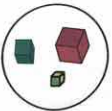


Reasoning and Problem Solving

Some 3-D shapes have been sorted.



Have the shapes been sorted correctly?

Explain how you know.

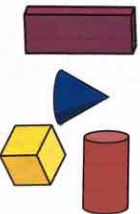
How else could the shapes be sorted?

Possible answers

The shapes have been sorted into cylinders and cubes. The dice needs to be moved.

The shapes have been sorted into colour. The green tin of beans and the red cube need to be moved.

How many ways can you sort the shapes into groups?



Possible answers:

Straight faces and curved surfaces.

Shapes with a circular face and shapes with a square face.

Big shapes and small shapes.

Reasoning and Problem Solving

Amir and Eva are making patterns.

Eva



Amir



Eva

Our patterns are exactly the same.

Our patterns are different.



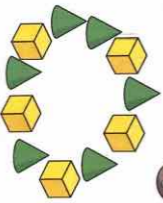
Amir

Who do you agree with?

Explain your answer.

Amir is correct because the triangle is in a different orientation.

Whitney is making a pattern in a circle.



Is Whitney's pattern correct? Explain why.

Can you make your own circular pattern using 3-D shapes?

Whitney's pattern is incorrect. She has 2 cones together. She needs to make the circle a little bigger or smaller so the pattern continues all the way around the circle.

Notes and Guidance

Children use 2-D and 3-D shapes to complete and make simple patterns focusing on different shapes, sizes and colours. Encourage children to say the patterns aloud, consolidating shape names. Use shapes in different orientations to reinforce children's recognition of 2-D and 3-D shapes. Children recognise the core of each pattern (which part is being repeated) and use this to continue patterns in any direction as well as around a circle.

Mathematical Talk

What is the order of the shapes in the pattern?

How can we describe the pattern?

What is the same and what is different about the patterns?

What will the next shape be?

What is the core of the pattern?

How many shapes (elements) are in each repeat?

Varied Fluency

Annie is making a pattern.



Can you say the pattern aloud? Rectangle, triangle, circle, rectangle, triangle, circle ...

Which shape comes after the circle?

Which shape comes before the rectangle?

Name the missing shapes in each pattern.



Jack is making a pattern by printing using 3-D shapes.



Which 3-D shapes could Jack use to continue the pattern?
Can you make your own printed pattern using 3-D shapes?