



# Maths

## Properties of Shape

# Need a coherently planned sequence of lessons to complement this resource?

**Lesson Breakdown**

Below is our suggestion for the most coherent and progressive sequence to teach this area of PlanIt Maths steps on the White Rose Maths scheme of learning although we have not aimed to mirror the exact order in

**2D Shapes (1): Recognise More 2D Shapes**  
Children begin by reviewing the 2D shapes they learnt in year 1. They begin by introducing to quadrilaterals as shapes with four sides and a

**NC Statement:** Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.  
**Lesson Aim:** To describe the properties of 2D shapes.

**2D Shapes (2): Introducing Polygons**  
In this lesson children learn the definition of a polygon and more specifically they are familiar with already triangle and square. Children are introduced to their reasoning skills to compare regular polygons. This lesson includes children Diving into Mastery activity cards. Children learn to count sides and vertices

**NC Statement:** Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.  
**Lesson Aim:** To describe the properties of polygons.

**Introduction**

In this geometry unit, children learn to identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line. They learn to identify and describe the properties of 3D shapes, including the number of edges, vertices and faces. Children compare and sort common 2D and 3D shapes and everyday objects. They also learn to identify 2D shapes on the surface of 3D shapes, for example, a circle on a cylinder and a triangle on a pyramid.

**Resources**  
Flat plastic shapes, 3D plastic shapes, camera for recording practical work.

**Solvett Lesson Pack: Triangular Extravaganza**  
How many triangles are hidden in the picture? This Solvett Lesson investigates hidden triangles and guides children to use a systematic counting approach. It encourages children to record their answers and work methodically.

**Assessment Statements**  
By the end of this unit:

children working towards the expected level will be able to:

- name some common 2D and 3D shapes from a group of shapes or in pictures (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres)
- describe some shape properties
- sort 2D and 3D shapes in simple ways
- read some shape names
- create 2D shapes using geoboards
- make simple 2D and 3D shape patterns
- create 3D shape structures

children working at the expected level will be able to:

- name common 2D and 3D shapes, use general terms to name groups of shapes, such as quadrilateral and polyhedron
- recognise regular and irregular polygons in sizes and orientations
- describe the properties of 2D and 3D shapes (language sides, vertices, edges and faces)
- identify vertical lines of symmetry in 2D shapes
- identify 2D faces on 3D shapes
- sort 2D and 3D shapes by their properties
- read and write some shape names
- create 2D shapes using geoboards and draw using straight lines
- make 2D and 3D shape patterns
- create and describe 3D shape structures

**Properties of Shape**  
Maths | Year 2 | Steps to Progression Overview

The aim of this overview is to support teachers using PlanIt Maths to show the most coherent and progressive sequence to teach each area of maths. We also want to fully support teachers who use the White Rose Maths scheme of learning to make full use of the resources available within PlanIt Maths. Wherever possible, lesson packs have been matched to each of the small steps on the White Rose Maths scheme of learning.

**Yearly Overview**

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value		Number: Addition and Subtraction				Measurement: Money		Number: Multiplication and Division			
Spring	Number: Multiplication and Division		Statistics	Geometry: Properties of Shape			Number: Fractions		Measurement: Length and Height	Consolidation		
Summer	Position and Direction		Problem Solving and Efficient Methods		Measurement: Time	Measurement: Mass, Capacity and Temperature		Investigations				

See our [Properties of Shapes Steps to Progression](#) document.

Twinkl PlanIt is our award-winning scheme of work with over 4000 resources.



# Sort 2D Shapes



# Aim

- To sort 2D shapes according to their properties.

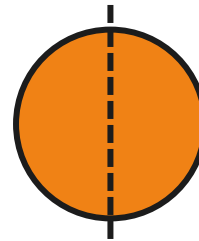
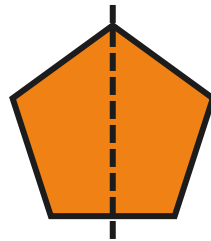
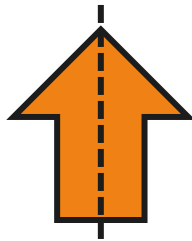
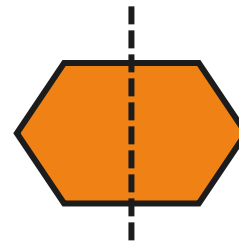
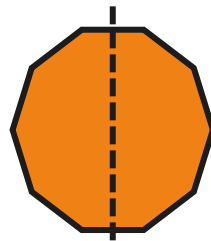
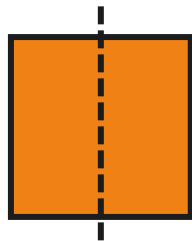
# Success Criteria

- I can describe the properties of 2D shapes.
- I can sort 2D shapes into sets.
- I can add a shape to a set.

# Remember It



Can you name any of these shapes?



Which shape has no vertices?



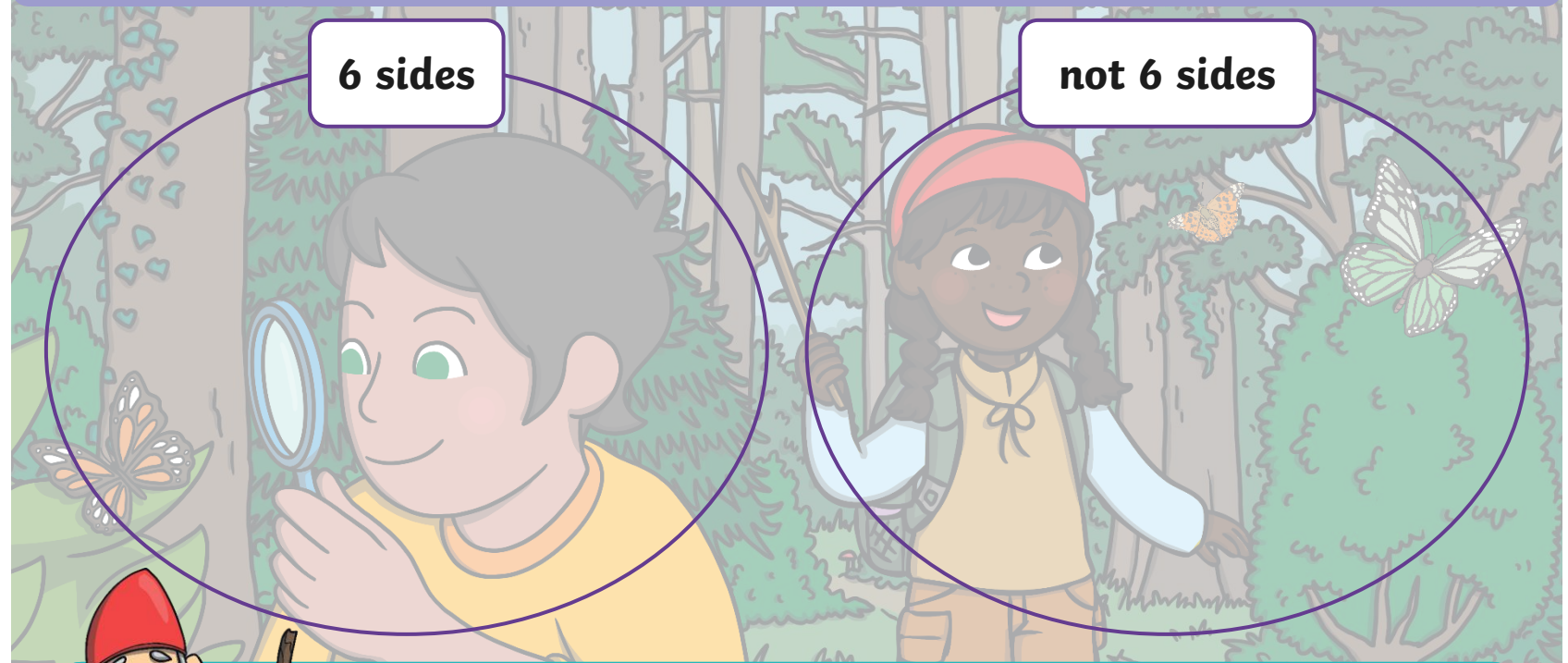
# Sort the Shapes



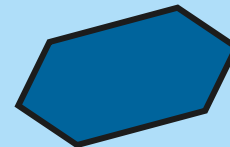
Can you sort these shapes into the two sets?

6 sides

not 6 sides



This is called a **Venn** diagram.



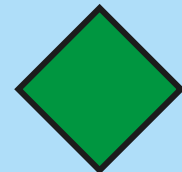
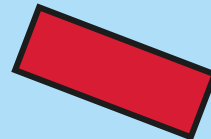
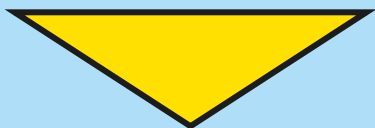
# Sort the Shapes



Can you sort these shapes into the two sets?

3 vertices

4 sides



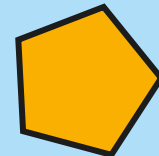
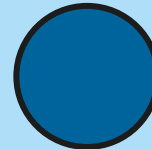
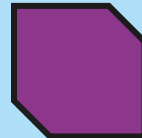
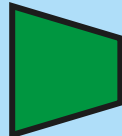
# Sort the Shapes



Can you sort these shapes into the two sets?

**Vertical Line of Symmetry**

**No Vertical Line of Symmetry**





# Sort the Shapes



Can you sort these shapes into the two sets?

curved sides

straight sides

It means a shape belongs in both sets.

This shape belongs here because it has a curved side **and** it has a straight side.

# Sort the Shapes

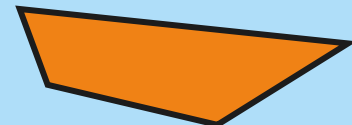
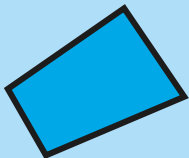


Can you sort these shapes into the two sets?

vertical line  
of symmetry

4 vertices

Don't forget to look out  
for shapes that go in here.



# Guess the Rule



Amna has sorted these shapes.

triangles

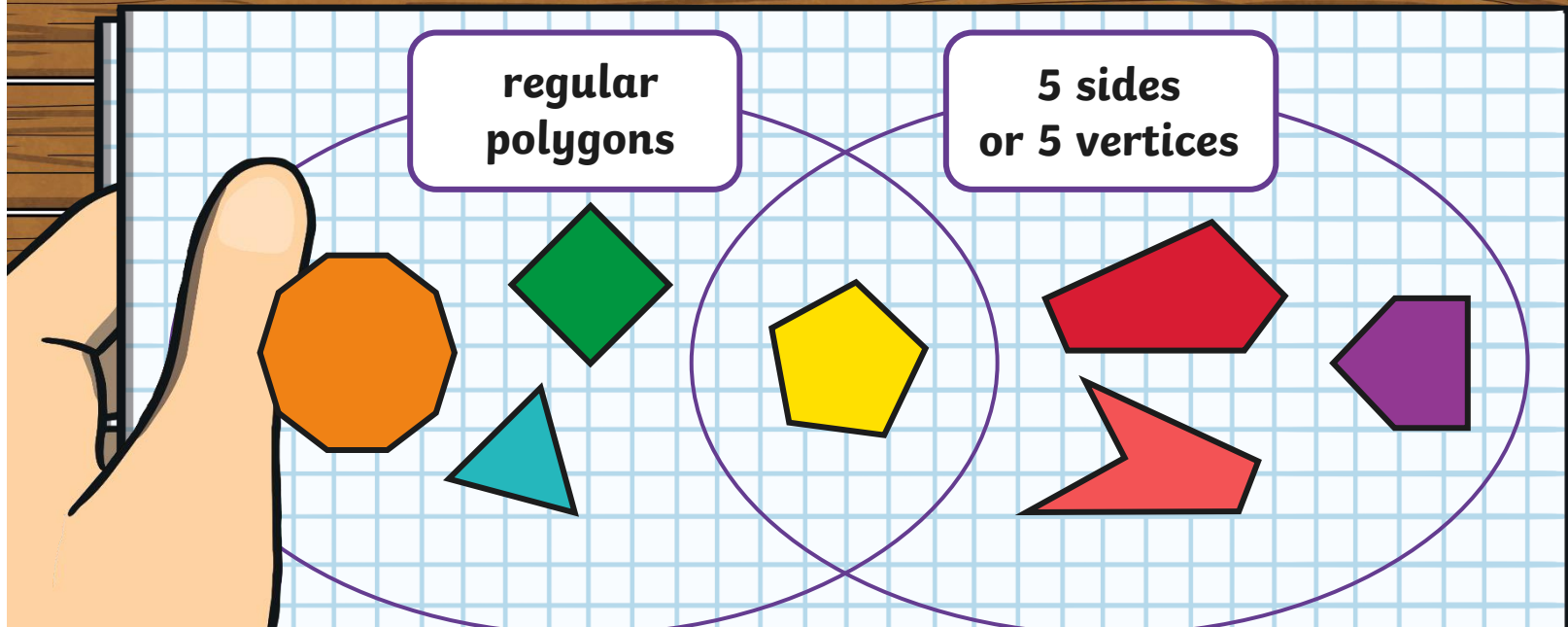
vertical line of symmetry

Can you write a label to go with each set? Explain how you know.

# Guess the Rule



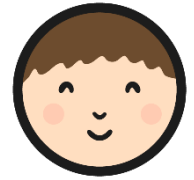
Amna has sorted these shapes.



Can you write a label to go with each set?

Can you write a label to go with each set? Explain how you know.

# 2D Shape Patterns

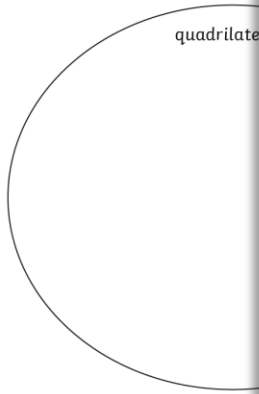


## All Sorts of Shapes

To sort 2D shapes according to their properties.

Cut out the shape pictures and glue them in the correct space on the diagram.  
Can you add your own shape to the diagram?

quadrilateral



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## All Sorts of Shapes

To sort 2D shapes according to their properties.



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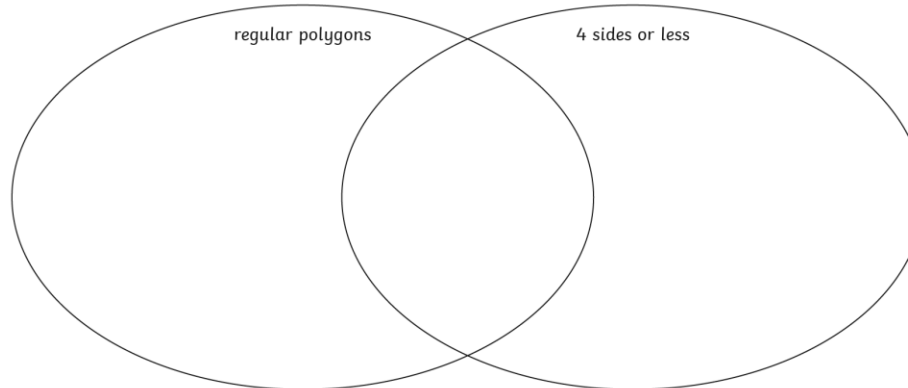
## All Sorts of Shapes

To sort 2D shapes according to their properties.



als

Cut out the shape pictures and glue them in the correct space on the Venn diagram.  
Can you add your own shape to the diagram?



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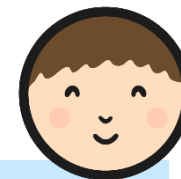
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Maths | Properties of Shapes | 2D Shapes | Lesson 7 of 8: Sort 2D Shapes

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# Diving into Mastery



Dive in by completing your own activity!

## Sort 2D Shapes

Sort these shapes into the sets by writing their names.



triangle



rectangle



pentagon



octagon



square



hexagon

fewer than 5 vertices

5 or more sides

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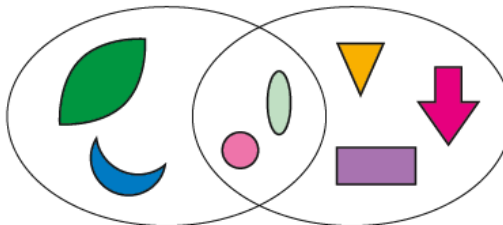
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Add one more shape to each set.

How have the shapes been sorted?  
Label each group.







go here?

Quadrilaterals



here:

- 
- 
- 
- 
- 
- 

nd?



- ar polygons
- n 4 vertices
- ar polygons
- f symmetry

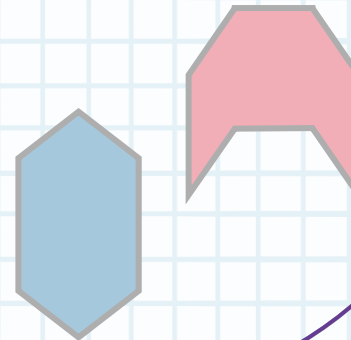
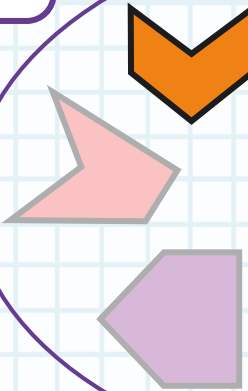
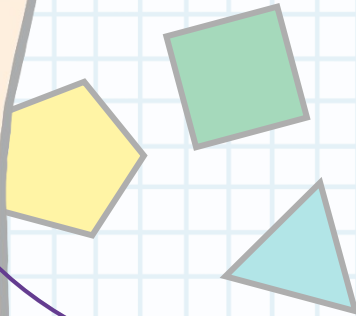
# What's Wrong?



One of these shapes is in the wrong place. Which one?

fewer than  
6 vertices

irregular  
polygons



Explain how you know.

**This hexagon is in the wrong place.  
It is irregular but it has 6 vertices.**

# Aim



- To sort 2D shapes according to their properties.

# Success Criteria

- I can describe the properties of 2D shapes.
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