

Reasoning and Problem Solving

Put a selection of 3-D shapes in a feely bag.

Choose a shape. What do you think it is?



Explain how you know.

Use 3-D shapes to build a tower.

Which shapes are the best for the bottom of the tower?

Which shapes can only go on the top of the tower?

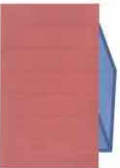
Can you use any of the shapes only in one orientation?

Possible answer:

I think it is a cuboid because I cannot feel any curved surfaces but I can feel a long and smaller face.

Children may reason about different shapes depending on if the shapes have flat or curved surfaces.

The bottom of a 3-D shape is hidden.



What shape could it be?

Explain how you know.

Possible answers:

Cube
Cuboid
Pyramid

Notes and Guidance

Children sort and group 3-D shapes according to simple properties, including type, size, colour.

They also consider sorting shapes based on whether they roll or stack. This will lead children to think about why a shape rolls (curved face) or why it will stack (flat face).

Children should recognise that the orientation of a shape does not affect its properties.

Mathematical Talk

Why is the shape the odd one out?

What is the same about the shapes? What is different?

Can you find an everyday object to add to each of the groups?

How can you test if the shapes roll? What do the shapes that roll have in common?

How can you test if the shapes stack? What do the shapes that stack have in common?

Varied Fluency

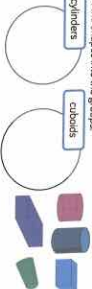
Circle the odd one out in each group.



Sort the shapes into the groups.

cylinders

cuboids



Which shapes will roll? Circle them.

Which shapes will stack? Tick them.



Will any of the shapes roll and stack?