

Count Edges on 3D Shapes

Adult Guidance with Question Prompts



Children need to know that **an edge is where two flat faces meet, or where a flat face meets a curved surface**. It would help if the children can handle examples of these 3D shapes (real life examples like packaging would be good) so they can count the edges, and if possible, mark them using a pen or stickers to ensure accurate counting.

What is an edge?

Can an edge be curved?

Show me an example of a straight edge/curved edge.

How can you count the edges accurately?

How can we make sure we don't count the same one twice?

How many edges does this shape have?

What is the name of the shape?

Are there any shapes with no edges?

Why?

Shapes with one face will have no edges, true or false? Explain.

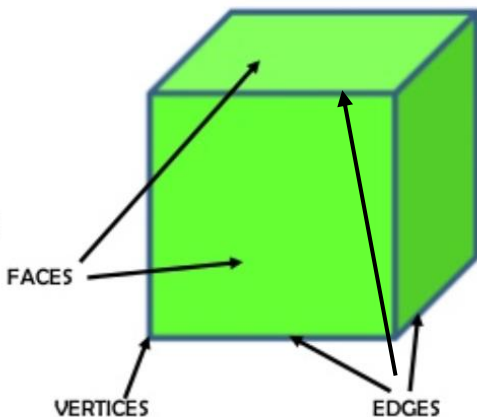
A cone has no edges, true or false? Explain.

BASIC PROPERTIES

FACES, VERTICES and EDGES

3D shapes can be described in 3 ways:

- Faces – the sides of the shape
- Vertices – the corners
- Edges – where the faces meet

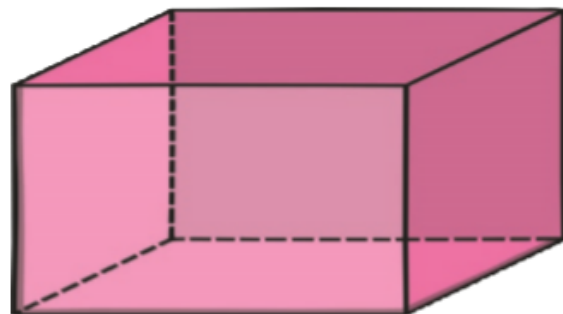
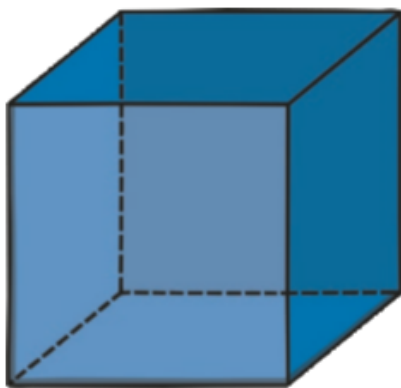
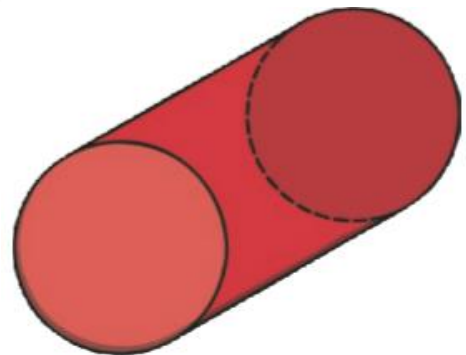
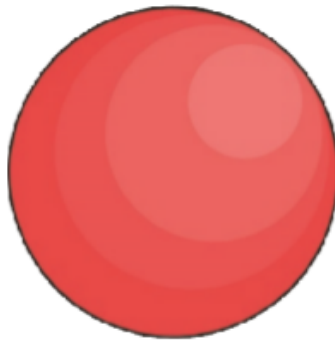
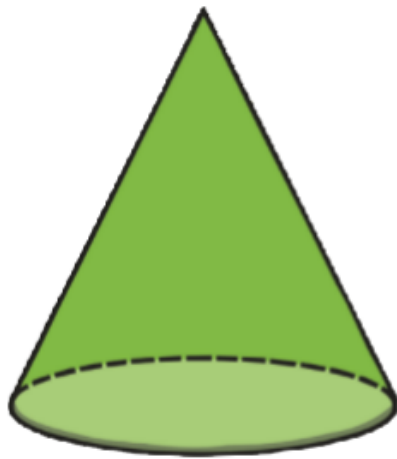


The diagram shows a 3D cube with a light blue front face, a darker blue side face, and a light blue top face. Three arrows point to the faces, labeled 'FACES'. Three arrows point to the corners, labeled 'VERTICES'. Three arrows point to the edges, labeled 'EDGES'.

Count Edges on 3D Shapes



Investigate 3D shapes. How many edges do they have?



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Children read clues about the edges of shapes and try to match them to the options. Some of the clues could describe more than one shape. It would be ideal to have these four shapes for children to look at and count during this activity.

Which shapes are the children describing?

Is there one with only one edge?

How would you describe the edge of that shape?

Is there a shape with 12 edges?

Is there another shape that could fit that clue?

Which shape has no edges?

Which shapes have only straight edges?

Is there another shape that could fit that clue?

Can you write your own clues for some other 3D shapes?

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These four children are describing a chosen shape.

It has one edge that is not straight.

Amna

It has 12 edges.

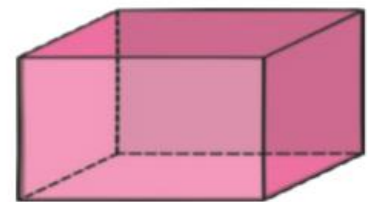
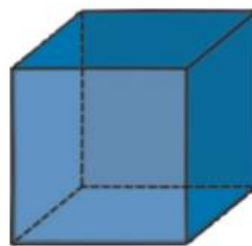
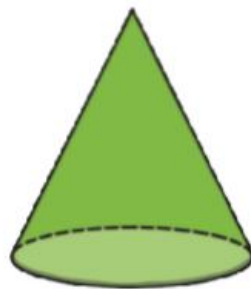
Ben

It has no edges.

Alex

All the edges are straight.

Shan



Match the children to the shape they are describing.

Is there more than one possible answer? Why?



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Children count the number of edges on 3D shapes and order them starting either with the fewest or most edges. Children will benefit from having these shapes to handle in this activity, as well as a selection of others with different numbers of edges.

How many edges do each of these shapes have?

Will you order them starting from the fewest edges or the most edges?

Which will come first, second, etc?

I think the triangular prism will come last, am I right? Why/why not?

What shape could come next in your sequence after these four?

Why?

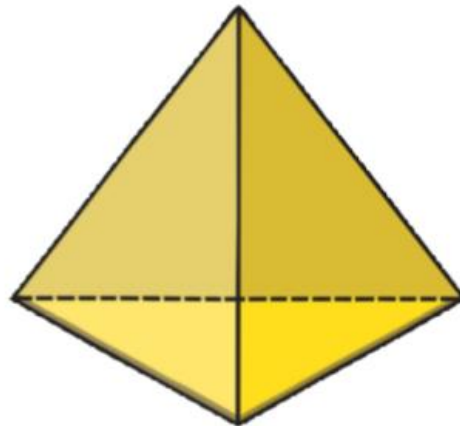
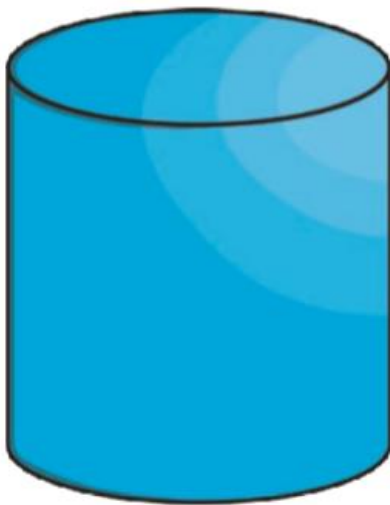
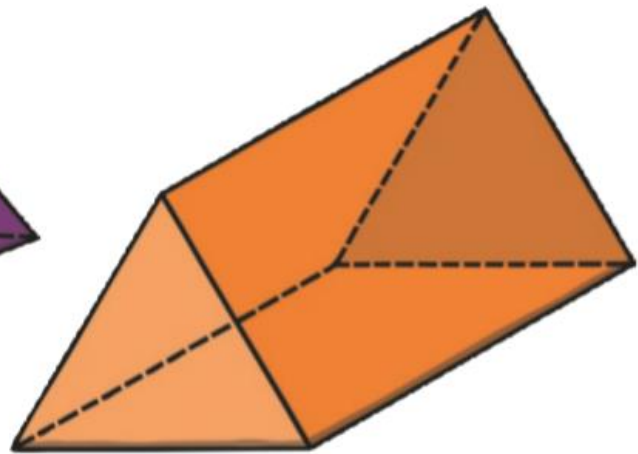
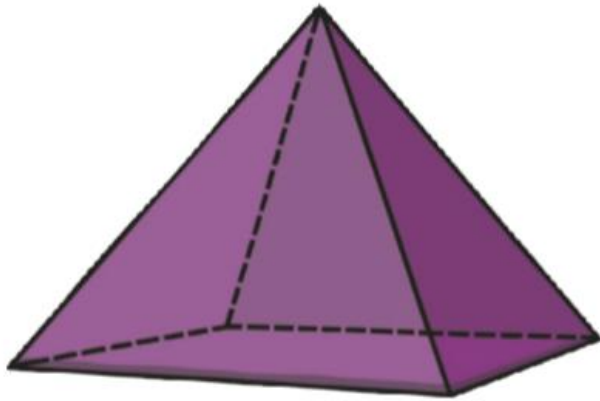
Can you name all these shapes?

A shape always has more edges than faces, true or false? Explain your answer.

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Put these shapes in order based upon the number of edges they have.



What could the next shape in the sequence be?