

The Flourish Federation—Knowledge Organiser

Brookfield Infant and Junior Schools



Subject Focus:

Maths

Year 2 - Term 4

Geometry (Shape)

What? (Key Knowledge)

Name and describe properties of 2D and 3D shapes including the number of sides, vertices, edges, faces and lines of

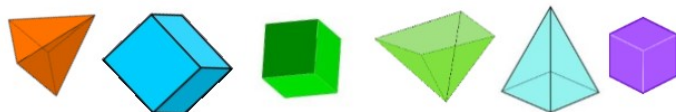
Identify 2D shapes on the surface of 3D shapes.

Compare and sort common 2D and 3D shapes.

What? (Key Vocabulary)

Vocabulary	Comments
2D — sides, corners	Flat shapes
3D - faces	The flat or curved parts which cover most of the shape.
3D - vertices	The points on shapes where the edges meet.
3D - edges	The straight or curved parts where the faces meet.
Symmetry	The mirror image/reflection of a part of

Visuals/Diagrams



What 2D shapes can you see on the faces of these 3D shapes?

Ensure children see shapes in different orientations so they develop a deeper understanding of the whole shape. The orientations of the shape does not effect it's properties.

Discuss the differences and similarities between squares and rectangles and cubes and cuboids.

How have the shapes been sorted?



Ensure to discuss the shapes properties and use this information to group and name the shapes.

How could you sort these objects?

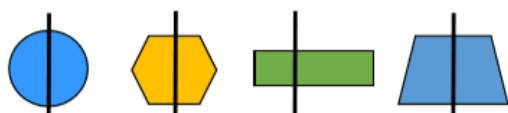
Can you find some other classroom objects to add to each set?



Complete the table:

Shape	Name of shape	Number of flat faces	Draw the faces

Circle the shape with an incorrect line of symmetry. Can folding help you prove your answers.



Examples of Reasoning

Which shape is in the wrong set?
Explain why.

Vertical line of symmetry	No vertical line of symmetry

The circle is in the wrong set because it does have a vertical line of symmetry.

Jack says:



All 3-D shapes have at least one vertex.

Is this true or false?
Explain why

False.

A sphere has no vertices.

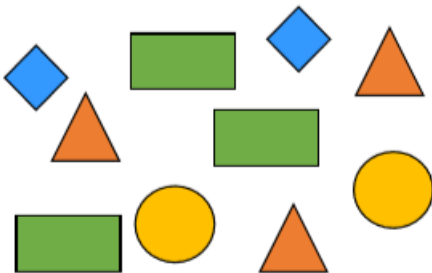
Could also be an opportunity to talk about the words apex and vertex.

Teddy says my 3-D shape has 6 faces.
Mo says he must have a cube.
Is Mo correct?
Explain your answer.

No because Teddy could have a cube or a cuboid.

Examples of Problem Solving

How many different ways can you arrange these shapes to make a repeating pattern?



There are many ways to make different repeating patterns. Encourage children to orally describe the pattern they have created.

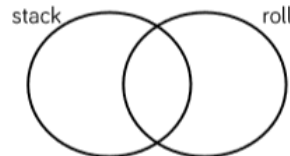
Jack is investigating which shapes stack and which shapes roll.

He says:



Some shapes will stack and roll.

Is he correct?



Sort your shapes using the Venn diagram.
Explain what you notice about each set.
Do all shapes with flat surfaces stack?

Some shapes with flat faces will stack – they will need to have flat faces on opposite sides. (cubes, cylinders, cuboids)

Shapes with a curved surface will roll. (cone, sphere, cylinder)

Some shapes with a flat face cannot be stacked (square based pyramid, cone)

ICT Opportunities

Purple Mash:

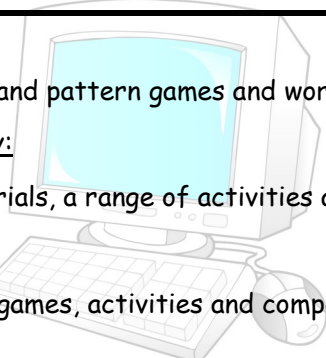
- Many shape and pattern games and worksheets

Education City:

- Videos, tutorials, a range of activities and games

Manga High:

- A wealth of games, activities and competitions



Daily Maths

- Questioning during the register (How many people are absent? How many children are here? How many more children have school dinners than packed lunch).
- Lining up games - counting on/back, 2x, 5x and 10x table games
- Days of the week/months of the year

