

Week beginning 18/05/2020

Maths Week 5

Remember - Do what you can. These activities are for the week.

If you feel like you are up for the extra challenge, BBC Bitesize have new daily lessons for English and Maths on their website. These are specific for each year group. You also have the online White Rose Maths that have daily Maths lessons and the new Maths Shed resource. Both of these are excellent resources and you will be able to extend this work on shape through them.

The following is learning you would have been doing at school with us.

Starters - try doing one every day:

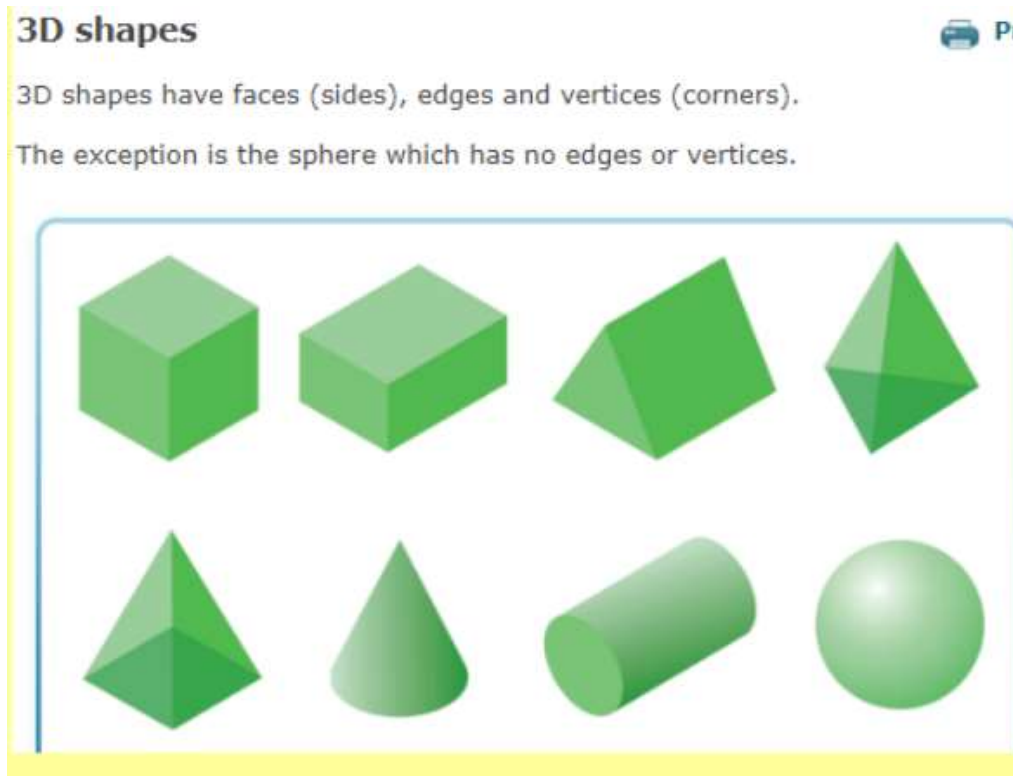
These starters are objectives that you have learnt in Year 5.

- Revise times tables and all related division facts.
- Pick a number between 0 and 20 or 20 and 100. Now double that number. Now try halving that number. Use partitioning to help you. Repeat with 10 other numbers.
- Write equivalent fractions and decimals for: 25%, 50%, 75%, 33%, 89%, 90%, 2%, 8% and 16%.
- Find  $\frac{1}{2}$ ,  $\frac{1}{4}$  and  $\frac{1}{10}$  of: 20, 36, 40, 60, 66 and 72.
- Multiply these numbers by 10, 100 and 1000: 6, 17, 26, 59, 66 and 101.  
Can you remember the rules? Write them down. You can use the squares below to move the digits if you need to.

## Shape Week 2

L.O. To identify the properties of prisms and pyramids.

### Knowledge:



My turn, your turn, our turn....

*A surface of a 3D shape is called a face.*

*The edge is the line where two faces of a 3D shape meet.*

*A vertex is a point on a 3D shape where 3 or more of its faces meet.*

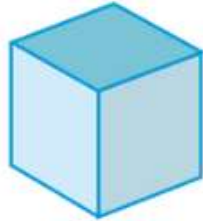
*(Vertices is plural)*

## Regular polyhedron

Faces of a regular polyhedron are regular polygons of the same shape and size. E.g. all the faces of a cube are squares.



regular tetrahedron



cube



regular octahedron



regular dodecahedron



regular icosahedron

## Pyramids

A pyramid is a polyhedron with triangular sides that meet at a point. The base of a pyramid is a polygon.

If this is a regular polygon, the pyramid is called a regular pyramid. E.g. triangle pyramid, square based pyramid, pentagonal pyramid.



triangular pyramid



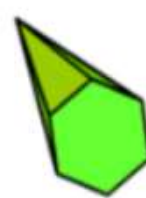
square pyramid



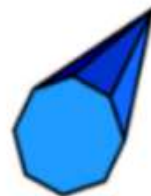
rectangular pyramid



pentagonal pyramid



hexagonal pyramid



octagonal pyramid

A pyramid is named after the shape of the base as you can see from the above. The number of triangular faces the shape has, depends upon how many edges the polygon shape at the

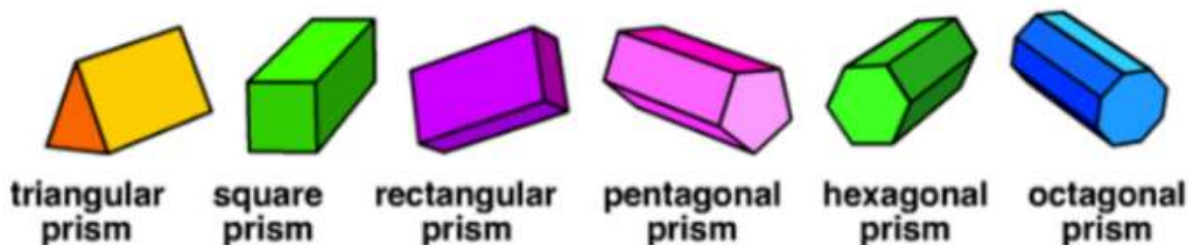
bottom has. For e.g. A pentagonal pyramid has a pentagonal base with 5 edges, therefore it will have 5 triangular faces meeting at a point (one triangular face attached to each edge of the pentagonal face).

Your Turn:

A pyramid is a polyhedron with triangular sides that meet at a point. The base of a pyramid is a polygon.

## Prisms

A prism is a polyhedron that has two faces the same shape that are parallel to each other. E.g. cuboid, cube, triangular prism, cylinder.



The other faces in a prism are always rectangular faces. The rectangular faces are all joined to one edge of the two faces that are parallel to each other.

E.g. A triangular prism, has 2 triangular faces that are parallel to each other. It then has 3 rectangular faces attached to each edge of the triangular faces, which go from one triangular face to the other.

Therefore, the number of rectangular faces a prism has depends upon how many edges the faces that are parallel to each other have.

Yes, this is still true about a cylinder. The circular faces have one edge going all the way round, with one, wide rectangular face going all the way round. If you opened the shape up, it would show one rectangular face.

Your Turn:

## Prisms

A prism is a polyhedron that has two faces the same shape that are parallel to each other. All of the other faces are rectangles. E.g. cuboid, cube, triangular prism, cylinder.

### Task 1:

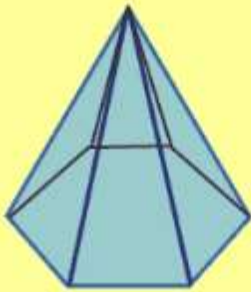
Complete this table:

Pyramid	polygon shape of base	Number of triangular faces meeting at a point.
Triangular pyramid		
Square-based pyramid		
Rectangular pyramid		
Pentagonal pyramid		
Hexagonal pyramid		
Octagonal pyramid		

### Task 2:

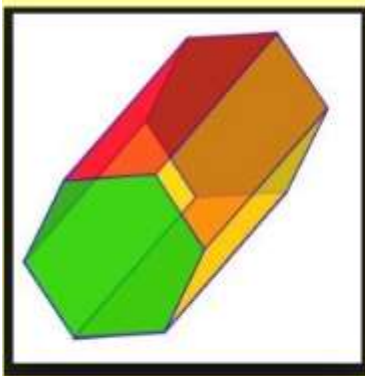
Prism	Shape of the 2 faces that are parallel to each other	Number of rectangular faces
Cylinder		
Triangular prism		
Cube		
Cuboid		
Pentagonal prism		
Hexagonal prism		
Octagonal Prism		

Task 3:



*What is this pyramid called?  
Can you explain why?*

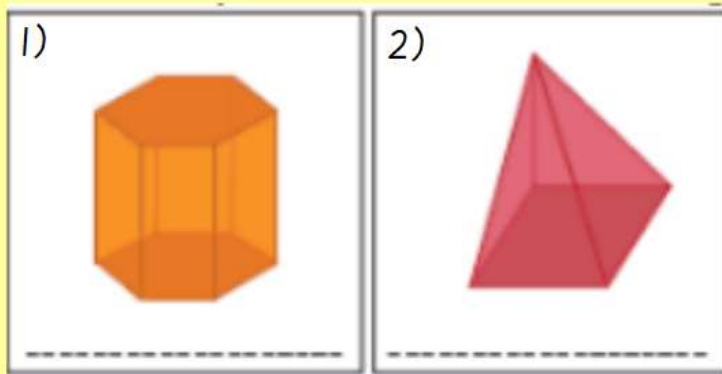
Task 4:



*Describe this prism.  
Why is it a prism?*

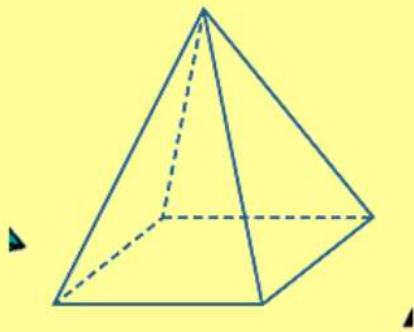
Task 5:

Identify these shapes - are they prisms or pyramids?  
Explain why?



Task 6:

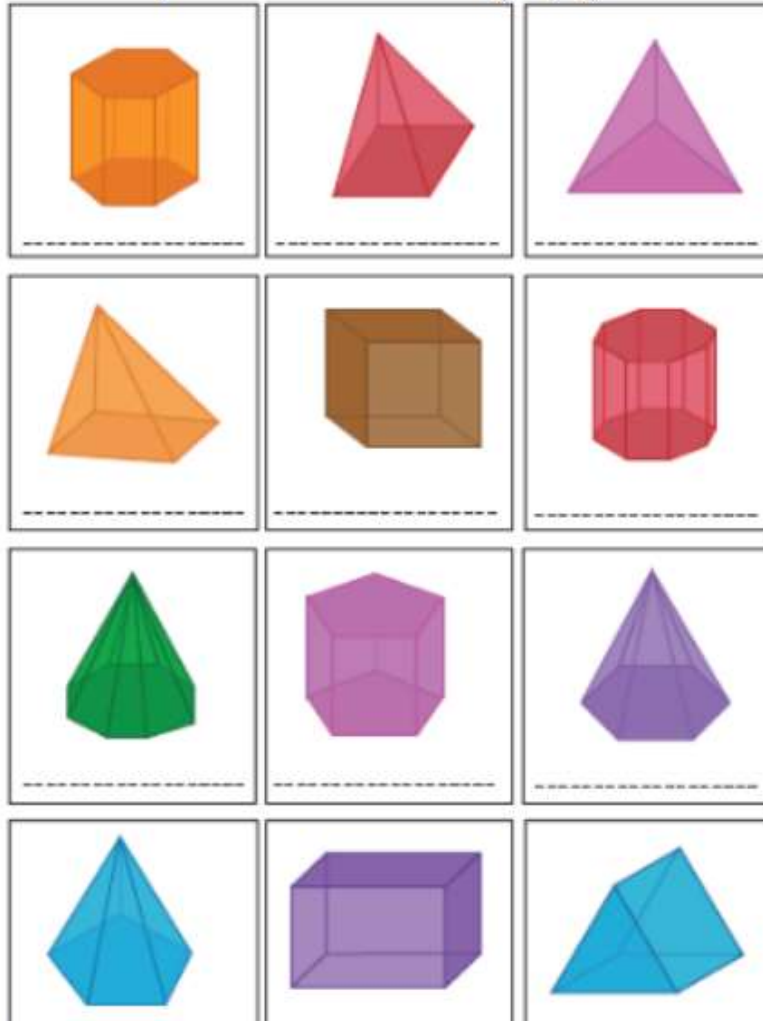
Why is this shape not a prism? Give reasons.



Task 7:

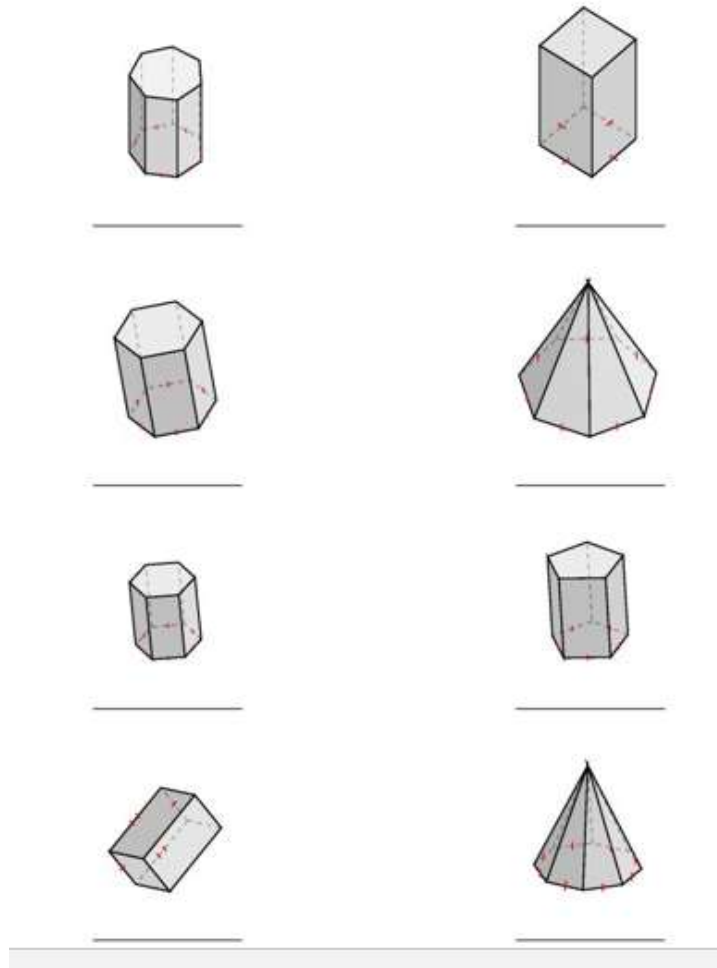


Identify these shapes - are they pyramids? Prisms?



Task 8:





Cut out these shapes and use them for the task below.

Or number them and organise them into the table.

See if you can name all of these shapes.

*Create a table and sort the shapes into pyramids and prisms.*

Pyramid	Prism

*E4E - Write a definition for pyramid and prisms.*

Answers:

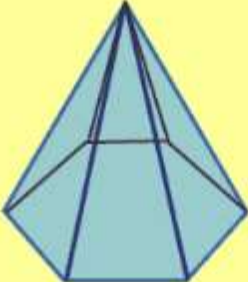
Task 1:

Pyramid	Polygon face of base	Number of triangular faces meeting at a point.
Triangular pyramid	Triangular face	3
Square-based pyramid	Square face	4
Rectangular pyramid	Rectangular face	4
Pentagonal pyramid	Pentagonal face	5
Hexagonal pyramid	Hexagonal face	6
Octagonal pyramid	Octagonal face	8

Task 2:

Prism	Shape of the 2 faces that are parallel to each other	Number of rectangular faces
Cylinder	Circular faces	1
Triangular prism	Triangular faces	3
Cube	Square faces	4
Cuboid	Square/rectangular faces	4
Pentagonal prism	Pentagonal faces	5
Hexagonal prism	Hexagonal faces	6
Octagonal Prism	Octagonal faces	8

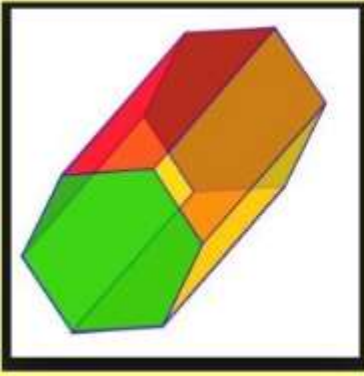
Task 3:



*What is this pyramid called?  
Can you explain why?*

This pyramid is called a hexagonal pyramid. This is because the base of the shape is a hexagonal face shape. It also has 6 triangular faces that meet at a point.

Task 4:



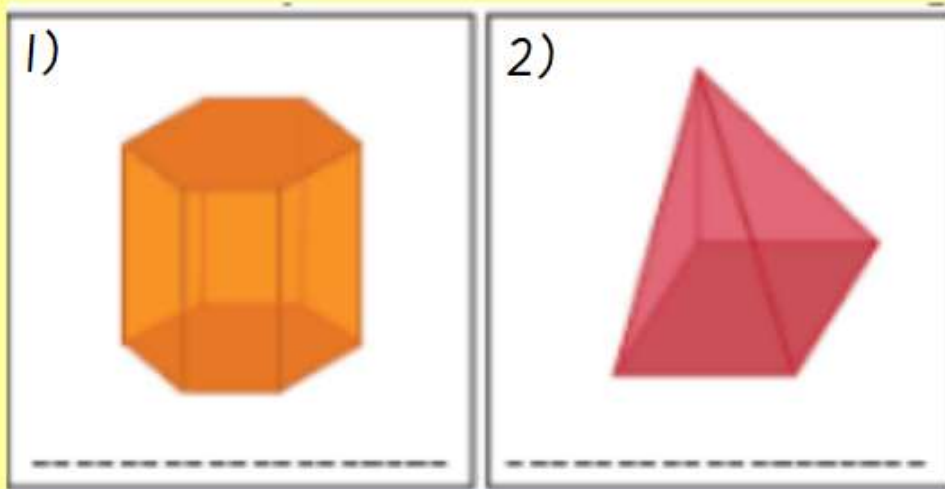
Describe this prism.  
Why is it a prism?

It has 2 faces that are the same shape, that are parallel to each other. All the other faces are rectangular faces.

It is a hexagonal prism because the 2 faces that are the same as each other are hexagonal shapes and it has 6 rectangular faces.

#### Task 5:

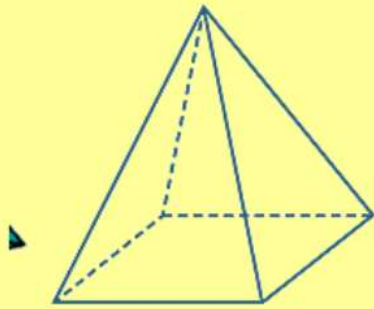
Identify these shapes - are they prisms or pyramids?  
Explain why?



- 1) This shape is a hexagonal prism – See above.
- 2) This shape is a square-based pyramid because it has a square face as the base, and it has 4 triangular faces meeting at a point.


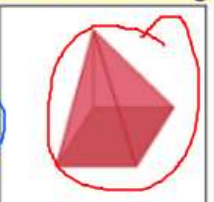
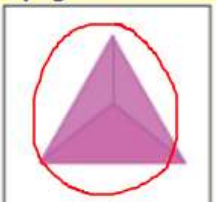
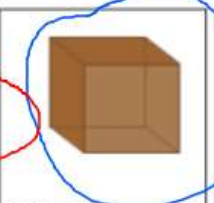
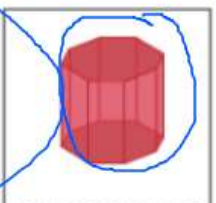

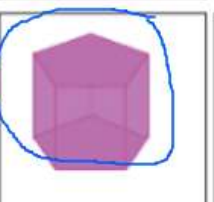


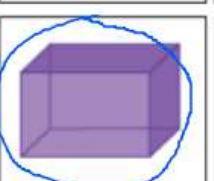
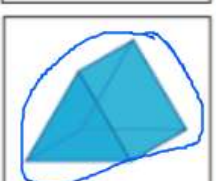
Task 6:

Why is this shape not a prism? Give reasons.



This shape is not a prism because it does NOT have 2 faces that are the same shape parallel to each other. It also has no rectangular faces.

Task 7:

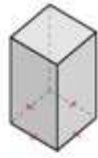
		
		
		
		

Pyramid  
Prism

Task 8:



heptagonal prism



square prism



hexagonal prism



heptagonal pyramid



hexagonal prism



pentagonal prism



rectangular prism



octagonal pyramid