2D Shapes

Option

Quiz

This is a photo of a honeycomb. Bees store honey in them.

The spaces in the honeycomb form a pattern of shapes. What do you notice about the shapes?

What shape do you see in the pattern? Do they have the same size too? Describe what you notice.

What shape do you see in a beehive?

Hexagons

What do you notice about how the shapes are arranged?

The hexagons have the same size and are identical.
They are arranged neatly with no overlap or gaps in between.

A polygon is a closed 2D shape (flat) that is made up of straight edges.
Each polygon is given a special name on the basis of its number of sides.

Sides	Name of Polygon
3	Triangle
4	Quadrilateral
5	Pentagon
6	Hexagon
7	Heptagon
8	Octagon
9	Nonagon
10	Decagon
11	Hendecagon
12	Dodecagon

Look Back

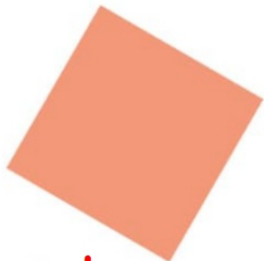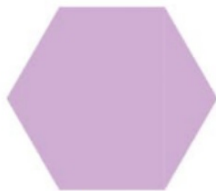non-polygon

non-polygon

polygon

polygon

polygon

polygon

polygon

polygon

non-polygon

Look at the picture. How many different shapes are there? How can you name the shapes? Which of the shapes are polygons? Talk to your partner about the shapes.

Look Back

semi-circle

semi-circle

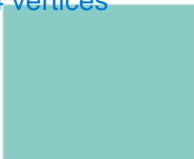**hexagon**
6 vertices

square
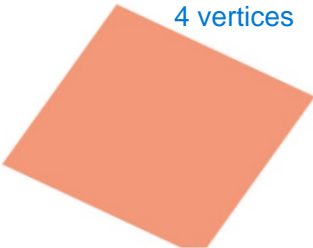4 vertices

triangle
3 vertices

4 vertices

rhombus

hexagon
6 vertices

semi-circle

Thinking Cap

Join these two triangles to make bigger shapes. How many triangles of different sizes can you make? How many different 4-sided polygons can you make? Compare your polygons with your partner. Use triangular cutouts to help you.

Let's Learn

a Tania joins two pieces of wood to build a door. Each piece of wood has a different shape. The dotted line shows where Tania joined the pieces.

semi-circle   rectangle

> You can combine different shapes to make a new shape.

The shape is not a polygon because it has a curved side.

> What are the properties of a polygon?

This door has ___**1**___ curved edge, ___**3**___ straight edges and ___**2**___ vertices. Is this shape a **polygon**? Explain your answer.
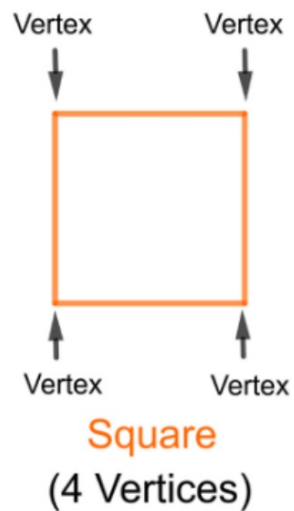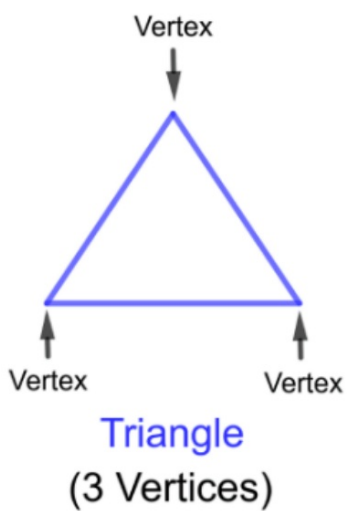
2D/flat
straight edges
closed

A polygon is a shape with at least 3 straight sides and vertices. It has no curved sides.

A vertex is a point where two lines or edges meet.

Vertex

Vertex   Vertex

Vertex   Vertex   Vertex   Vertex

Triangle   Square
(3 Vertices)   (4 Vertices)

b   Joe has some **square** pieces of wood. He joins 3 of the pieces. What shape does he get from the three square pieces of wood?

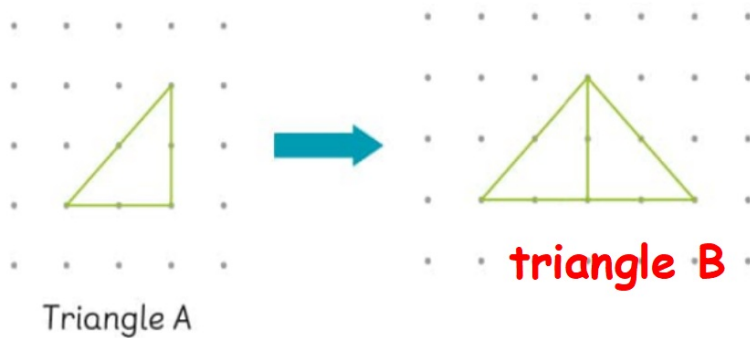You can **combine** two or more of the same shape to make bigger shapes.

He gets a _rectangle_.

c   Nora draws Triangle A in the grid below. She draws another triangle by rotating **Triangle** A to get a new shape. What is the new shape formed?

Triangle A

triangle B

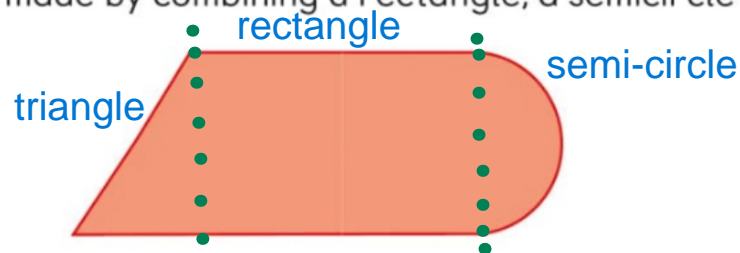What other figures can you make using 2 such triangles?

The new shape is a ___triangle___.

When Nora rotates Triangle A, she gets Triangle B, which has the same shape and size as Triangle A. The 2 triangles form a larger triangle which has a different shape.

Let's Practise

. 1 This figure is made by combining a rectangle, a semicircle and a triangle

rectangle

semi-circle

triangle

a Draw dotted lines on the figure to show the shapes used.

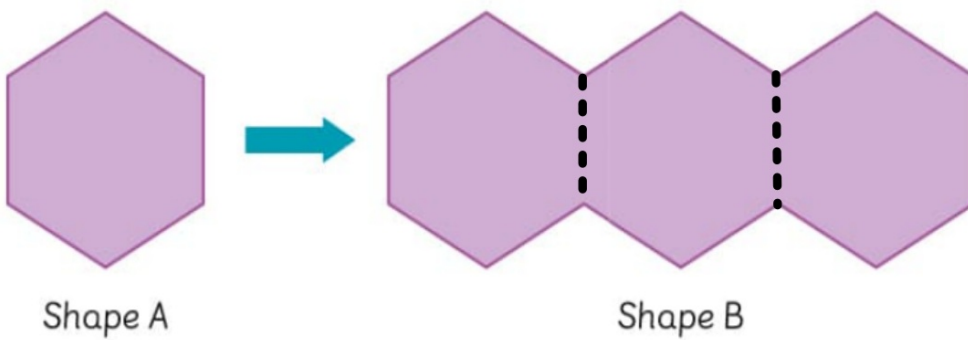b This figure has __1__ curved edge(s), __3__ straight edge(s) and __2__ vertices.

Is this figure a polygon? Explain your answer.

No, becuase it has a curved edge.
Polygons are flat (2D shapes), closed and have straight edges.

2 Shape B is made by combining three of Shape A. Draw dotted lines on Shape B to show each of Shape A.

Shape A   Shape B

Shape B is formed by combining shape A.