

Reasoning and Problem Solving

Step 9: Count Edges on 3D Shapes

National Curriculum Objectives:

Mathematics Year 2: (2G2b) [Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Match the statement to the correct 3D shape. All shapes with visible perspective lines and presented in the same orientation and size.

Expected Match the statement to the correct 3D shape. All shapes without visible perspective lines and presented in the different orientations.

Greater Depth Match the statement to the correct 3D shape. All shapes presented as real-life objects.

Questions 2, 5 and 8 (Reasoning)

Developing Explain if a given statement is correct. Shapes with visible perspective lines and presented in the same orientation and size.

Expected Explain if a given statement is correct. Shapes without visible perspective lines and presented in the different orientations.

Greater Depth Explain if a given statement is correct. All shapes presented as real-life objects.

Questions 3, 6 and 9 (Reasoning)

Developing Identify a mistake that has been made when grouping 3D shapes. All shapes with visible perspective lines and presented in the same orientation and size.

Expected Identify a mistake that has been made when sorting 3D shapes. All shapes with visible perspective lines and presented in the different orientations.

Greater Depth Identify a mistake that has been made when sorting 3D shapes. Shapes without visible perspective lines and presented in the different orientations.

More [Year 2 Properties of Shape](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Count Edges on 3D Shapes

Count Edges on 3D Shapes

1a. Match each child to the shape they are describing.

My shape has 2 edges.



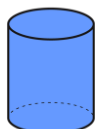
Tara

My shape has 0 edges.

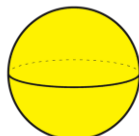


Nico

A.



B.



PS

1b. Match each child to the shape they are describing.

My shape has 8 edges.



Lola

My shape has 1 edges.

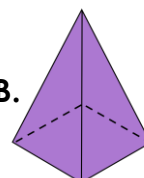


Zac

A.

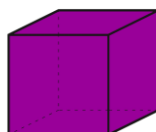


B.



PS

2a. Raj is describing the shape below.



He says,

The cube has 10 edges.

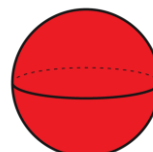


Do you agree? Explain your answer.



R

2b. Maya is describing the shape below.



She says,

The sphere has 1 edge.



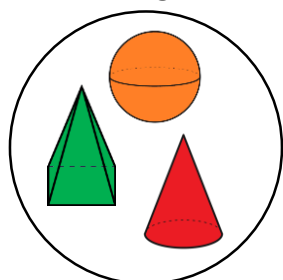
Do you agree? Explain your answer.



R

3a. May made a mistake when grouping 3D shapes.

Fewer than 2 edges



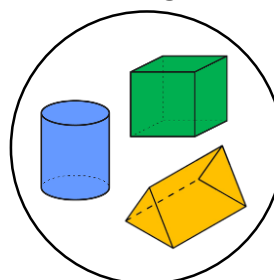
What has she done wrong?



R

3b. Rich made a mistake when grouping 3D shapes.

Even number of edges



What has he done wrong?



R

Count Edges on 3D Shapes

Count Edges on 3D Shapes

4a. Match each child to the shape they are describing.

My shape has 12 edges.



Ava



Della

My shape has 1 edge.

A.



B.



4b. Match each child to the shape they are describing.

My shape has 9 edges.



Sam



Amy

My shape has 8 edges.

A.



B.



5a. Sasha is describing the shape below.



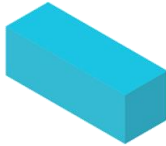
She says,



The cylinder only has 1 edge.

Do you agree? Explain your answer.

5b. Robin is describing the shape below.



He says,

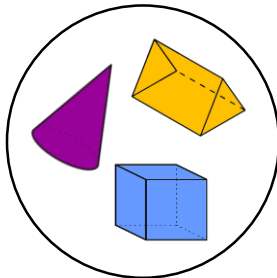


The cuboid has 8 edges.

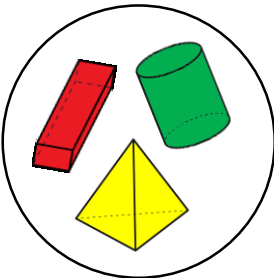
Do you agree? Explain your answer.

6a. Chad made a mistake when sorting 3D shapes.

Odd number of edges



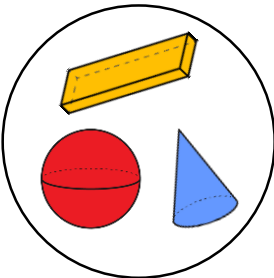
Even number of edges



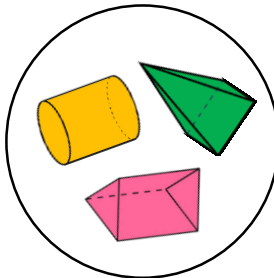
What has he done wrong?

6b. Dotty made a mistake when sorting 3D shapes.

Fewer than 5 edges



More than 5 edges



What has she done wrong?

Count Edges on 3D Shapes

7a. Match each child to the shape they are describing.

My shape has 8 edges.



George

My shape has 2 edges.



Alicia

A.



B.



PS

Count Edges on 3D Shapes

7b. Match each child to the shape they are describing.

My shape has 12 edges.



Theo

My shape has 0 edges.



Jacob

A.



B.



PS

8a. Nico is describing the shape below.



He says,



This is a cuboid. It has 10 edges.

Do you agree? Explain your answer.



R

8b. Lola is describing the shape below.



She says,



This is a cone. It has 2 edges.

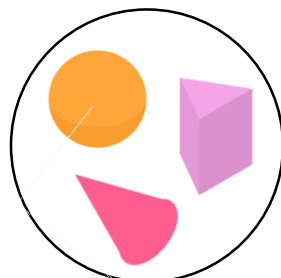
Do you agree? Explain your answer.



R

9a. Joy made a mistake when sorting 3D shapes.

Fewer than 8 edges



More than 8 edges



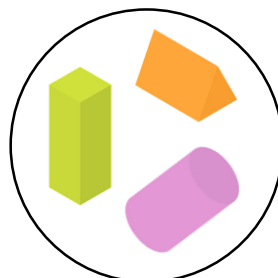
What has she done wrong?



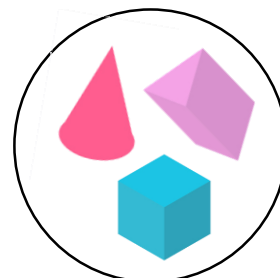
R

9b. Blake made a mistake when sorting 3D shapes.

Even number of edges



Odd number of edges



What has he done wrong?



R

Reasoning and Problem Solving

Count Edges on 3D Shapes

Developing

- 1a. Tara = A; Nico = B
- 2a. Raj is incorrect because the cube has 12 edges.
- 3a. May should not have included the square-based pyramid in the group because it has more than 2 edges.

Expected

- 4a. Ava = B; Della = A
- 5a. Sasha is incorrect because the cylinder has 2 edges.
- 6a. Various answers, for example: Chad has put the cube in the wrong sorting hoop. A cube has 12 edges and 12 is an even number.

Greater Depth

- 7a. George = B; Alicia = A
- 8a. Nico is incorrect because the cuboid has 12 edges.
- 9a. Various answers, for example: Joy needs to swap the triangular prism and the triangular-based pyramid. A triangular prism has 9 edges which is more than 8. A triangular-based pyramid has 6 edges which is fewer than 8.

Reasoning and Problem Solving

Count Edges on 3D Shapes

Developing

- 1b. Lola = B; Zac = A
- 2b. Maya is incorrect because the sphere has 0 edges.
- 3b. Rich should not have included the triangular prism in the group because it has 9 edges which is an odd number.

Expected

- 4b. Sam = B; Amy = A
- 5b. Robin is incorrect because the cuboid has 12 edges.
- 6b. Various answers, for example: Dotty needs to swap the cuboid and the cylinder. A cuboid has more than 5 edges. A cylinder has less than 6 edges.

Greater Depth

- 7b. Theo = A; Jacob = B
- 8b. Lola is incorrect because the cone has 1 edge.
- 9b. Various answers, for example: Blake needs to swap the triangular prism and the cube. A triangular prism has 9 edges which is an odd number and a cube has 12 edges which is an even number.