## Our Maths Learning Journey



## Challenge of the week



# 11.03.2024 <br> LQ: Can I count vertices on 3D shapes? 

Steps to Success:
I know what vertices are.
I can count the vertices of 3 D shapes.
I can describe properties of $3 D$ shape.
$3 D$ shapes

edges


Cube
Octahedron vertices


curved surface

## LQ: Can I count vertices on 3D shapes?



TP- What are faces on 3D shapes?
How would you describe them?
'Faces on 3D shapes are...'


What do you remember about edges on 3D shapes?
'Edges on 3D shapes are...'

What do you remember about vertices on 3D shapes?
'Vertices on 3D shapes are the...'


## LQ: Can I count vertices on 3D shapes?

## Edges

Edges. An edge is where two faces meet. For example a cube has 12 edges, a cylinder has two and a sphere has none.

## Vertex-Vertices

A vertex is a corner where edges meet. The plural is vertices. For example a cube has eight vertices, a cone has one vertex and a sphere has none.


Self assessment
Do you understand what faces, edges and vertices are?

## LQ: Can I count vertices on 3D shapes?

Describe the properties of a square based pyramid on your table.


Triangular

Square
TP -How many edges does this shape have?
How many vertices does this shape have?
How many faces does this shape have?
How do you know?
What 2D shapes are the faces?

TP - How many edges does this shape have?
How many faces does this shape have?
How many vertices does this shape have?
How do you know? What 2D shapes are the faces?


## Square

Rectangle


Self assessment
Do you understand how to count faces, vertices and edges 3D shapes?

TP - How many edges does this shape have? How many surfaces does this shape have? How many vertices does this shape have?
Is the surface flat or curved?

## Sphere



$$
\text { Spheres have } 0 \text { edges. }
$$



LQ: Can I count vertices on 3D shapes?
Complete the tasks in your book.

Self assessment
Do you understand what to do?


| T. |  |
| :--- | :--- |
| Complete the table. |  |
|  | Nhamber of vertices |
|  |  |

Complete these sentences.

has $\square$ vertices. $\square$
has $\square$ vertices.
has $\square$ vertices.
has $\square$ vertices.
2.

Match the shapes to themnumber of vertices. (draw the ines)

3.

Will has 20 marshmallows.
He makes two different shapes.
He has six marshmallows left.
Circle the shapes he has made.


## Mental Maths

Match each shape to the correct description.
One is done for you.
shape description

$\square$
has 4 right angles
circle

12.03.2024

LQ: Can I describe the properties of 3D shapes?

Steps to Success:
I can name 3D shapes.
I can describe the properties of 3D shapes.
I can use the language faces, vertices and edges to describe the 3D shapes.


### 12.03.2024

## LQ: Can I describe the properties of 3D shapes?

Today you are going to describe the properties of 3D shapes.


## Let's recap

## https://www.youtube.com/watch?v=3-QwWFkz5hw

> 3D shapes are solid shapes. They are 3 dimensions - width, height and depth.
> Some 3D shapes have flat faces and some have curved surface.
$>$ When two faces meets, it creates an edge.

- When two edges meet, it creates a vertex.
> Vertex is one. Vertices are more than one.


## 3D shapes are Solid Shapes

Corner or vertex - where 3
Edge - where 2 faces meet.

12.03 .2024

## LQ: Can I describe the properties of 3D shapes?

Let's recap again about properties of 3D shapes.
https://www.youtube.com/watch?v=3-QwWFkz5hw


Self assessment
Do you understand what properties mean?

### 12.03.2024

## LQ: Can I describe the properties of 3D shapes?

What words are used to describe the properties of 3D shapes?
Let's count the faces, edges and vertices to compare the properties of a cube and cuboid.

Cube


Cubes have:
. 6 square faces;

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

Cuboid


Cuboids have:

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

TP - How are they the same/different?
12.03 .2024

## LQ: Can I describe the properties of 3D shapes?

Describe the properties of a square base pyramid on your table.


Self assessment
Do you understand how to describe
56 wo properties of 3D shapes?

TP - How many faces/vertices/edges does this shape have? How do you know?

## LQ: Can I describe the properties of 3D shapes?

## Practical

Work with your partner to explore the properties of the shapes on your table.


Remember NOT to turn the shape as you count the faces, edges and vertices.

Mental Maths
Number Bonds of 10, 20 and 100

13.03.2024

LQ: Can I describe the properties of 3D shapes?

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I can describe the properties of 3D shapes.
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> 3D shapes are solid shapes. They are 3 dimensions - width, height and depth.
> Some 3D shapes have flat faces and some have curved surface.
$>$ When two faces meets, it creates an edge.
$\Rightarrow$ When two edges meet, it creates a vertex.
> Vertex is one. Vertices are more than one.

## 3D shapes are Solid Shapes

Corner or vertex - where 3
Edge - where 2 faces meet.


### 13.03 .2024

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### 13.03 .2024

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### 13.03 .2024

## LQ: Can I describe the properties of 3D shapes?

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Self assessment
Do you understand how to describe
5640 properties of 3D shapes?

TP - How many faces/vertices/edges does this shape have? How do you know?

## LQ: Can I describe the properties of 3D shapes?

Complete the tasks in your book. (recorded)


## Mental Maths

## Number Bonds of 10, 20 and 100


14.03.2024

LQ: Can I sort 3D shapes according to their properties?

Steps to Success:
I can sort 3D shapes using Venn diagram.

14.03.2024

LQ: Can I sort 3D shapes according to their properties?
a) Which shapes are in the wrong place?
b) Can you think of a different shape that could go in both the 'six faces' group and the 'pyramids' group?


## LQ: Can I sort 3D shapes according to their properties?

## Share

## I will check the shapes one by one.



All cuboids have six faces so they need to be in this group.


A sphere has one curved surface. It's not a pyramid so I think it should go in the 'Other' group.

This shape has five faces. It is a pyramid.



It is a pyramid so it should go in the 'Pyramids' group.



These shapes are not pyramids. They should be in the "Other' group.


## LQ: Can I sort 3D shapes according to their properties?

To go in both the 'Six faces' and 'Pyramids' groups, the shape would need six faces and be a pyramid.

This shape has a five-sided base. It has five triangular faces and one face that is a pentagon.

It has six faces in total.


It could go in both groups.

## Remember It

Have the 3D shapes in this Venn diagram been sorted correctly?


## Remember It

Have the 3D shapes in this Venn diagram been sorted correctly?
se 3D shapes to check.
than
4 faces

14.03.2024

LQ: Can I sort 3D shapes according to their properties?
I Match the shapes to the number of edges.

14.03.2024

LQ: Can I sort 3D shapes according to their properties?

Put these shapes in order of the number of faces.


E
most faces $\qquad$ fewest faces

## LQ: Can I sort 3D shapes according to their properties?

Complete the tasks in your books.


## Mental Maths

Write down the time each clock is showing on the line underneath.


# LQ: Can I make patterns of 3D shapes? 



## Steps to Success:

I can spot and describe the core of a 3D shape pattern.
I can complete a 3D shape pattern.
I can predict which 3D shape will appear in a sequence.
I can create my own 3D shape pattern.


## The Core of the Pattern

The part of a pattern that repeats is called the core.


A cylinder and a sphere.

## The Core of the Pattern



## The Core of the Pattern



## The Core of the Pattern



## The Core of the Pattern

## Spot the core of the patterns and describe them to a friend.



## Complete the Pattern

Predict the next 3 shapes in the pattern.

Look for the core first.


## Complete the Pattern

## Predict the next 3 shapes in the pattern.

Look for the core first.

How do you know you are correct?

## Complete the Pattern

Predict the next 3 shapes in the pattern.

Look for the core first.


## Complete the Pattern



Which shape is missing from the pattern?

Finding the core will help you.


## Complete the Pattern

Which shapes are missing from the pattern?


Do you have to ring the core at the beginning of the pattern?

## Complete the Pattern



Which shapes are missing from the pattern?


## Complete the Pattern



LQ: Can I make patterns of 3D shapes?
a) Describe the pattern of 3 D shapes.
b) Create the same sort of pattern using these shapes.


## LQ: Can I make patterns of 3D shapes?



## LQ: Can I make patterns of 3D shapes?

1) Work out the missing shapes in these symmetrical patterns.


## LQ: Can I make patterns of 3D shapes?

2 Create a symmetrical pattern with these sets of shapes.


## LQ: Can I make patterns of 3D shapes?

Complete the tasks in your books.


