Maths

3D Shapes

Session 1

Today we are looking at shapes.

What 2D shapes can you remember?

Do you know any different shapes?

There are 3D shapes also!

What is a 3D shape?

Look at the following video

https://www.bbc.co.uk/bitesize/clips/zps34wx

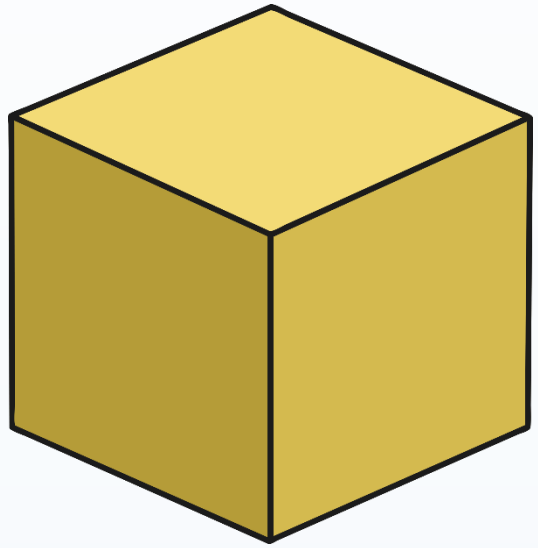
Here are some 3D shapes

What do you know about them?

Cube

Cubes have:

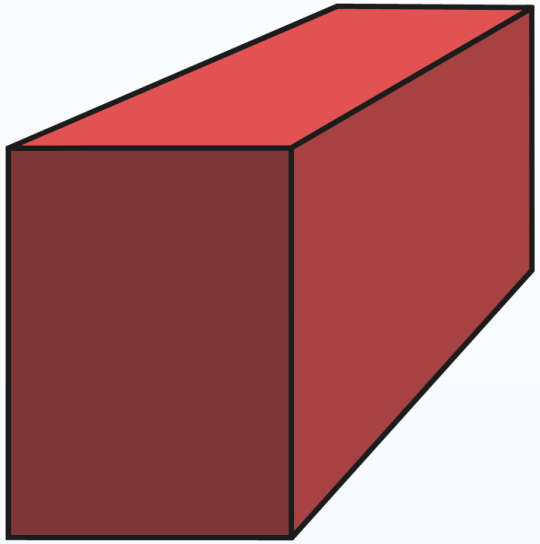
- 6 faces;
- 12 edges
- 8 vertices;
- edges that are all the same length.



Cuboid

Cuboids have:

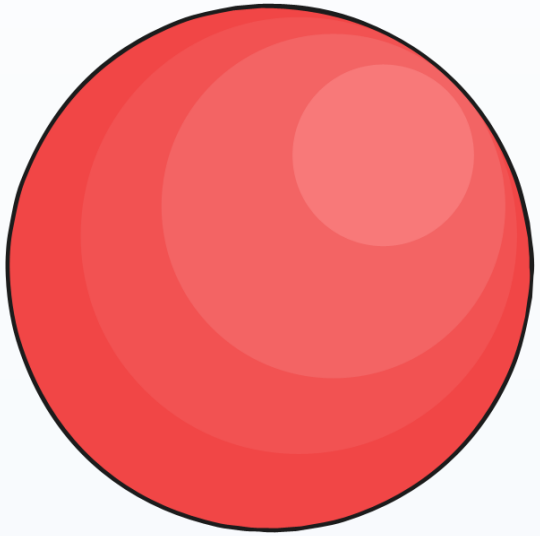
- 6 faces;
- 12 edges
- 8 vertices;
- edges that are **not** all the same length.



Sphere

Spheres:

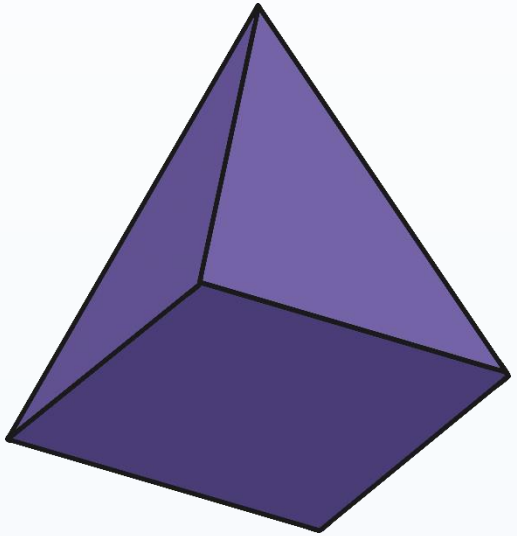
- are perfectly round;
- have no edges;
- have no vertices.
- 1 curved surface



Square-Based Pyramid

Square-based pyramids have:

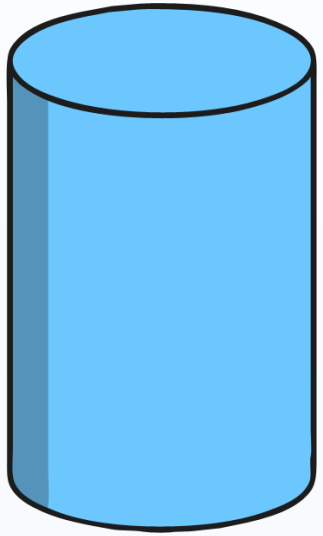
- a square base;
- 4 triangular faces that make a sharp point;
- 5 faces.



Cylinder

Cylinders have:

- 2 flat and circular faces;
- 1 curved surface;
- **no** vertices.



Lets go on a shape hunt

Which 3D shapes can you see?

Faces

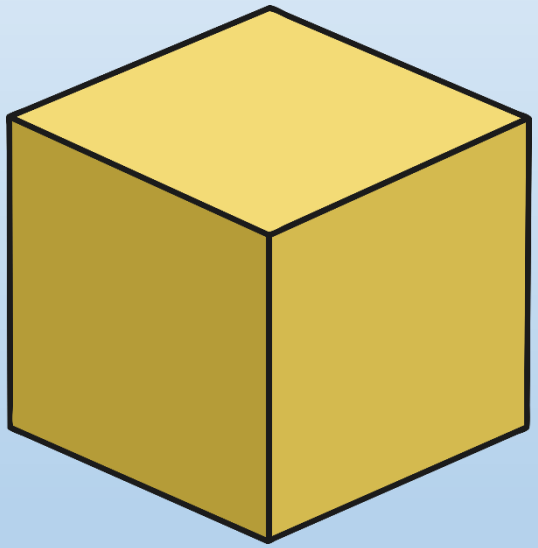
What does this mean?

Faces is the surface of a shape.

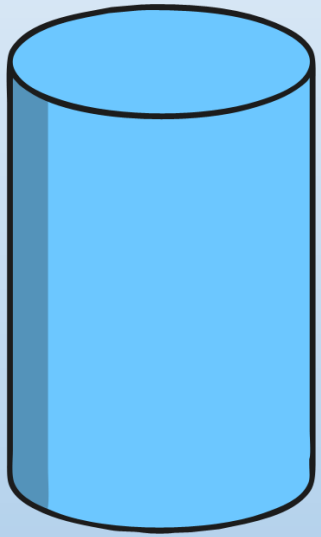
Use the shapes on your table to count the number of faces on each 3D shape.

Lets do a cube together.

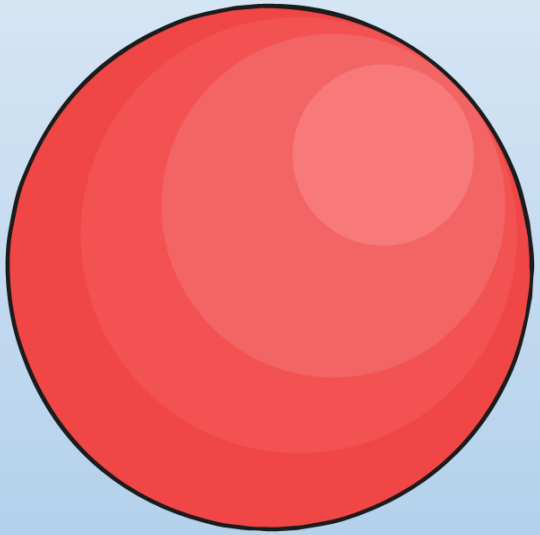
Which shape face do the following 3D shapes have?



Which shape face do the following 3D shapes have?

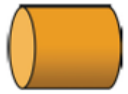
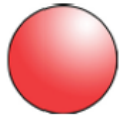


Which shape face do the following 3D shapes have?



Task

Properties of 3D shapes

3D Shape	Name	Number of faces	Numbers of vertices	Number of straight edges	Number of curved edges
					
					

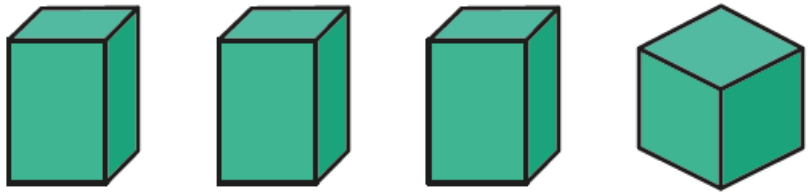
Complete the following part of the table:

- Name of shape
- Number of faces

Challenge

Circle the odd one out and complete the sentence.

a)

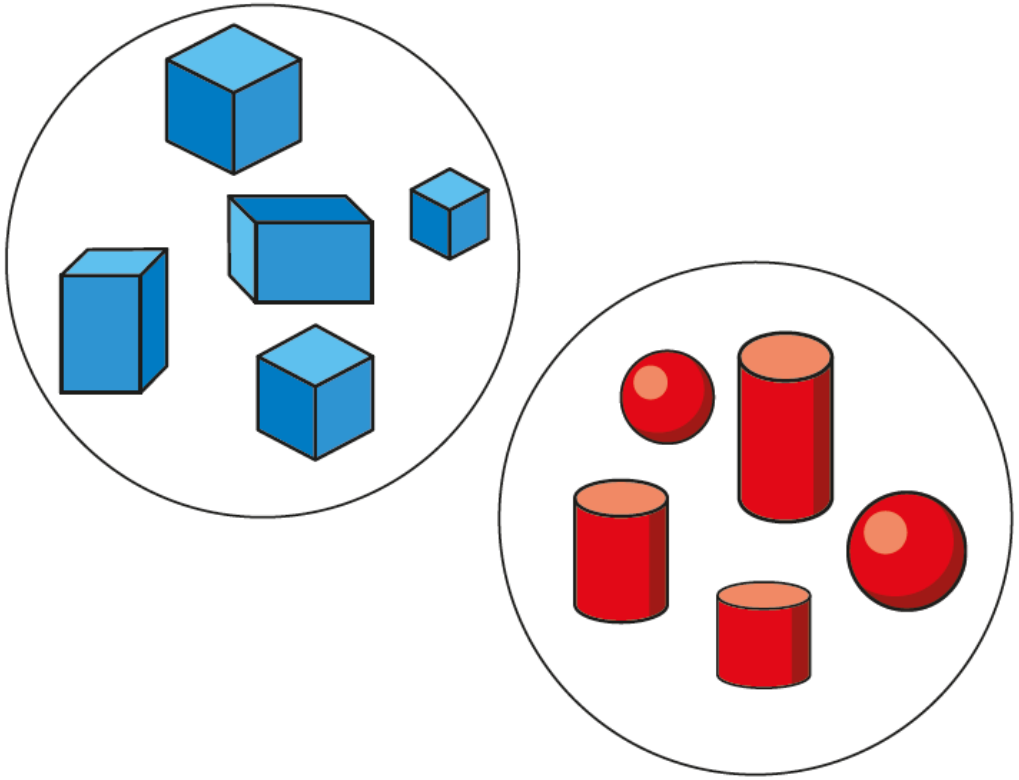


The odd one out is a _____.

b)

The odd one out is a _____.

How have the shapes been sorted?



Session 2

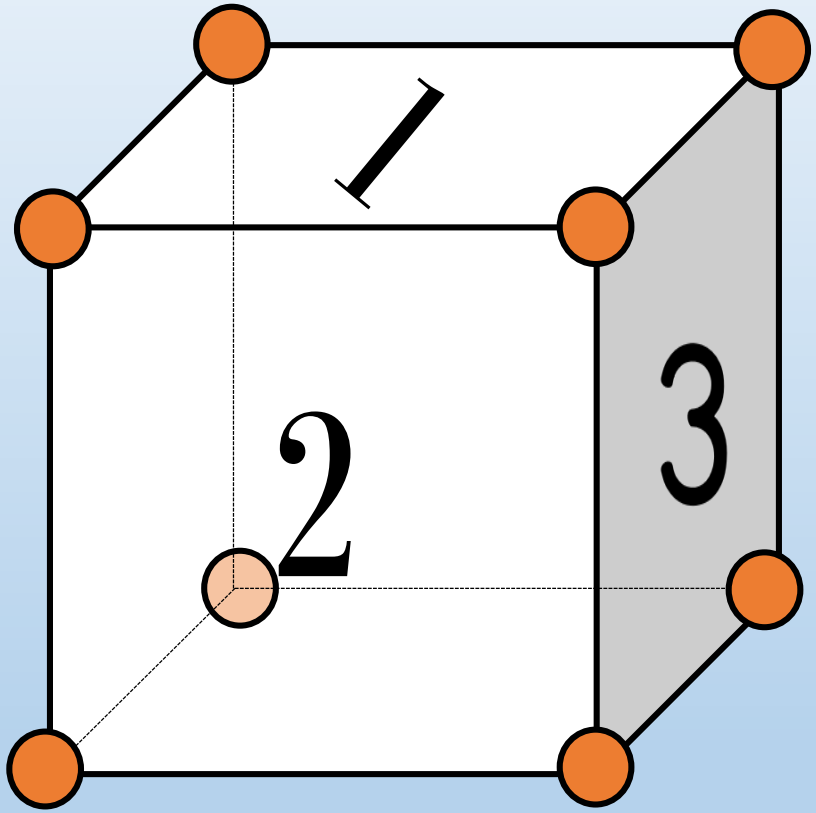
Recap:

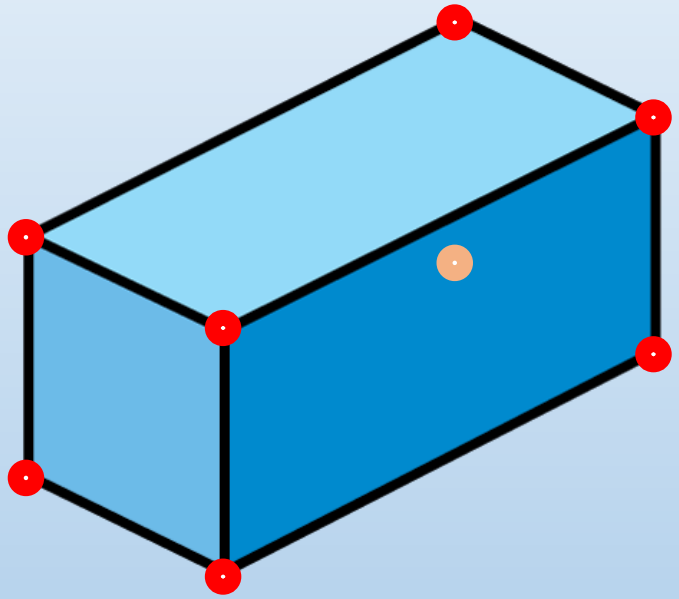
Which 3D shapes can you remember?

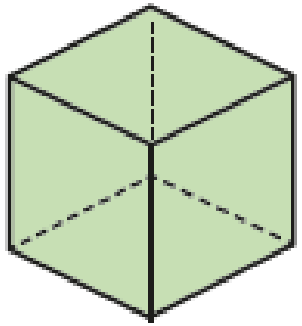
What are faces?
What are edges?
What are vertices?

https://www.bbc.co.uk/bitesize/topics/zjv39j6/articles/zgqpk2p

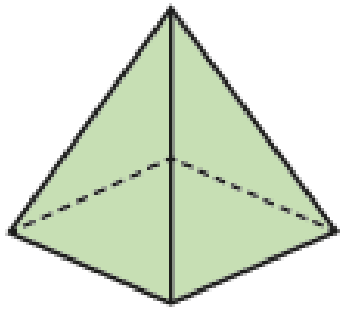
Today we are focusing on number of vertices each shape has


1
2
3





vertices



vertices

Task

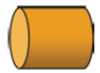
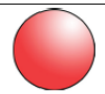
At your table, see if you can work out the number of vertices for each of the shapes.

Make sure you count them all and don't count them more than once!

When you are confident, you can complete this part of your sheet:

- Number of vertices

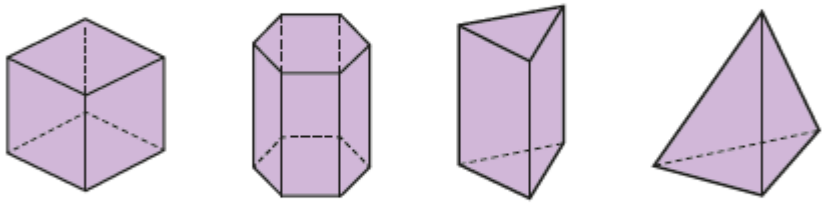
Properties of 3D shapes

3D Shape	Name	Number of faces	Numbers of vertices	Number of straight edges	Number of curved edges
					
					

Challenge

Write the shapes in order of the number of vertices.

Start with the shape that has the fewest vertices.



A B C D

fewest most

_____ _____ _____ _____

Complete the sentences.

more fewer

a) A cube has _____ vertices than a sphere.

b) A sphere has _____ vertices than a cone.

Session 3

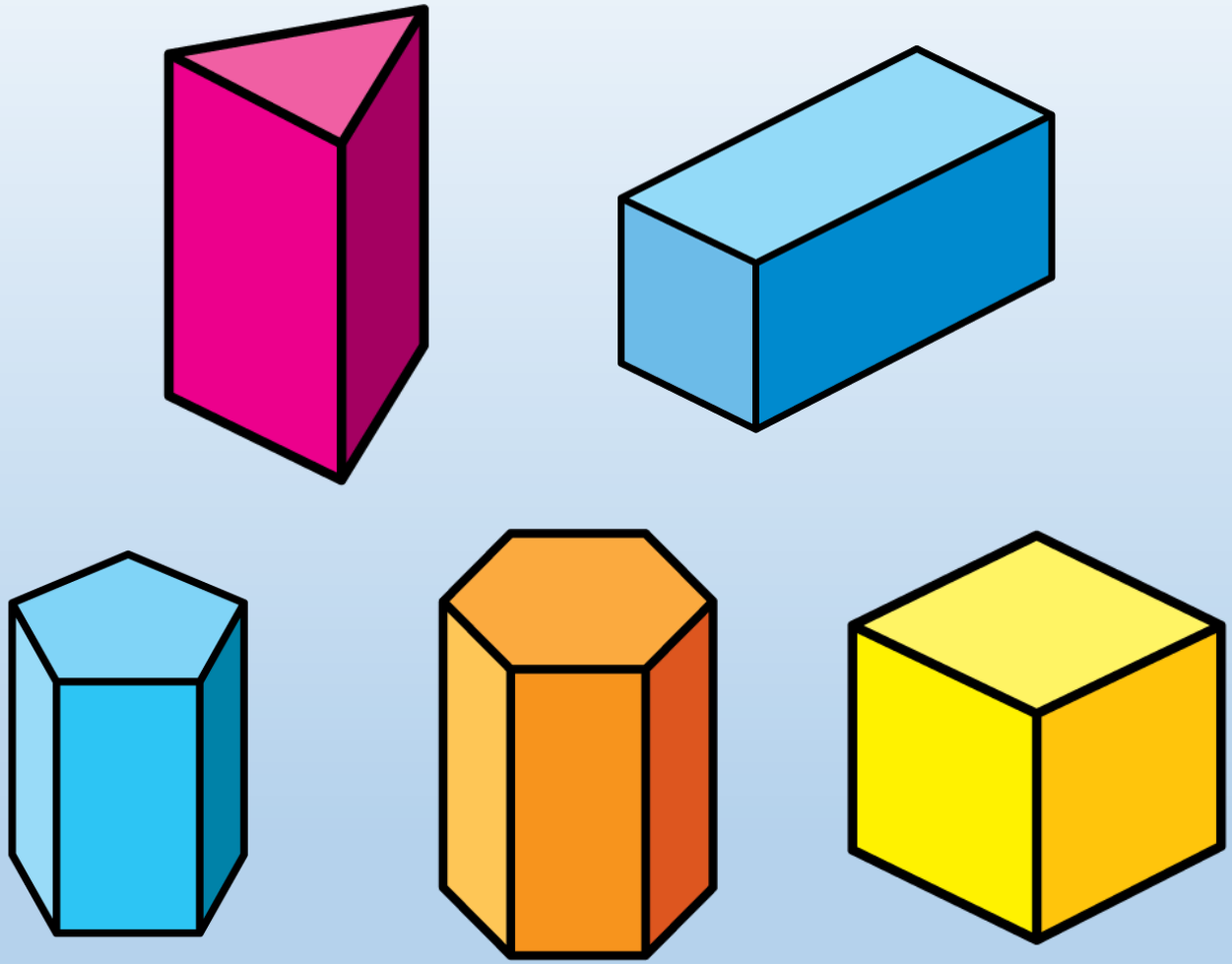
Which 3D shapes can you remember?

What is a face?

What is an edge?

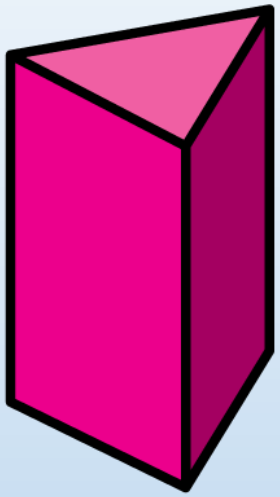
What are vertices?

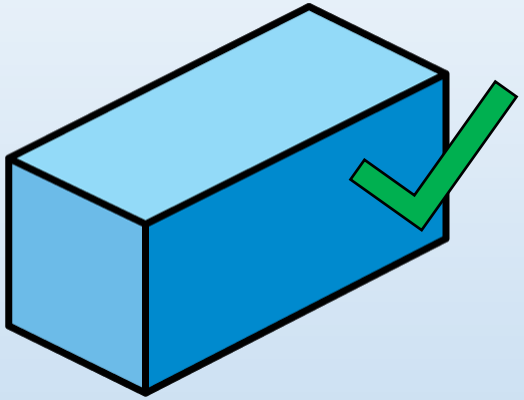
Which shapes have 6 faces?



Which shapes have 6 faces?

5





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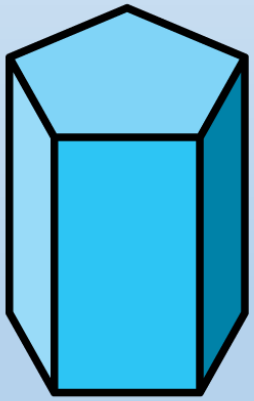

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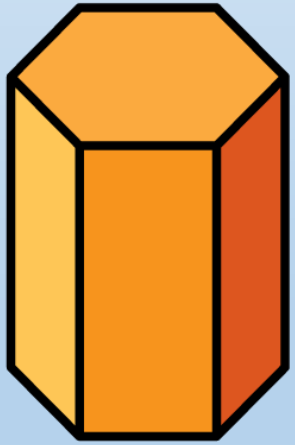
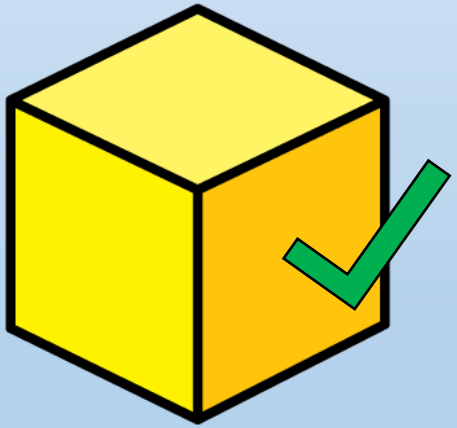
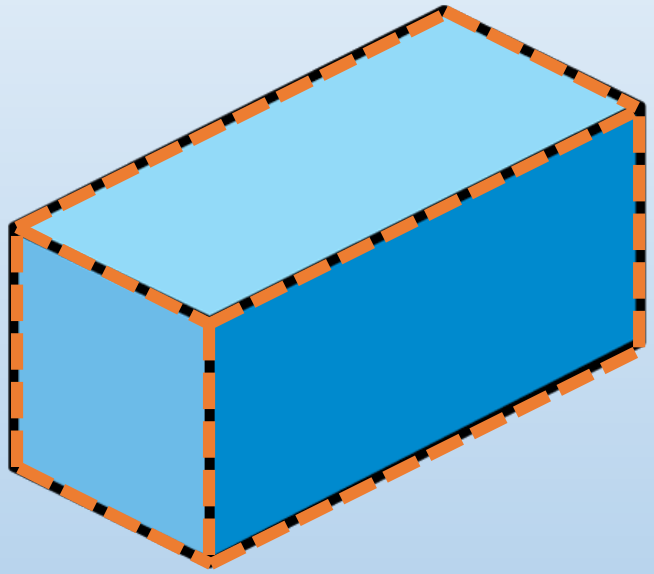


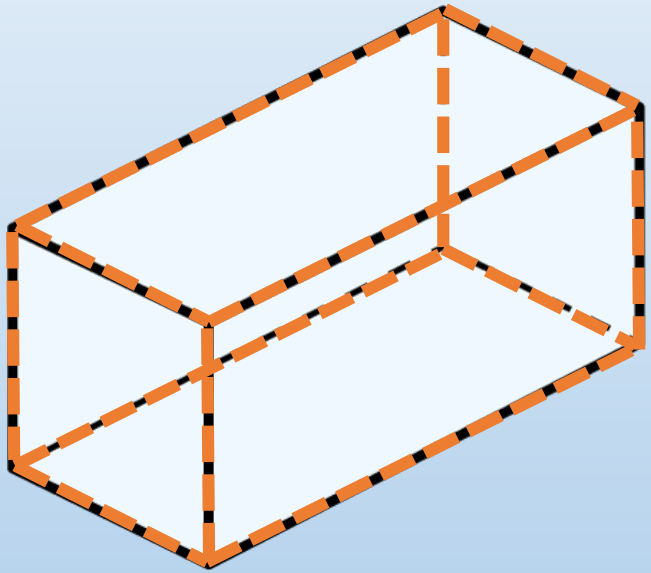




Faces 6

Edges ?

I think a good idea would be to work from the top down



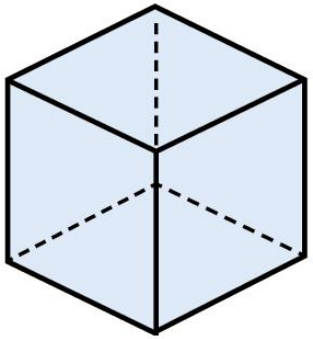
Faces 6

Edges 12

Count edges on 3D shapes

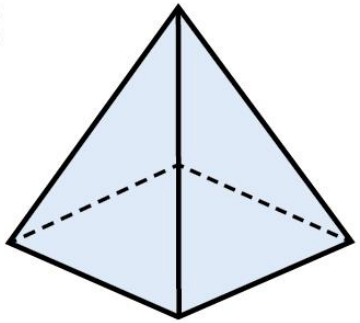
1 How many edges does each shape have?

a)



☐ edges

b)



☐ edges

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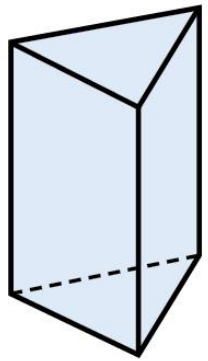
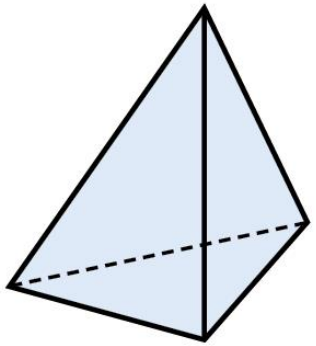
1 c)



☐ edges

d)



☐ edges

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Task

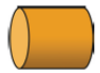
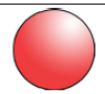
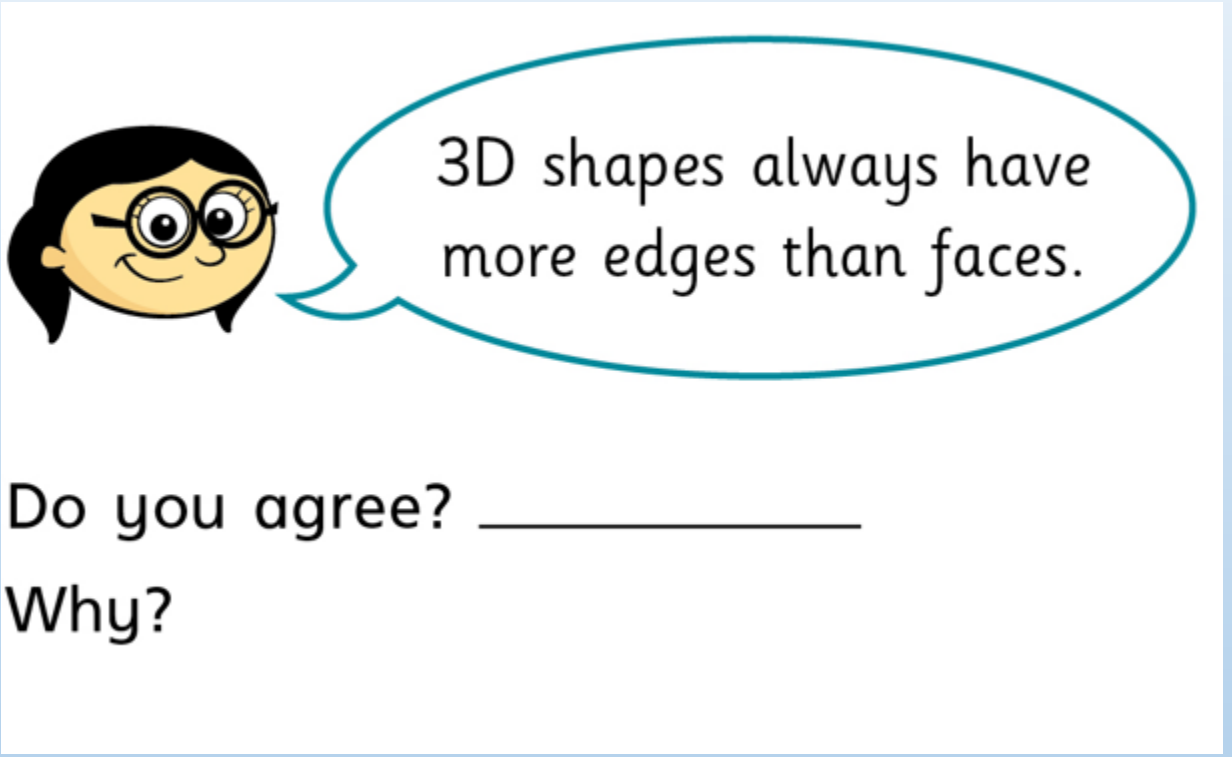
At your table, see if you can work out the number of edges for each of the shapes.

Make sure you count them all and don't count them more than once!

When you are confident, you can complete this part of your sheet:

- Straight edges
- Curved edges

Properties of 3D shapes

3D Shape	Name	Number of faces	Numbers of vertices	Number of straight edges	Number of curved edges
					
					

Challenge