## Week 3 <br> Properties of Shape (2D and 3D)

Message to Parents:
The following slides are organised into three different levels of challenge (Bronze, Silver and Gold). If no level is provided it should be appropriate for everyone to access.
Please ensure your child chooses the appropriate level. It is okay for the children to change their level through out the week depending on the task. These tasks can be done over the whole week and can be carried out at the child's own pace.
Feel free to provide additional questions for your child to complete.

## Multiplication Recap

| $10 \times 4=$ | $3 \times 10=$ | $6 \times 4=$ | $7 \times 4=$ |
| :---: | :---: | :---: | :---: |
| $8 \times 4=$ | $3 \times 5=$ | $3 \times 9=$ | $7 \times 3=$ |
| $9 \times 6=$ | $1 \times 6=$ | $6 \times 6=$ | $4 \times 6=$ |
| $15 \div 3=$ | $16 \div 4=$ | $6 \div 3=$ | $42 \div 6=$ |
| $16 \div 4=$ | $36 \div 6=$ | $6 \div 6=$ | $54 \div 6=$ |
| $32 \div 4=$ | $40 \div 4=$ | $4 \div 1=$ | $36 \div 4=$ |

Repeat the activity - Can you beat your time? Can you beat Mr Gray's time of 29 seconds

## Symmetry

A 2D shape is symmetrical if a line can be drawn through it so that either side of the line looks exactly the same. The line is called a line of symmetry. ...
An isosceles triangle has 1 line of symmetry. A square has 4 lines of symmetry.

https://www.bbc.co.uk/bitesize/topics/zrhp34j/articles/z8t72p3
https://www.topmarks.co.uk/symmetry/symmetry-matching
 shapes and folding them to see how many lines of symmetry they have.

## Bit of fun...

How many lines of symmetry does a circle have?

## Properties of 2D Shapes

Name as many 2D shapes as you can in 30 seconds.

## How many did you think of?



Bit of fun...
How many rectangles can you see?


## 2D shape properties



## 2D shapes have different properties.

The have sides and corners.
https://www.bbc.co.uk/bitesize/topics/zjv39j6/ articles/ztpwdmn

## 4 corners

 4 sides

Different shapes have different properties....

## Complete the table below:

| 2D Shape | Total Number <br> of Sides | Number of <br> Straight Sides | Number of <br> Curved Sides | Number of <br> Corners | Lines of <br> Symmetry |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Square |  |  |  |  |  |
| Rectangle |  |  |  |  |  |
| Circle |  |  |  |  |  |
| Triangle |  |  |  |  |  |
| Pentagon |  |  |  |  |  |
| Hexagon |  |  |  |  |  |


| Name | Sides | Vertices |
| :--- | :---: | :---: |
| triangle | 3 | 3 |
| circle | 1 | 0 |
| square | 4 | 4 |
| rectangle | 4 | 4 |
| pentagon | 5 | 5 |
| hexagon | 1 | 0 |
| oval | 4 | 4 |
| rhombus | 4 | 4 |
| trapezium | 4 | 4 |
| parallelogram |  | 6 |

## Create a Venn diagram (see example below) and sort the 2D shapes.



Try creating your own headings or some of the suggested below:

- Number of sides - Number of corner
- Number of sides - Line of symmetry
- Number of corners - Line of symmetry


## Deeper Learning

Captain Conjecture says, 'All of these shapes are rectangles because they have four sides.' Do you agree?


Explain your reasoning

Megan describes a 2D shape.

## Deeper Learning



Draw the shape that Megan is describing.

Could this be Megan's shape?


Explain why.

## Deeper Learning

What is the same and what is different about these shapes?


## Deeper Learning

Draw the following shapes.

- A square with sides measuring 2 cm
- A square that is larger than $A$
- A rectangle with sides measuring 4 cm and 6 cm
- A triangle with the same length sides as B


## Properties of 3D Shapes

Name as many 3D shapes as you can in 30 seconds.


## How many did you think of?



Cone


Cube


Cylinder


Triangular Prism


Sphere


Tetrahedron


Square Based Pyramid


Cuboid

## 3D shape properties



## 3D shapes have different properties.

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

## More 3D shape properties...

## Properties of 3D Shapes



Curved


Vertices


Straight


Point


Round


Corner


Solid


Surface


Face


Edge


End

A cube has... 8 vertices 12 edges 6 faces

A prism has... 6 vertex
9 edges 5 faces

Different shapes have different properties....

| 3D Shapes | Shape name | Faces/Surfaces |  | Edges |  | Number of <br> vertices |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  | Flat | Curved | Straight |  | (

## Properties of 3D Shapes



Octagonal
Prism
10 faces
16 vertices
24 edges
Square-based


Pyramid
5 faces
5 vertices
8 edges


Rectangular
Prism
6 faces
8 vertices
12 edges
Triangular
Prism
5 faces
6 vertices
9 edges


Tetrahedron
4 faces
4 vertices
6 edges


[^0]Look round your house. How many examples of 3D shapes can you spot? Create a mind map

TV - Cuboid
3D Shapes
!
Glue Stick - Cylinder

## Deeper Learning

Jack has made a cube using 12 sticks and 8 balls of modelling clay.


What shape could he make with:
6 sticks and 4 balls of clay?
4 long sticks, 8 short sticks 8 balls of clay?

Fill in the missing shape to complete the pattern.

the pattern continued what would the tenth shape be? Explain your reasoning.

## Deeper Learning

I have 9 straws and 6 balls of Play-Doh.


What 3D shape can I create using all of the straws and Play-Doh?
Prove it.

Hannah says,


I can create a model of a pyramid using 3 straws and 3 balls of Play-Doh.

Explain the mistake Hannah has made.
How many straws and balls of Play-Doh would you need to create a pyramid?

## Deeper Learning

What is the same and what is different about these two shapes?


## Deeper Learning

Raj has a 3D shape, he says,

> One face of my 3D shape is a square.

What could Raj's shape be?

Milly says,


## All 3D shapes are prisms.

Do you agree with Milly?
Explain why.

Shape is a great topic for games at home. Here are some ideas that you may like to try yourself.


Potato Print Painting




[^0]:    Octahedron 8 faces 6 vertices 12 edges

    Pentagonal
    Prism
    7 faces
    10 vertices
    15 edges.

