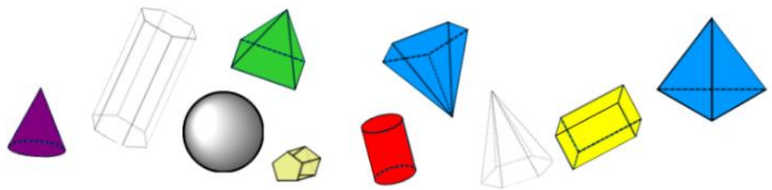
Year 4 Unit 14: 3-D shapes (1 week)

Before you start…

- *What shapes and their respective properties are pupils confident with?*
- *What language do your pupils use when describing shapes?*
- *How would pupils articulate the difference between a 2-D shape and a 3-D shape?*

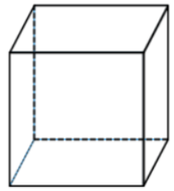
3-D in Year 4?

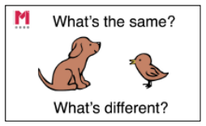
Whilst there is no 3-D shape objective in the Year 4 national curriculum, this article from NRICH provides an insight into how geometry fits into the aims of the national curriculum.

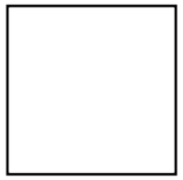


2-D or not 2-D?

It is important to use the 3-D shapes for pupils to experience and manipulate. Once an image of a 3-D shape is used, it becomes 2-D and pupils are unable to fully interact with it and appreciate its properties.







Applying understanding of 3-D shapes

L1&2 Explore the properties of 3-D shapes

Pupils will consolidate their learning from Year 3, recapping 3-D shape names and properties before being introduced to different 3-D shapes. Through a series of open-ended challenges, pupils then apply their understanding using accurate vocabulary to sort and compare the shapes, applying their 2-D shape knowledge to describe them.

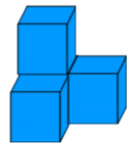
? *How will you support pupils in consolidating and deepening their understanding of 3-D shapes?*
? *What questions can you ask which will support pupils to think mathematically when they are sorting 3-D shapes?*

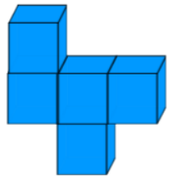
Video: *How to draw 3-D shapes using isometric paper*

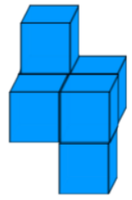
Mastering Geometry

This article provides guidance on mastery for all in geometry It guides you to reflect on your pupils' current starting points.

Can you show me these shapes?

a) 

b) 

c) 

Thinking Geometry?

This article on the Toolkit will support you in considering questions stems to use to develop mathematical thinking relation to geometry.

Solving problems involving 3-D shapes

L3&4 Problem solve using 2-D representations of 3-D shapes

During the final two lessons of the unit, pupils spend time investigating and creating 3-D models using multilink cubes, based on 2-D representations. Opportunities are given for pupils to draw their different models on isometric paper as part of an investigation.

? *What might you need to put in place to support all learners to access the problems?*
? *What thinking will you model aloud? What will you say and do?*

Lessons 5 is a consolidation lesson. It may benefit learners to spend more time using and understanding geometric terminology before moving on.