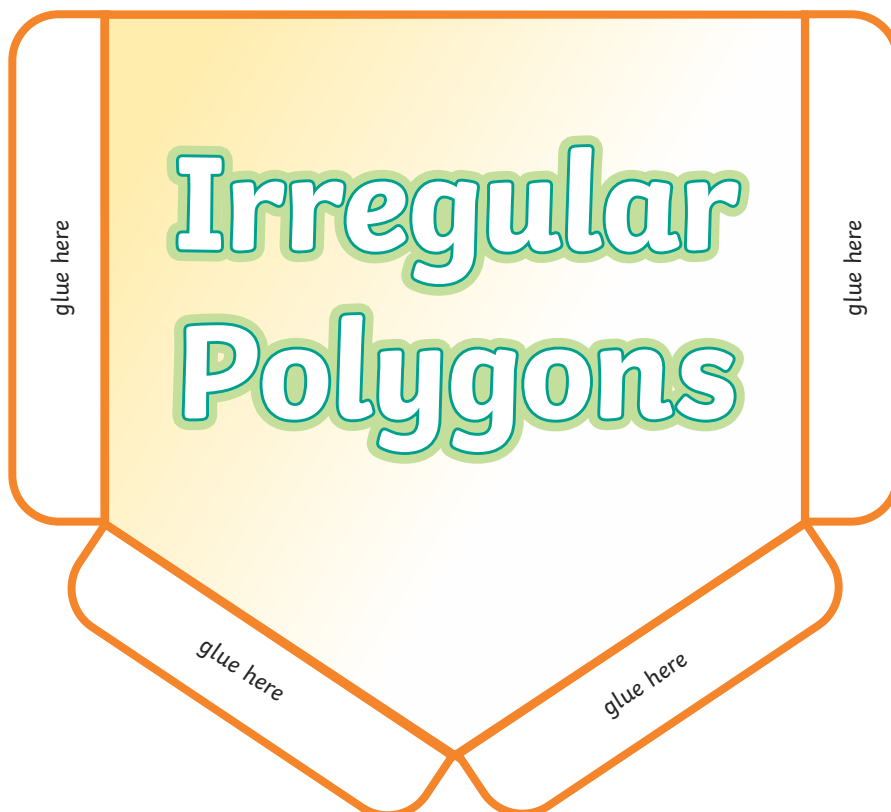
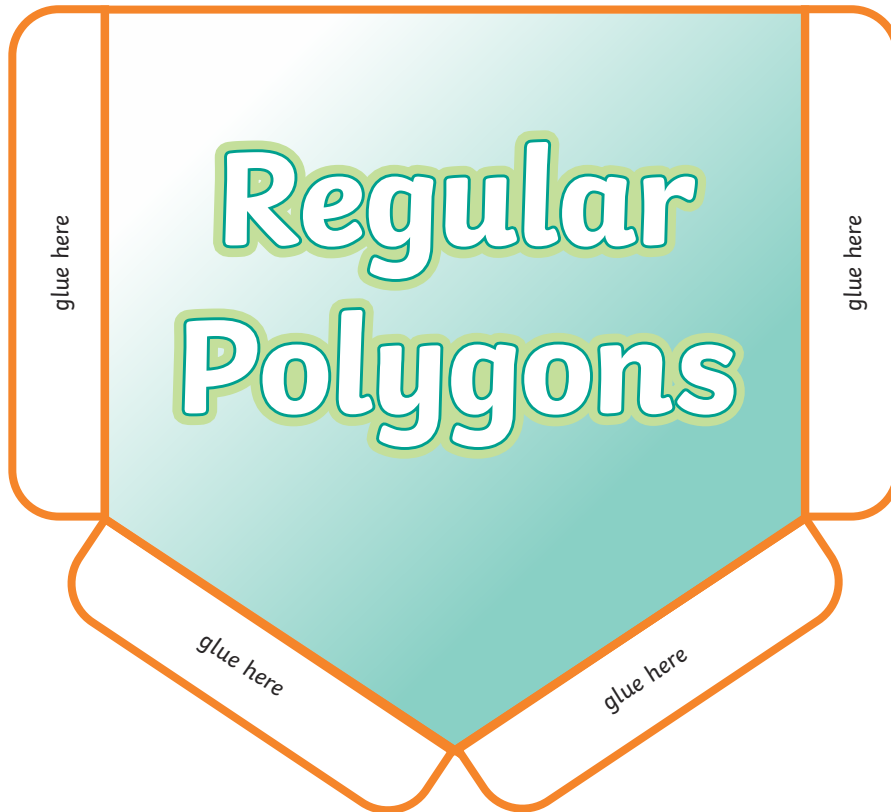
Perpendicular

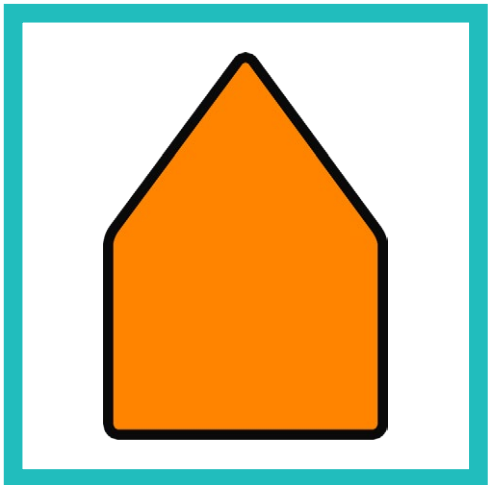
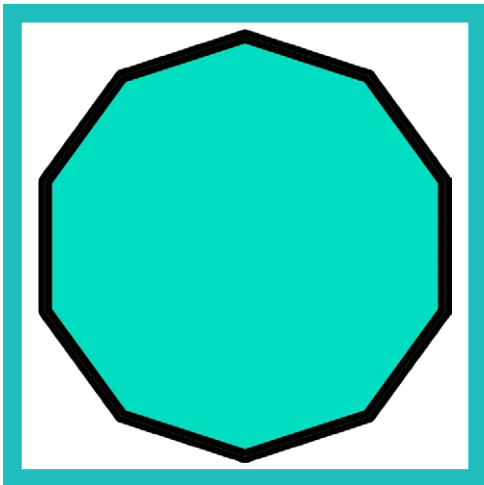
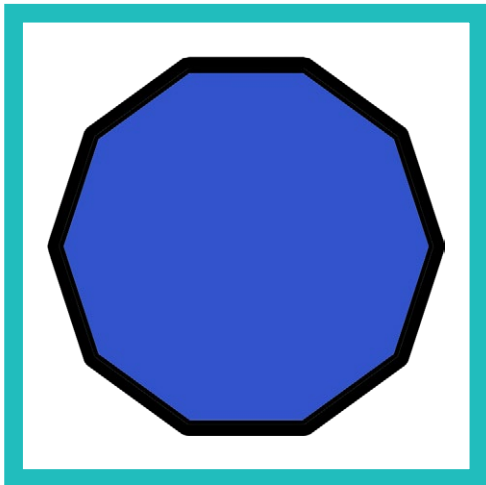
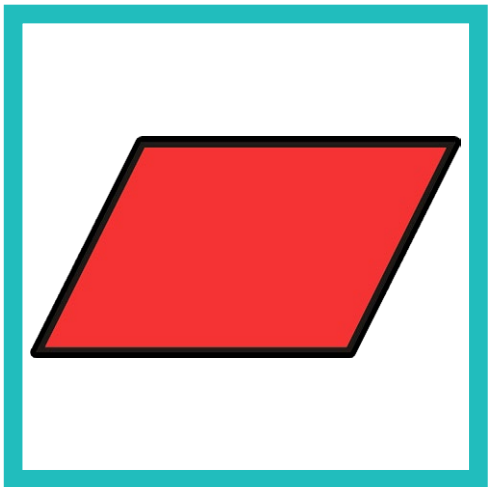
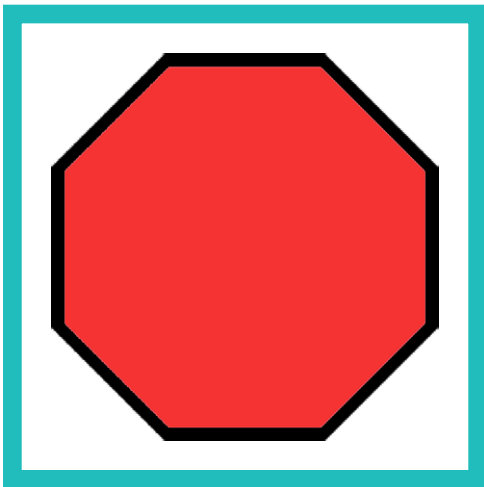
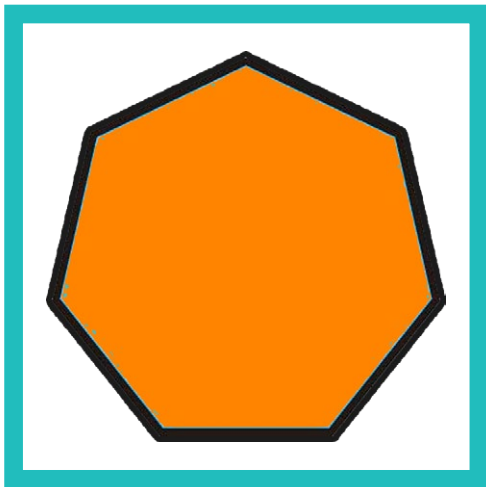
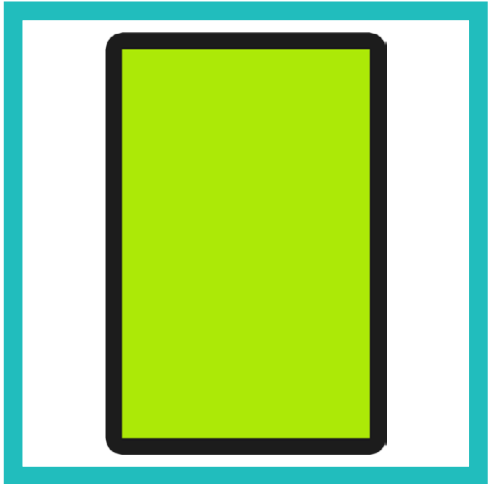
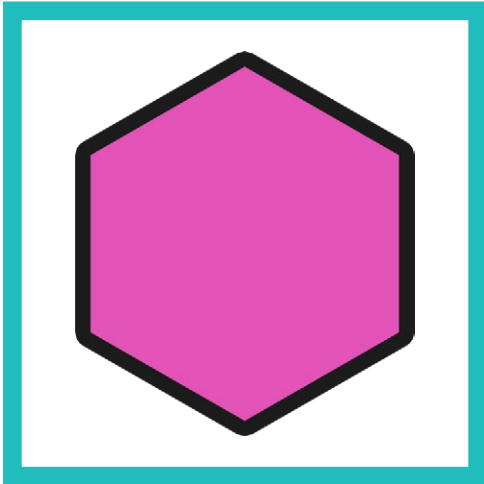
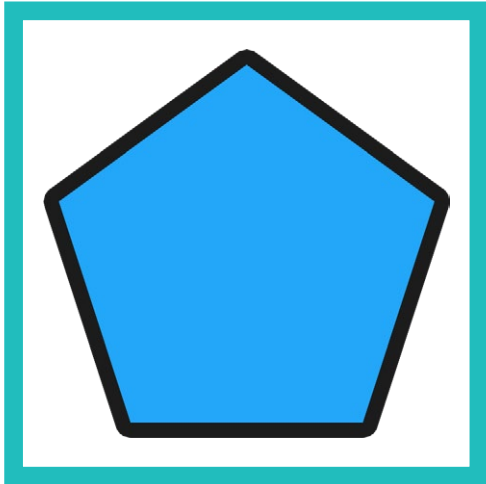
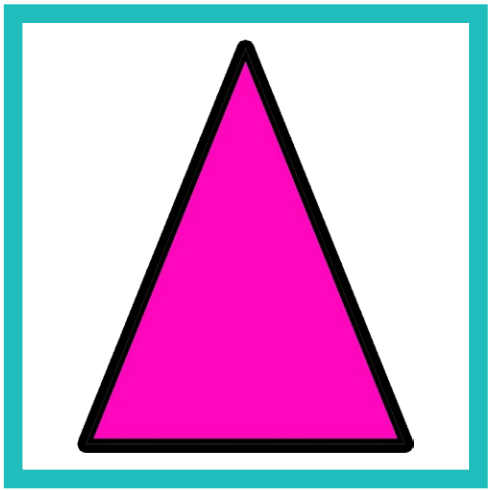
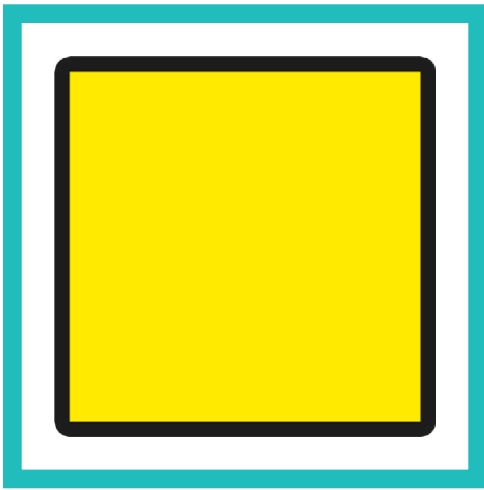
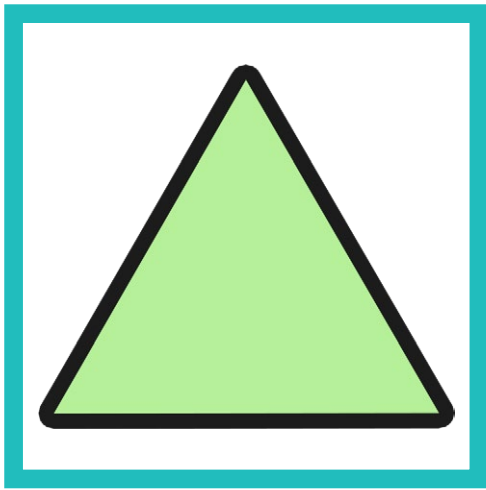
Perpendicular lines are lines which intersect at 90° to form a right angle.

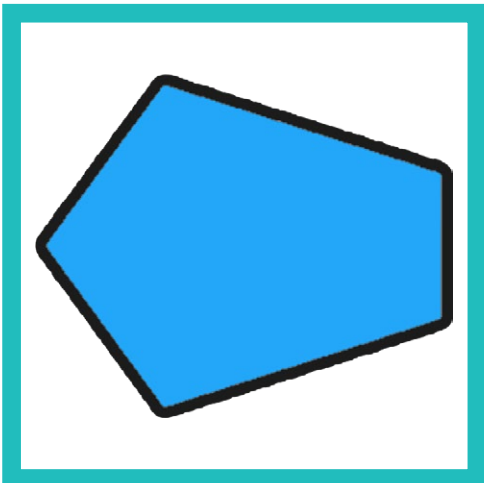
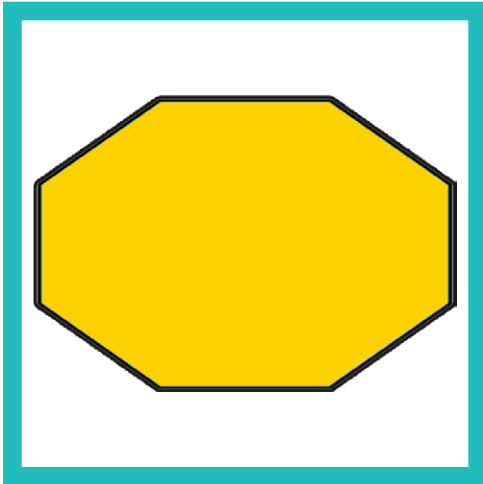
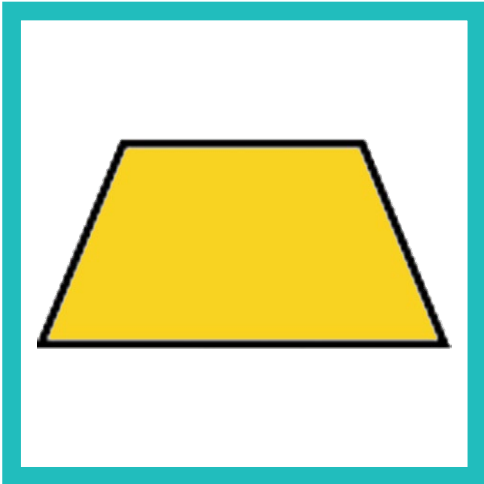
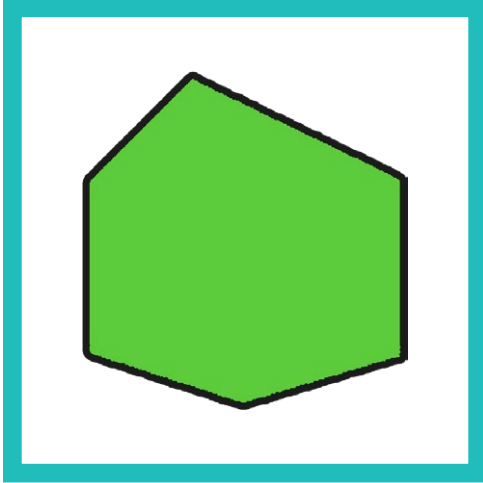
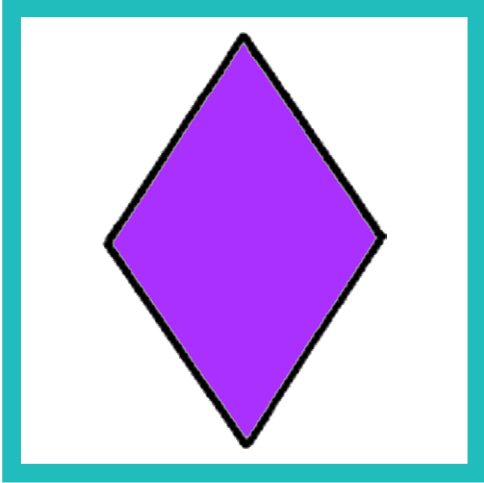
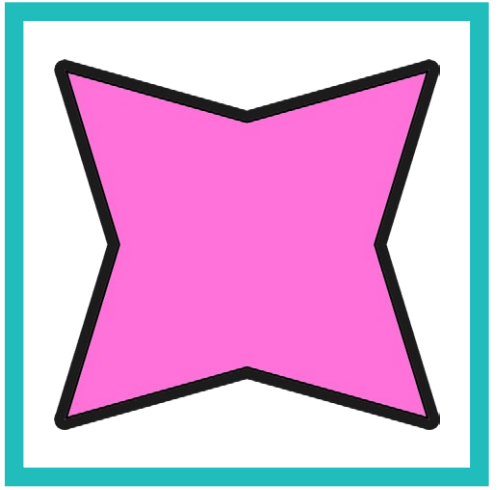
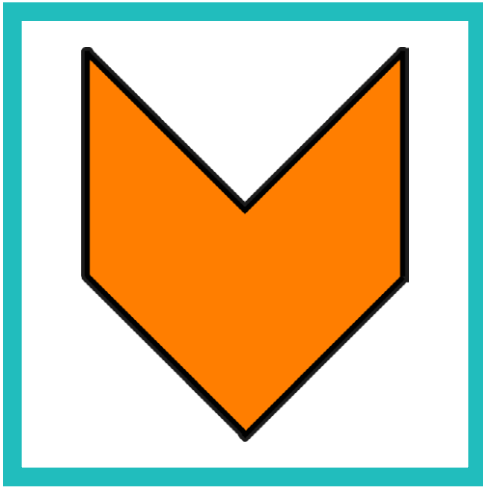
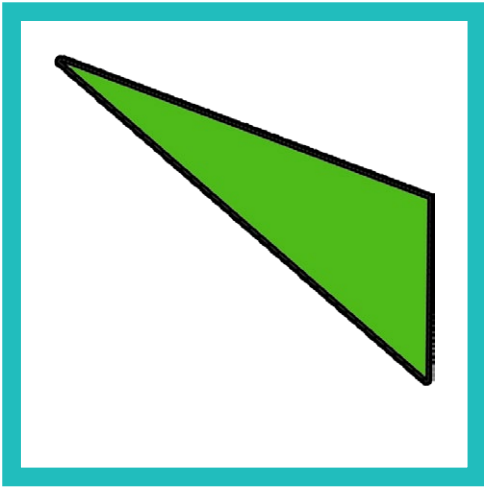


Regular and Irregular Polygons

1. Cut out the pockets and shape cards.
2. Glue the pockets into your lapbook by gluing the tabs, taking care that you leave the centres free so that you can slide the cards into them.
3. Sort the cards into regular and irregular polygons and place them in the correct pockets.

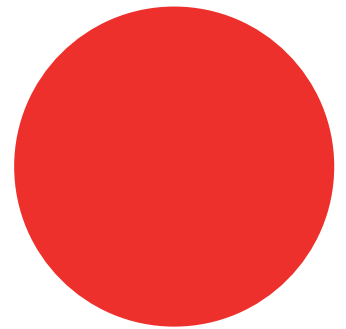






Area

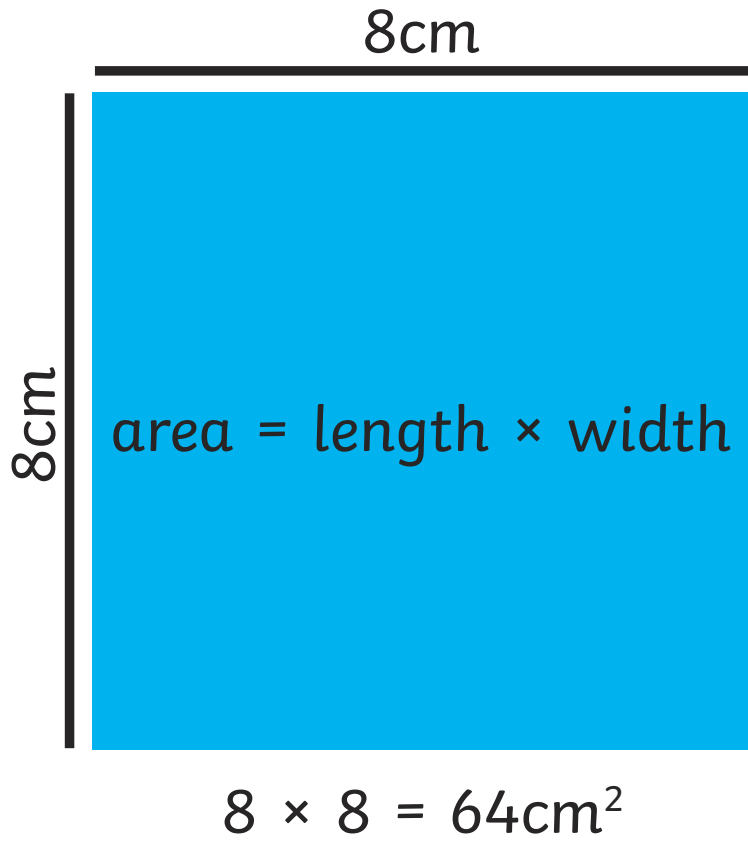
1. Cut out each individual box.
2. Glue the tab on the top of box 4 and stick onto the top of box 5. Glue the tab on the top of box 3 and stick onto the top of box 4. Continue until the title card 'Area' is glued on last with a line of glue on the top edge. You should now have a flipbook.
3. Glue your flipbook into your lapbook.



Area

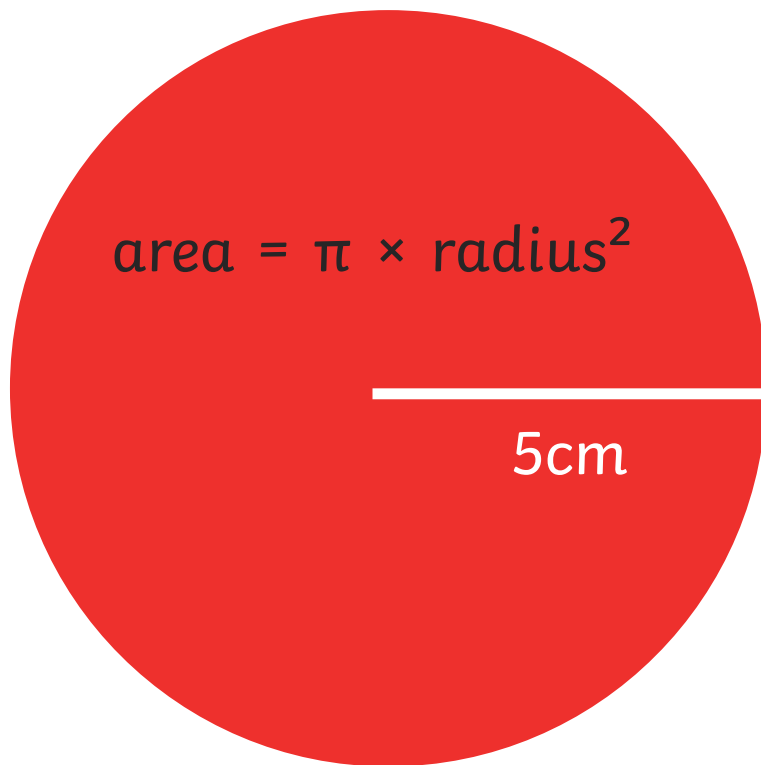
Area is the amount of square units inside a shape. We use different formulae for calculating the area of different shapes.





1

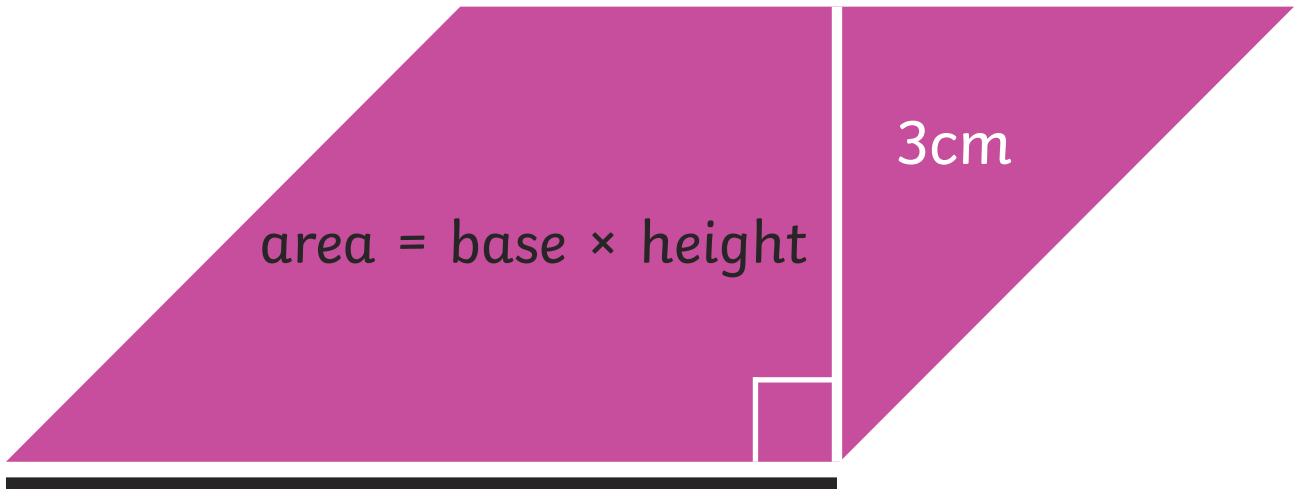
Squares



$$3.14 \times 5^2 = 78.5\text{cm}^2$$

2

Circles



5cm

$$3 \times 5 = 15\text{cm}^2$$

3

Parallelograms

4m

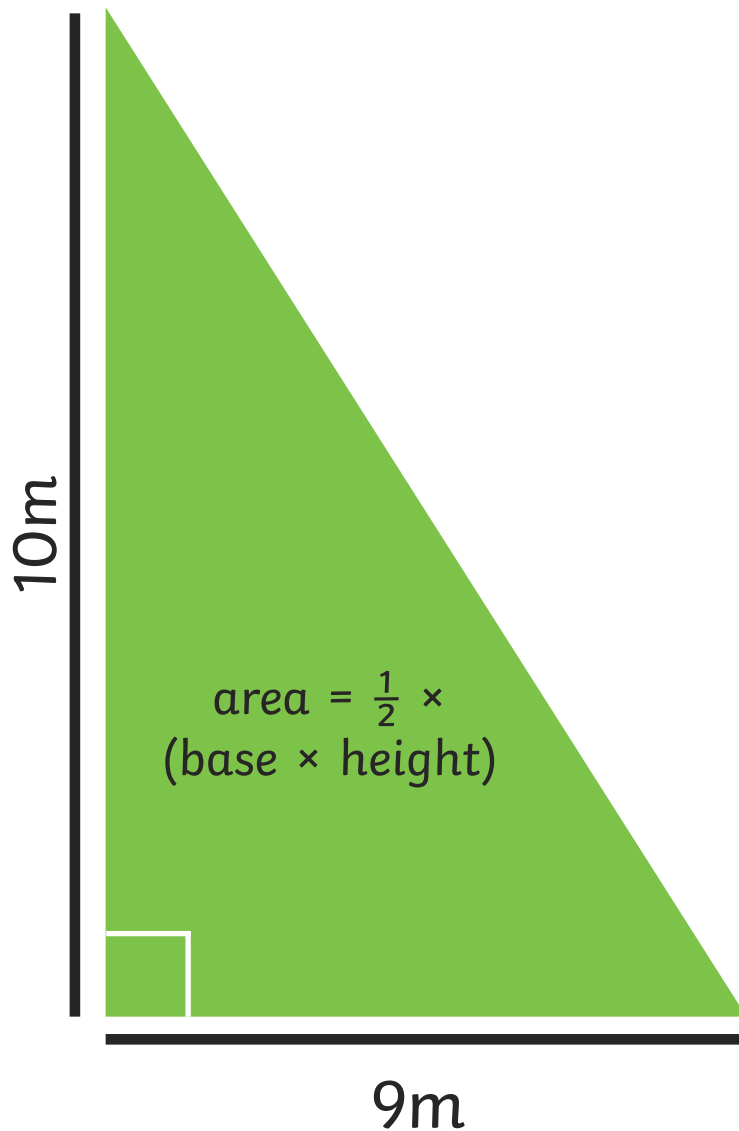
7m

area = length \times width

$$4 \times 7 = 28\text{m}^2$$

4

Rectangles



$$\frac{1}{2} \times (9 \times 10) \\ = 45\text{m}^2$$

5

Triangles

Calculating Unknown Angles

1. Cut out each individual box.
2. Glue the tab on the top of box 4 and stick onto the top of box 5. Glue the tab on the top of box 3 and stick onto the top of box 4. Continue until the title card 'Calculating Unknown Angles' is glued on last with a line of glue on the top edge. You should now have a flipbook.
3. Glue your flipbook into your lapbook.

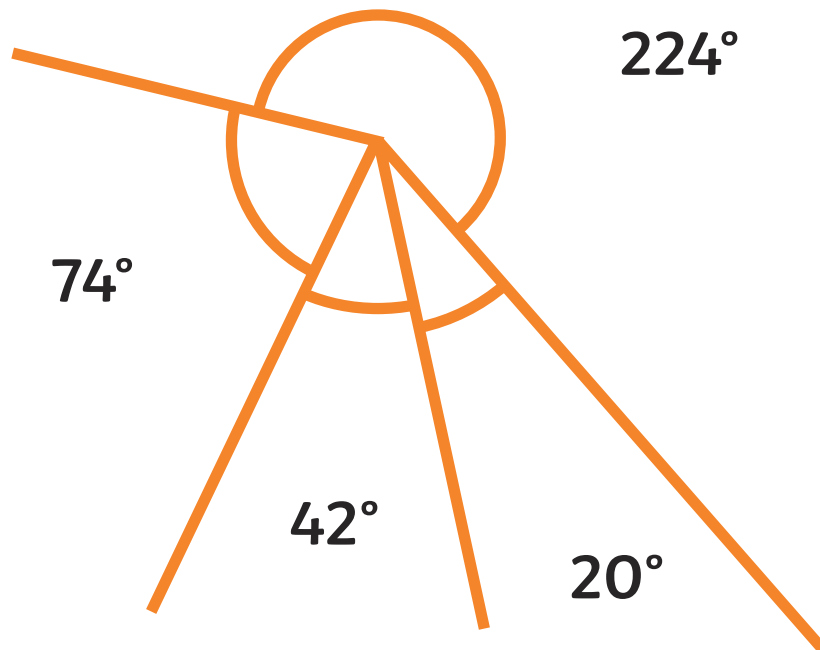
Calculating Unknown Angles



Angles on a straight line add to 180° .

1

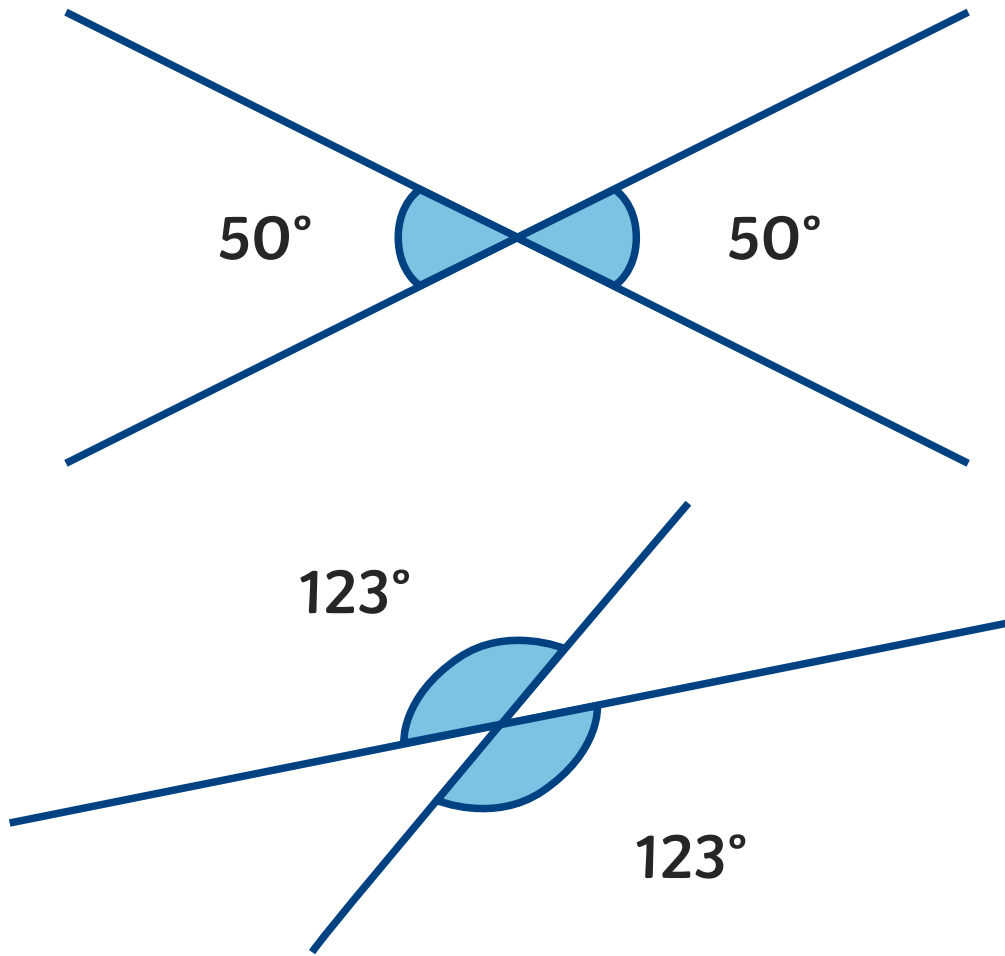
Angles on a straight line



Angles around a point add to 360° .

2

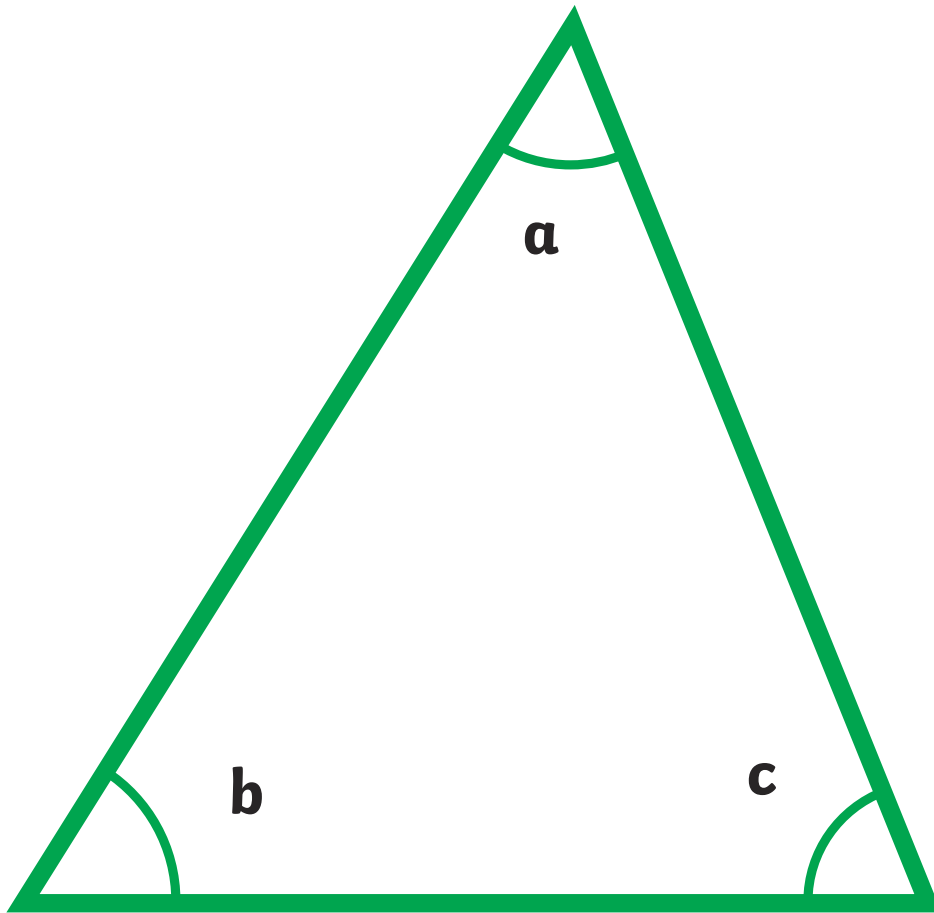
Angles around a point



Opposite angles that share a vertex are equal.

3

Opposite Angles

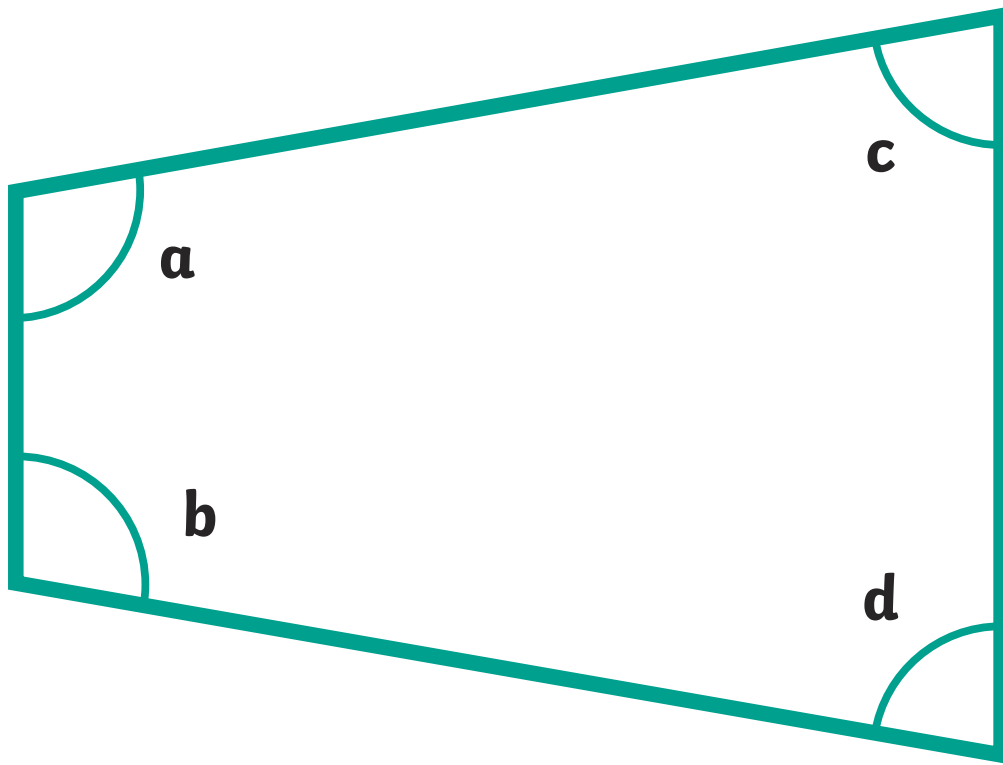


$$a + b + c = 180^\circ$$

Angles in a triangle add to 180° .

4

Angles in a Triangle



$$a + b + c + d = 360^\circ$$

Angles in a quadrilateral add to 360° .

5

Angles in a Quadrilateral

Angles in a Turn

1. Cut out the template.
2. Fold along the dotted lines.
3. Stick the template into your lapbook by gluing the tab.

