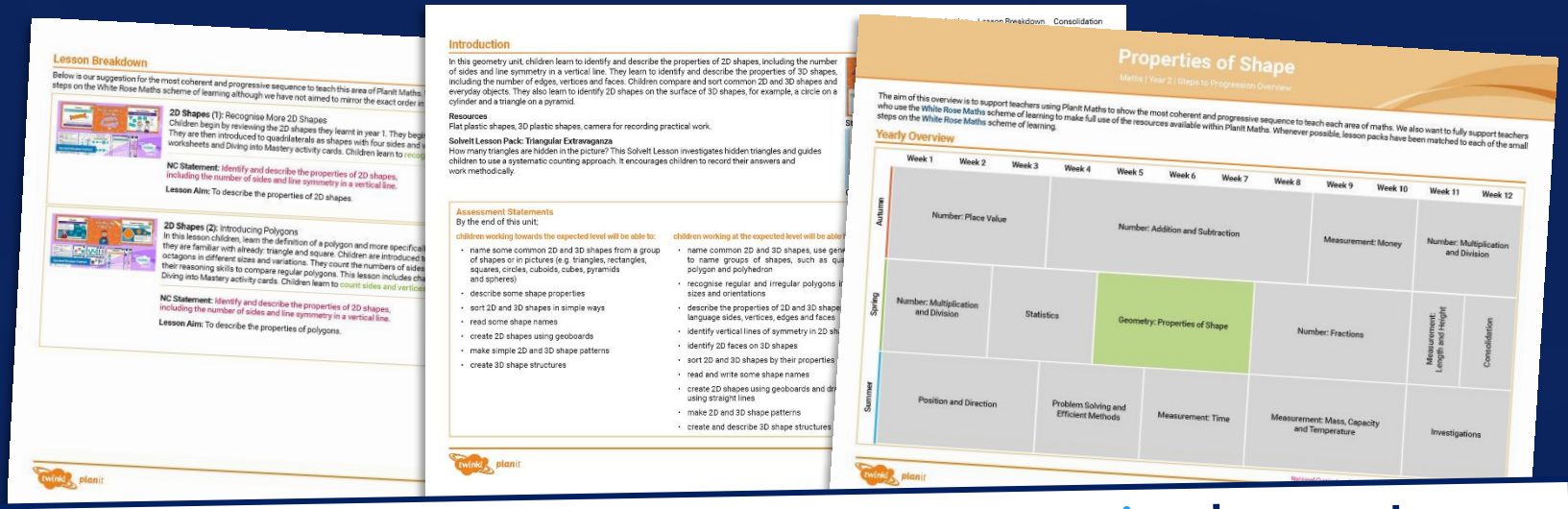
Maths

Properties of Shape

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



See our Properties of Shapes Steps to Progression document.

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

twinkl.com

Sort 3D Shapes

twinkl
Quality Standard Approved

Aim

- To sort 3D shapes according to their properties.

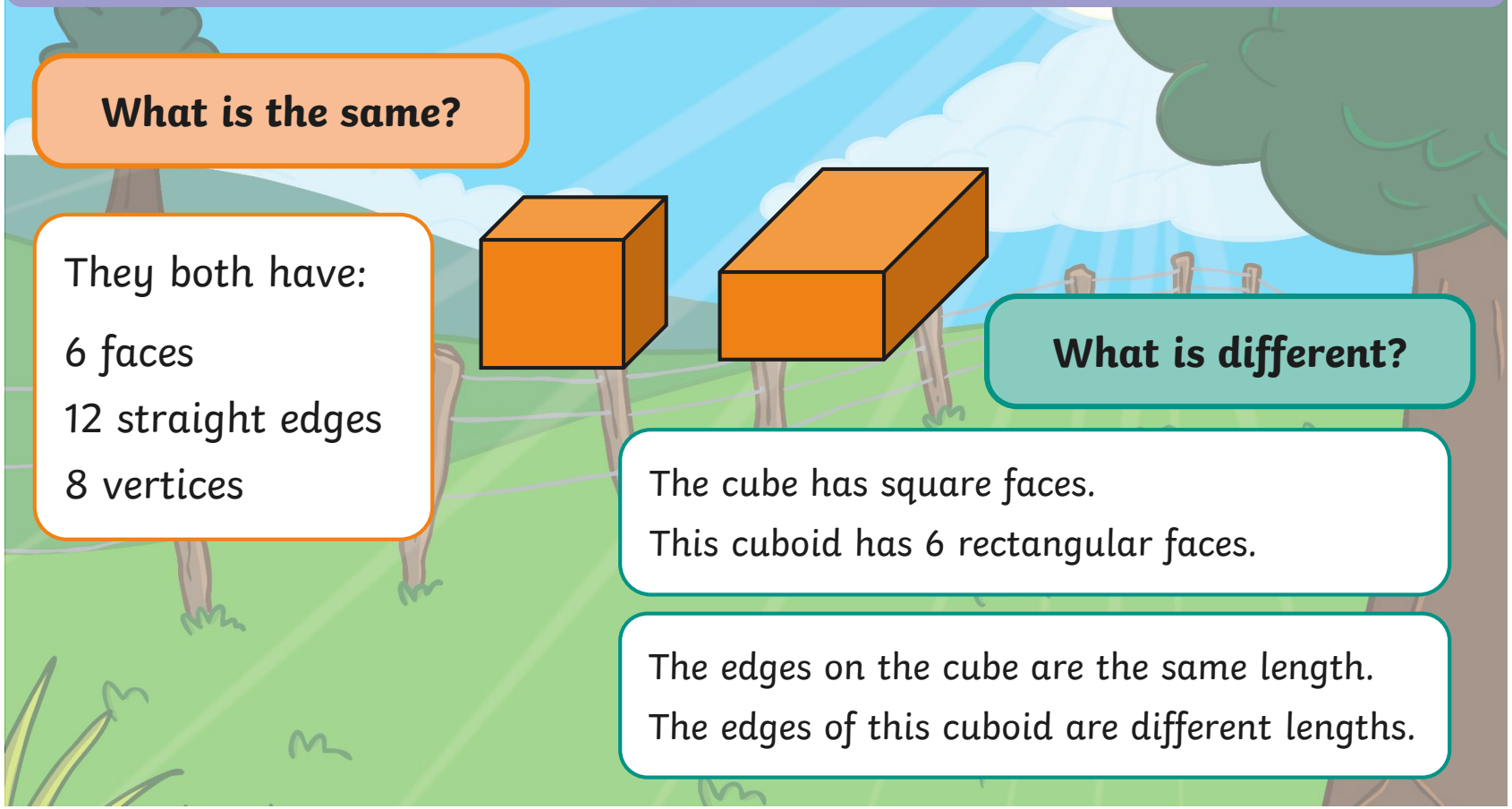
Success Criteria

- I can describe the properties of 3D shapes.
- I can use a Venn diagram to sort 3D shapes.
- I can choose my own criteria to sort 3D shapes.

twinkl.com

Remember It

Compare the 3D Shapes.



What is the same?

They both have:

6 faces

12 straight edges

8 vertices

What is different?

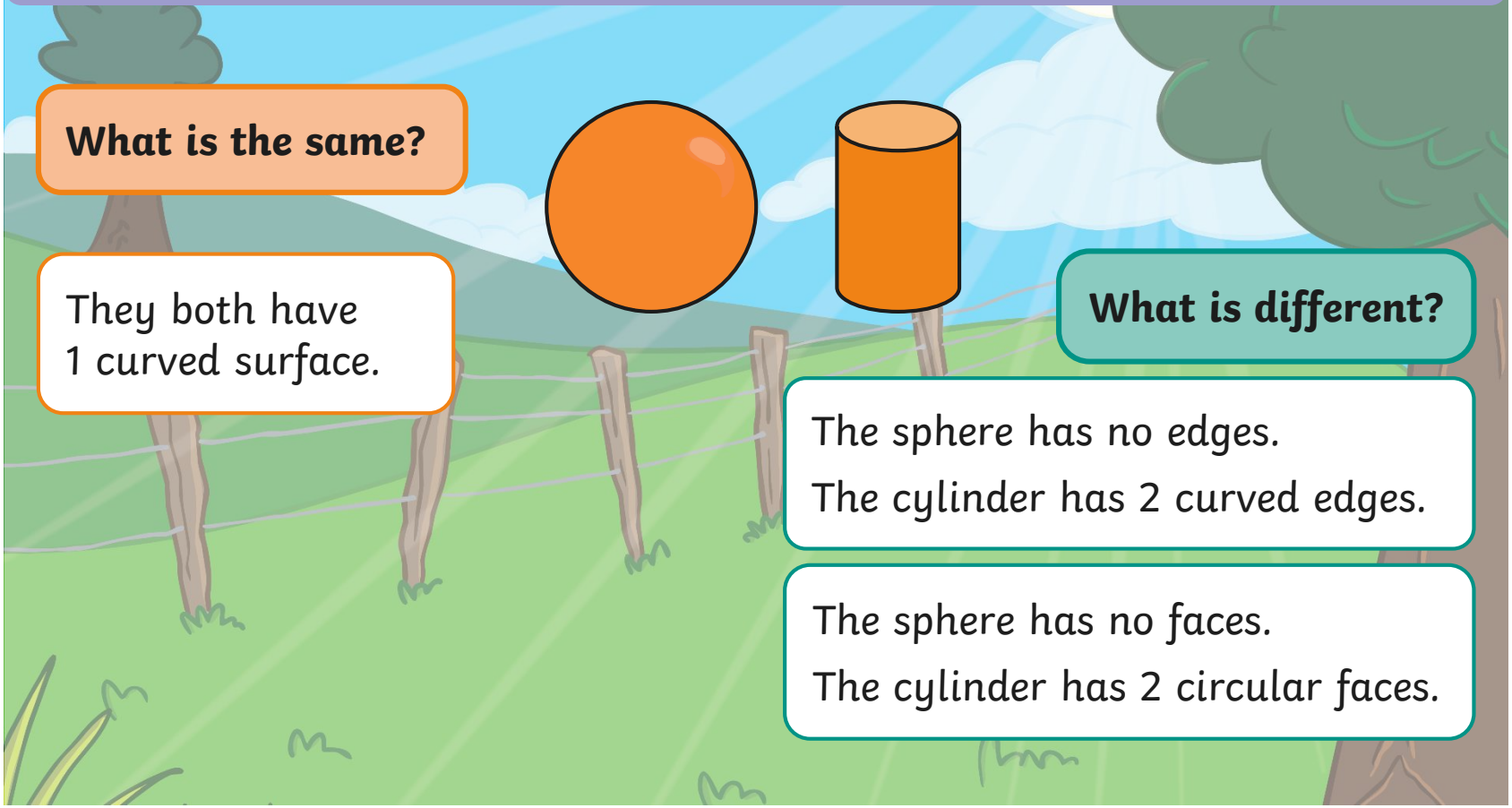
The cube has square faces.
This cuboid has 6 rectangular faces.

The edges on the cube are the same length.
The edges of this cuboid are different lengths.

twinkl.com

Remember It

Compare the 3D Shapes.



What is the same?

They both have
1 curved surface.

What is different?

The sphere has no edges.
The cylinder has 2 curved edges.

The sphere has no faces.
The cylinder has 2 circular faces.

twinkl.com

Remember It

Compare the 3D Shapes.

What is the same?

Both shapes have triangular faces.

Both shapes have straight edges.

Both shapes have vertices.

What is different?

The triangular-based pyramid has 4 triangular faces.

The triangular prism has 2 triangular faces and 3 rectangular faces.

The triangular-based pyramid has 4 vertices.

The triangular prism has 6 vertices.

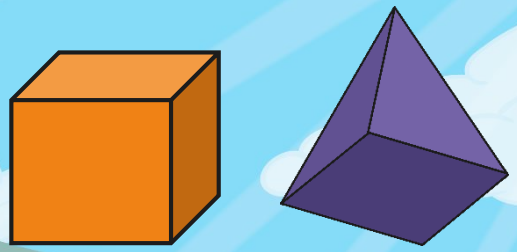
The triangular-based pyramid has 6 edges.

The triangular prism has 9 edges.

twinkl.com

Remember It

Compare the 3D Shapes.



What is the same?

Both shapes have at least 1 square face.

Both shapes have straight edges.

Both shapes have vertices.

What is different?

Cubes have 6 square faces.

The square-based pyramid has 1 square face and 4 triangular faces.

Cubes have 12 edges.

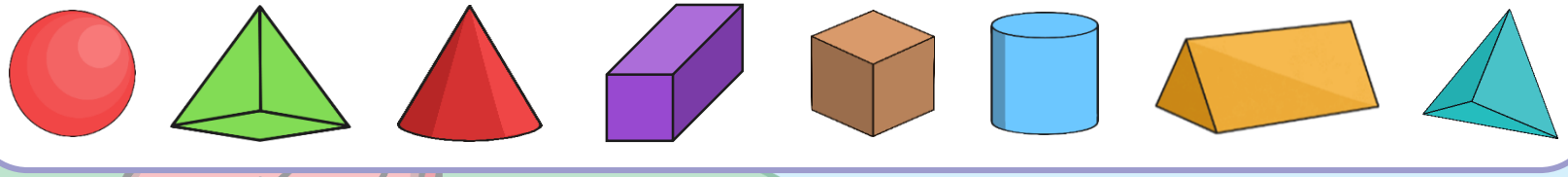
Square-based pyramids have 8 edges.

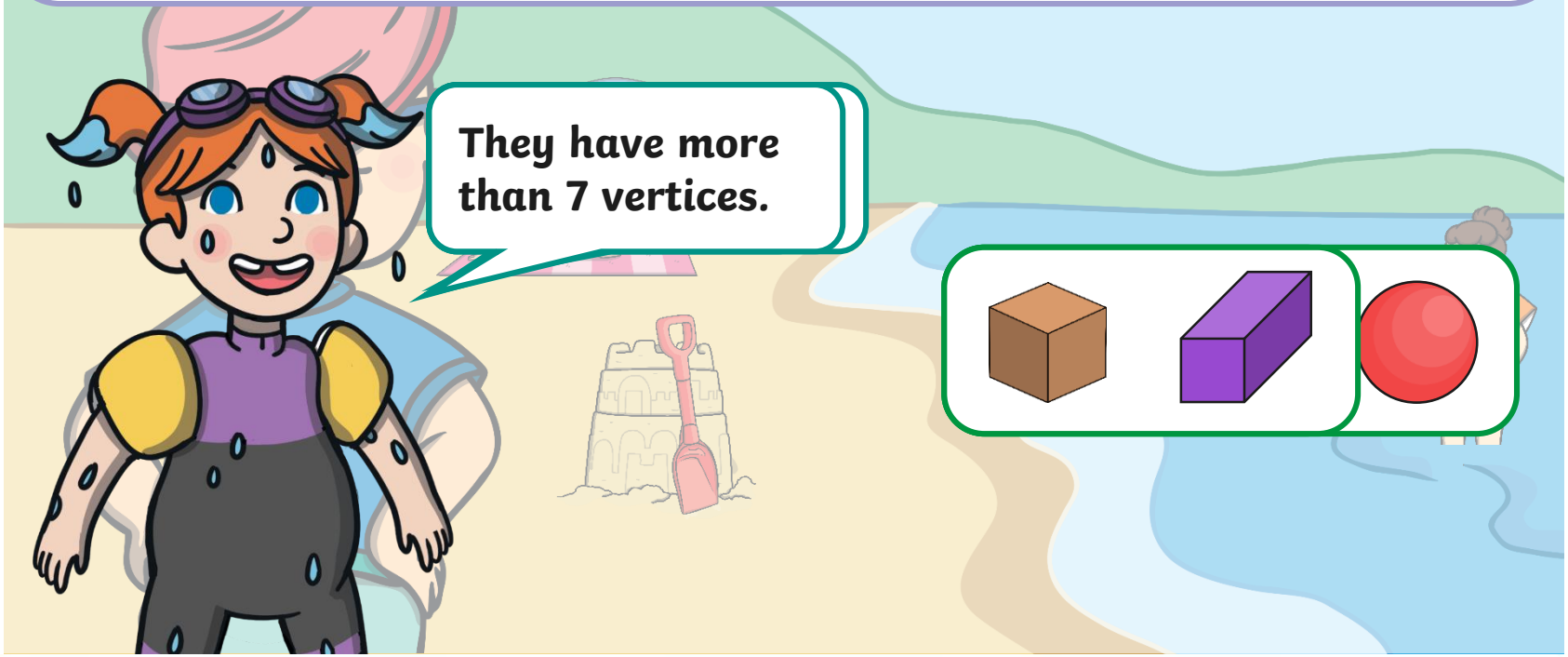
twinkl.com

Find It

Whole Class

Can you find the 3D shapes to match the clues?



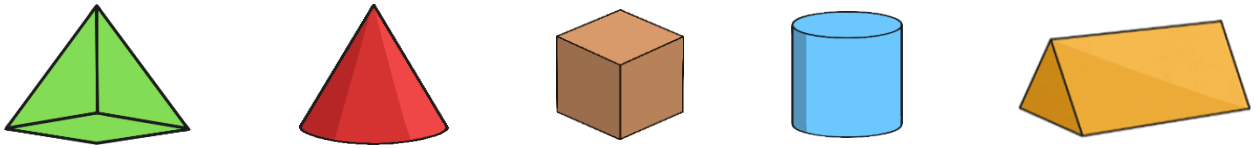


twinkl.com

Sorting 3D Shapes

Whole Class

Can you sort these 3D shapes into the 2 sets?



at least 1 circular face

at least 1 triangular face

Which shape didn't belong in either set?

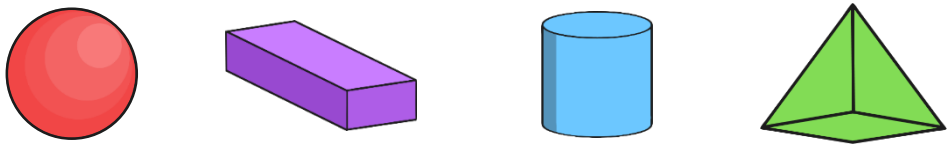
Can you explain why?

twinkl.com

Sorting 3D Shapes

Whole Class

Can you sort these 3D shapes into the 2 sets?



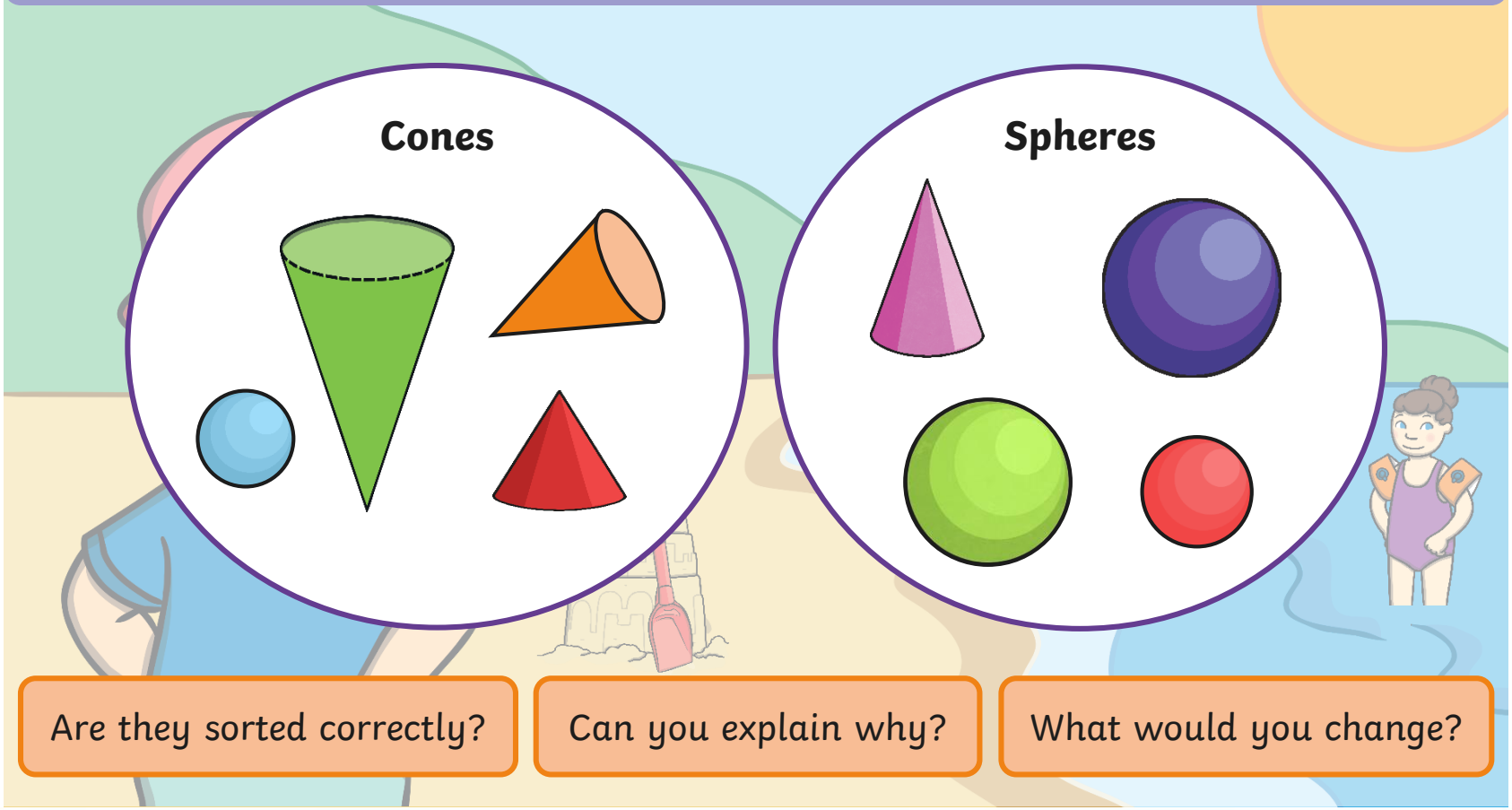
has vertices	has no vertices

twinkl.com

Sorting 3D Shapes

Whole Class

These 3D shapes have been sorted into 2 sets.



Are they sorted correctly?

Can you explain why?

What would you change?

twinkl.com

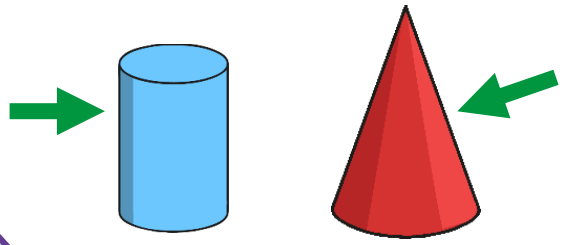
Sorting 3D Shapes

Whole Class

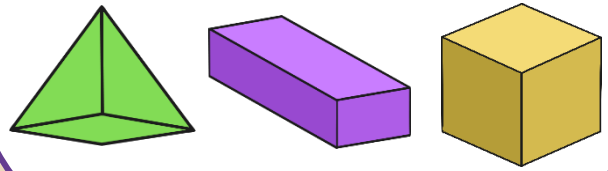
These 3D shapes have been sorted into 2 sets.

How could they have been sorted?

curved surfaces



no straight edges



Can you find another way to describe how these 3D shapes have been sorted?

twinkl.com

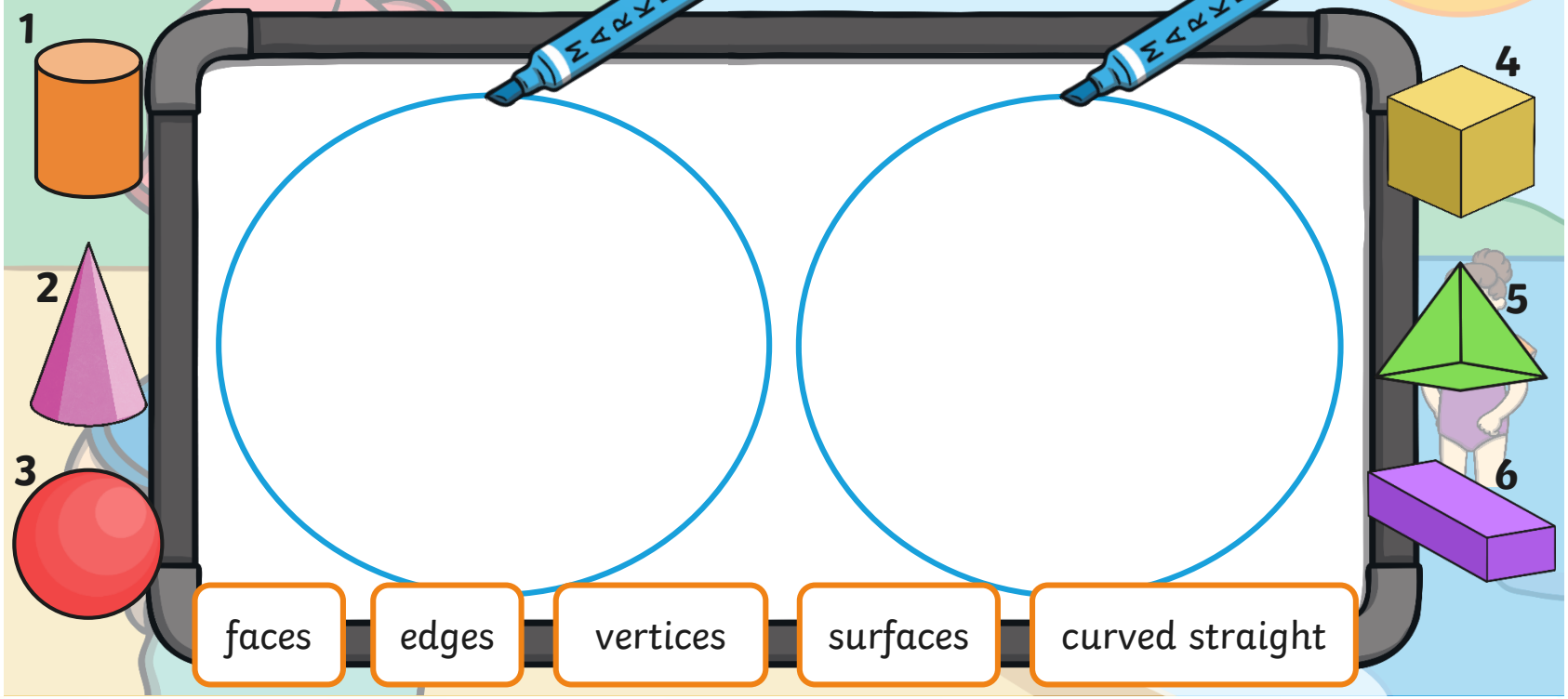
Sorting 3D Shapes

Whole Class

Draw two circles on your whiteboard.

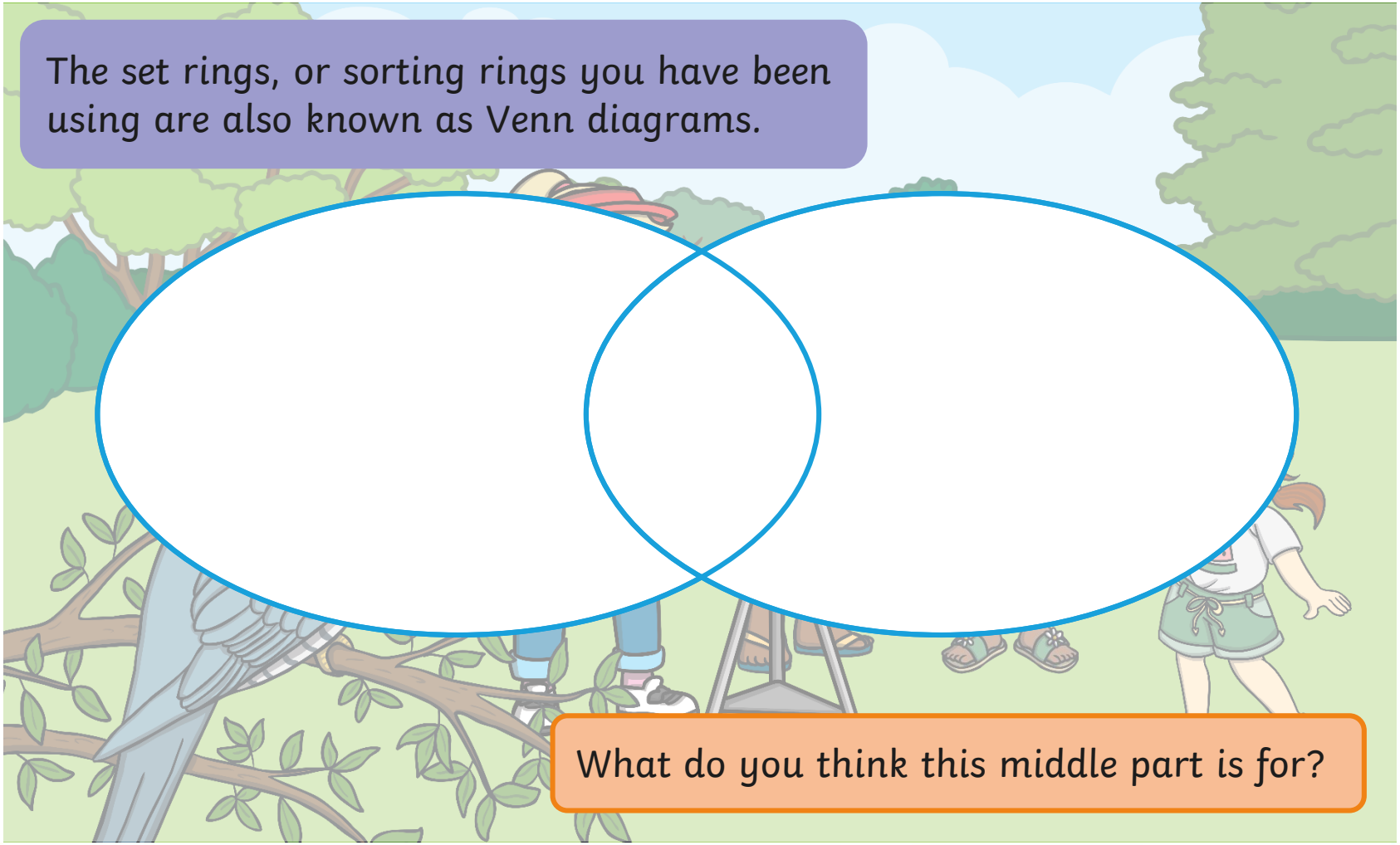
Find a way to sort the 3D shapes.

Explain how you sorted the 3D shapes.



twinkl.com

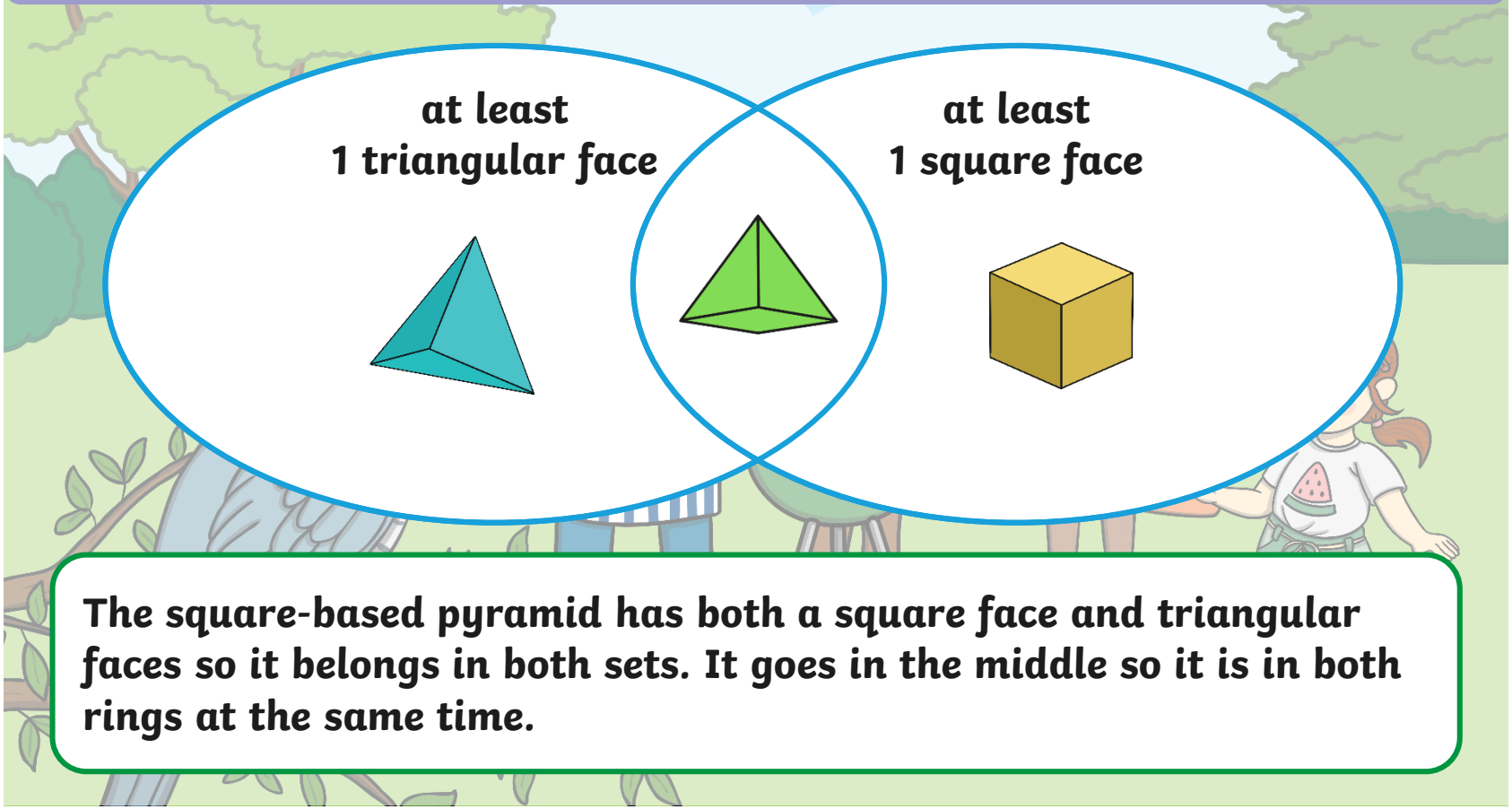
Venn Diagram



twinkl.com

Venn Diagram

Why do you think the square-based pyramid is in the middle?



The square-based pyramid has both a square face and triangular faces so it belongs in both sets. It goes in the middle so it is in both rings at the same time.

twinkl.com

Venn Diagram

Whole Class

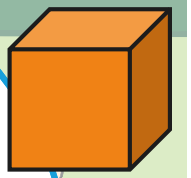
Use the Venn diagram to sort these 3D shapes.

Which shape will you place in the middle?

Can you explain why?

at least 1 square face

at least 1 rectangular face



One cuboid has both square and rectangular faces so it belongs in both sets and needs to go in the middle.

Why did the cylinder stay outside of the rings?

twinkl.com

Venn Diagram

Whole Class

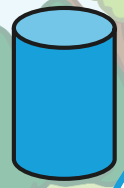
Find different ways to sort the 3D shapes.

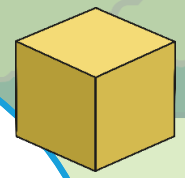
Which shape will you place in the middle?

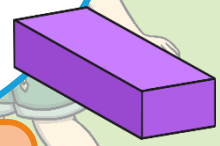
Can you explain why?

?

?







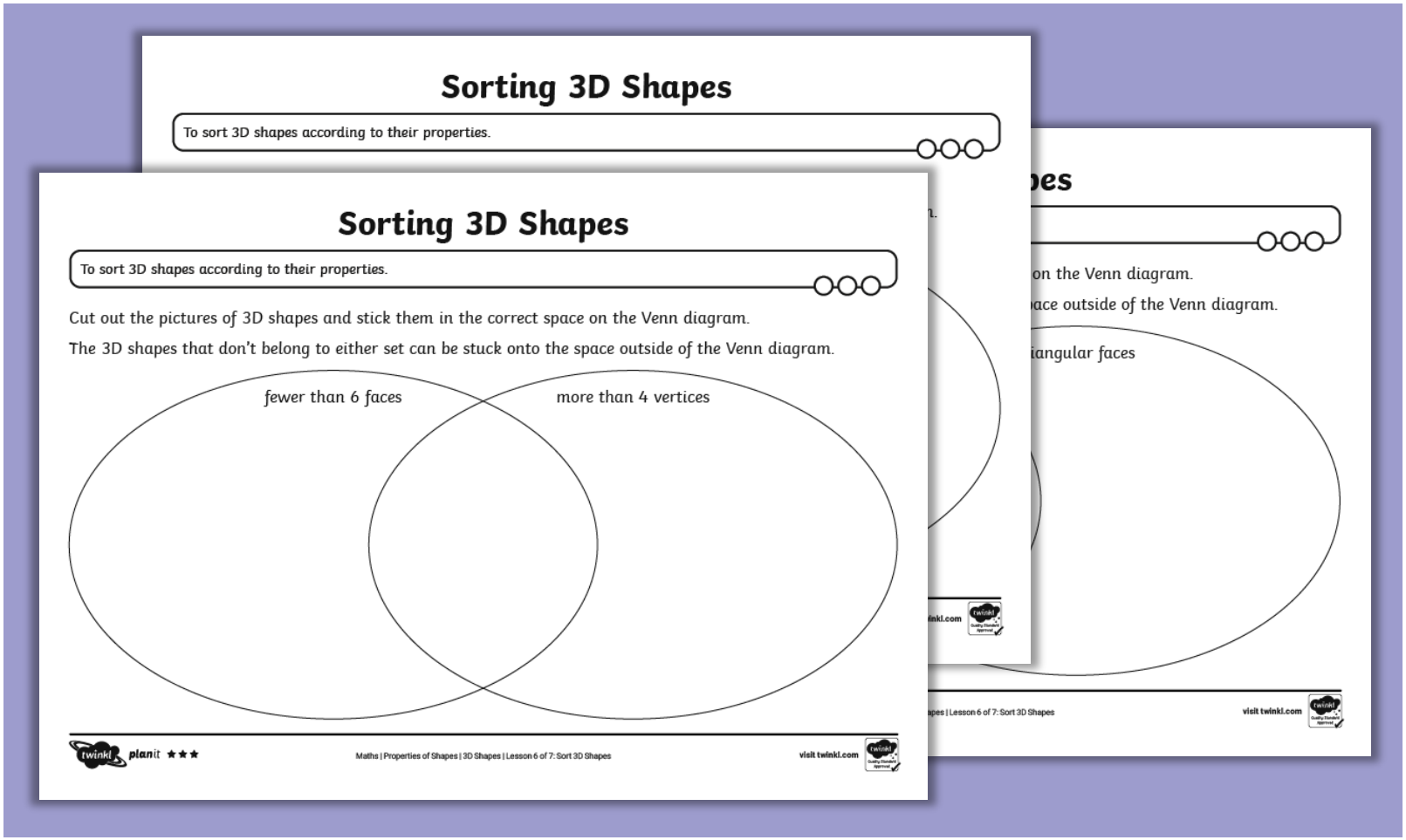
Can you explain how you sorted them?

Do any of the shapes belong in both sets?

Are there any shapes that at don't belong in either set? Where would we place those?

twinkl.com

Branching Out



twinkl.com

Diving into Mastery

Dive in by completing your own activity!

twinkl.com

Sorting Challenge

These objects represent different 3D shapes.
How would you group them?

Use these words to help you:

faces

vertices

edges

curved

flat

Can you think of another way?

twinkl.com

Aim

- To sort 3D shapes according to their properties.

Success Criteria

- I can describe the properties of 3D shapes.
- I can use a Venn diagram to sort 3D shapes.
- I can choose my own criteria to sort 3D shapes.

twinkl.com