Count Vertices on 3D Shapes

Adult Guidance with Question Prompts

Children know that where two or more edges meet there is a vertex; they will be familiar with this term from their 2D shape learning. Children will need four coloured pencils for this activity (any colours). It would help children to have access to these shapes to handle them and count the vertices; they could mark them with a whiteboard pen as they go.

What is a vertex?

What is the word we use for more than one vertex?

What is an apex?

Colour the four boxes at the top using four different colours. Which shapes will you colour to match?

How many vertices does this shape have?

How do you know you have counted accurately?

Will there be two shapes the same colour?

Which ones? Why?

Do all 3D shapes have vertices?

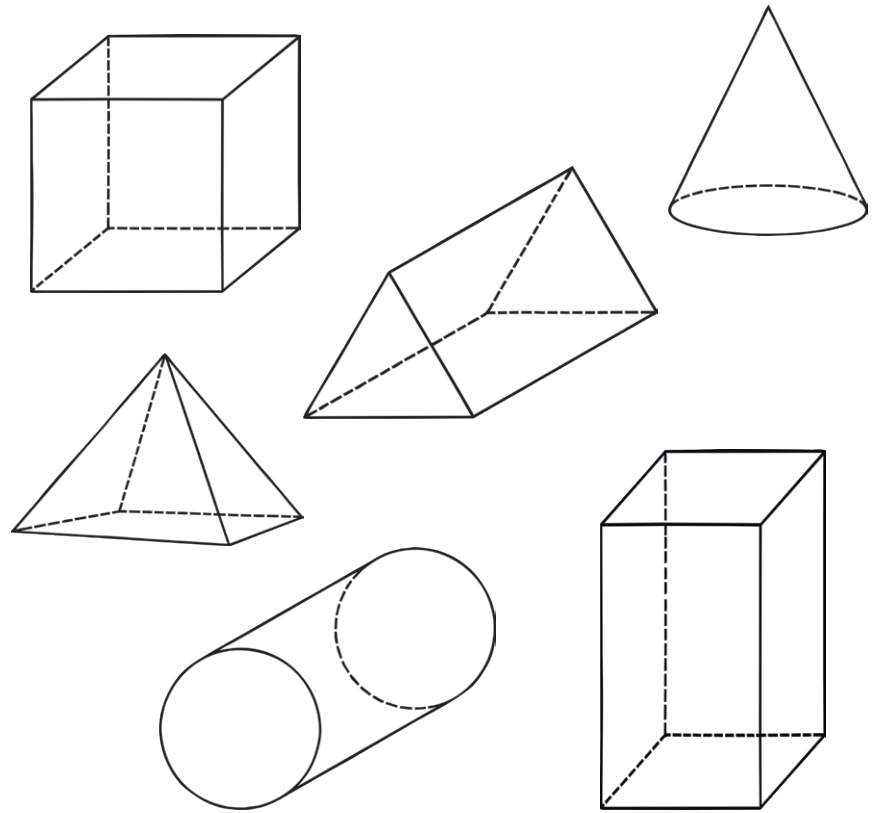
Will you colour all the shapes? Why not?

Can you think of any other 3D shapes with no vertices?

Count Vertices on 3D Shapes

Colour match these 3D shape pictures.

1 apex or vertex	5 vertices	8 vertices	6 vertices



Do all 3D shapes have vertices? Prove it.

Count Vertices on 3D Shapes

Adult Guidance with Question Prompts

This activity explores the misconception of 3D shapes being confused with 2D shapes as they both have vertices. Children may find it helpful to have a selection of 3D shapes to explore when trying to identify one with four vertices.

What do you know about Fran's shape?

What does 3D mean?

What are vertices?

Does a square or a rectangle have four vertices?

Could these be Fran's shape?

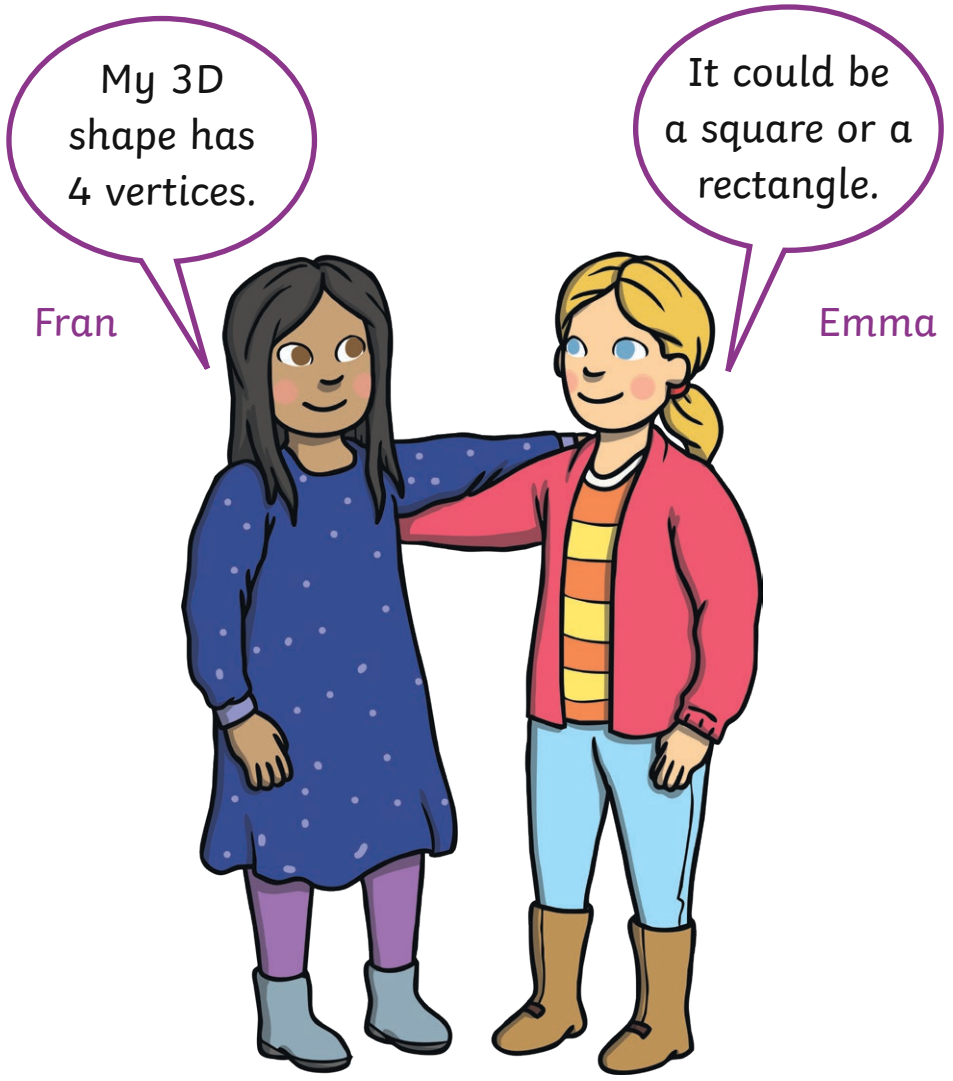
Why not?

What 3D shape has four vertices?

Are there any other possibilities?

Can you give a 3D shape clue like this for a friend to solve?

Count Vertices on 3D Shapes



Do you agree? Explain your answer.

Count Vertices on 3D Shapes

Adult Guidance with Question Prompts

Children sort shapes using their previous knowledge of 3D shape properties. Ideally children will do this sorting practically with 3D shapes they can handle and sorting hoops or a Venn diagram drawn on a piece of paper.

What are these three shapes called?

Tell me about the Venn Diagram.

How are we sorting the shapes?

How many vertices do these shapes have?

What is a face?

How many faces do these shapes have?

What 2D shape are the faces?

What do you know about triangles?

What do you think triangular means?

Which ones have triangular faces?

Where will each shape go?

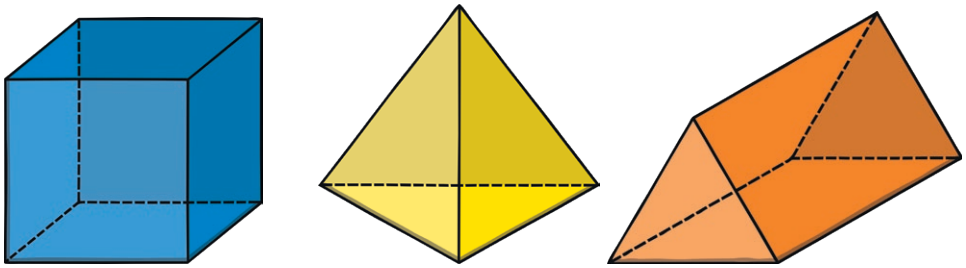
Why?

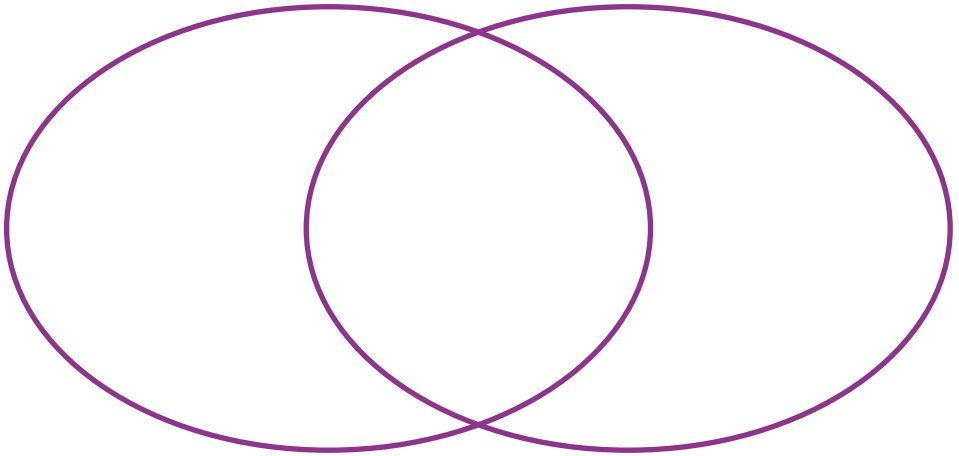
What other 3D shapes could we sort into this diagram?

Explain how you know.

Count Vertices on 3D Shapes

Add these 3D shapes to the Venn diagram.





six or more vertices

at least one triangular face

Do you agree? Explain your answer.

What other 3D shapes could you add to the diagram?