

Reasoning and Problem Solving

Step 2: Introduce Angles

National Curriculum Objectives:

Mathematics Year 6: (6G3a) [Draw 2-D shapes using given dimensions and angles](#)

Mathematics Year 6: (6G2a) [Compare and classify geometric shapes based on their properties and sizes](#)

Mathematics Year 6: (6G4a) [Find unknown angles in any triangles, quadrilaterals and regular polygons](#)

Mathematics Year 6: (6G4b) [Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Explain which representation is the odd one out. Introducing right angles and angles on a straight line by making links to quarter and half turns.

Expected Explain which representation is the odd one out. Introducing right angles, angles on a straight line, and angles around a point, by making links to quarter, half, and three-quarter turns.

Greater Depth Explain which representation is the odd one out. Introducing angles in shapes and comparing types of angles by making links to quarter, half, and three-quarter turns.

Questions 2, 5 and 8 (Problem Solving)

Developing Calculate the angle the minute hand has moved. Introducing right angles and angles on a straight line by making links to quarter and half turns.

Expected Calculate the angle the minute hand has moved. Introducing right angles, angles on a straight line, and angles around a point, by making links to quarter, half, and three-quarter turns.

Greater Depth Calculate the angle the minute hand has moved. Introducing angles in shapes and comparing types of angles by making links to quarter, half, and three-quarter turns.

Questions 3, 6 and 9 (Problem Solving)

Developing Identify new position using angles or turns. Introducing right angles and angles on a straight line by making links to quarter and half turns.

Expected Identify new position using angles or turns. Introducing right angles, angles on a straight line, and angles around a point, by making links to quarter, half, and three-quarter turns.

Greater Depth Identify new position using angles or turns. Introducing angles in shapes and comparing types of angles by making links to quarter, half, and three-quarter turns.

More [Year 6 Properties of Shapes](#) resources.

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

Introduce Angles

1a. Which is the odd one out?

half turn



90°

Explain your answer.



R

Introduce Angles

1b. Which is the odd one out?

180°

quarter turn

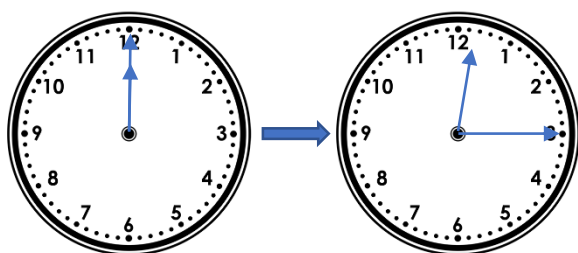


Explain your answer.



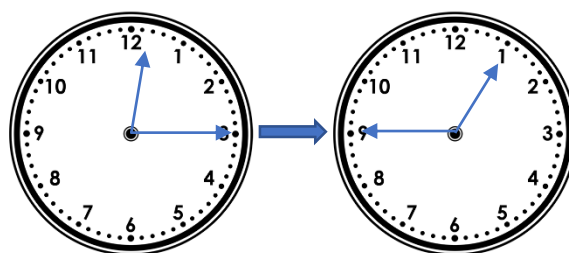
R

2a. The clock starts at 12:00. How many degrees has the minute hand moved to get to 12:15?



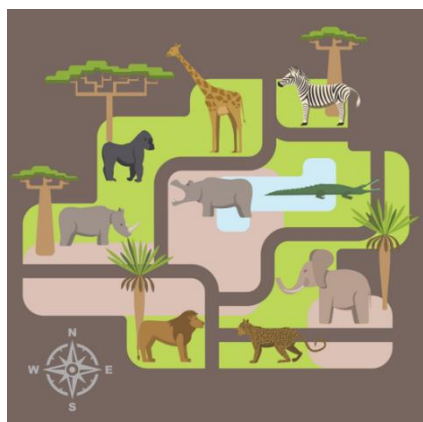
PS

2b. The clock starts at 12:15. How many degrees has the minute hand moved to get to 12:45?



PS

3a. You are at the zebra facing north. If you make one quarter turn anti-clockwise which animal would you be facing?



PS

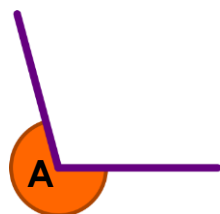
3b. You are at the lion facing south. If you turn 180° clockwise which animal would you be facing?



PS

Introduce Angles

4a. Which is the odd one out?



three-quarter turn

70°

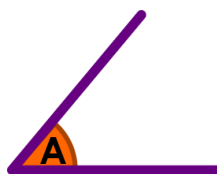
Explain your answer.



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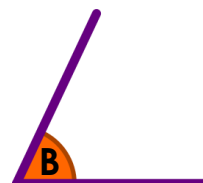
Introduce Angles

4b. Which is the odd one out?



quarter turn

80°

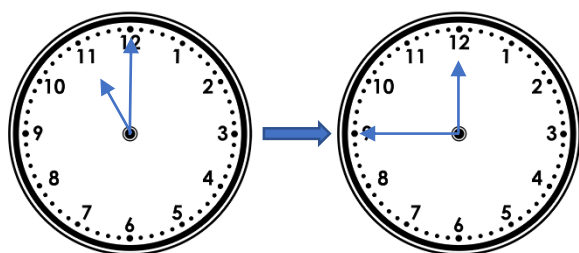


Explain your answer.



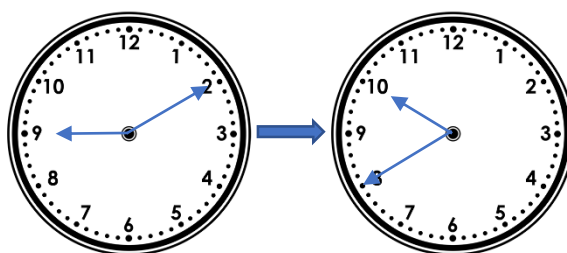
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5a. The clock starts at 11:00. How many degrees has the minute hand moved to get to 11:45?



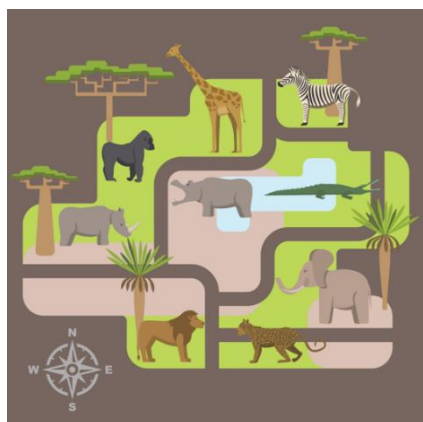
PS

5b. The clock starts at 09:10. How many degrees has the minute hand moved to get to 09:40?



PS

6a. You are at the hippopotamus facing north. If you make a three-quarter turn anti-clockwise which animal would you be facing?



PS

6b. You are at the crocodile facing north. If you turn 270° clockwise which would you be facing?

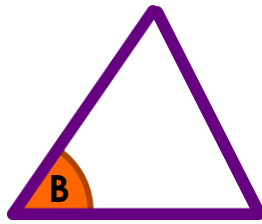
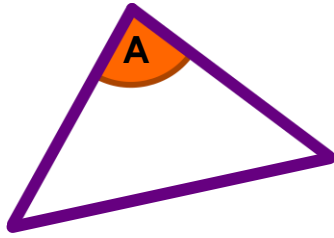


PS

Introduce Angles

7a. Which is the odd one out?

half turn



78°

Explain your answer.

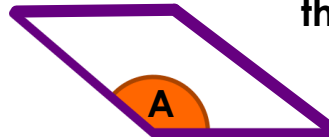


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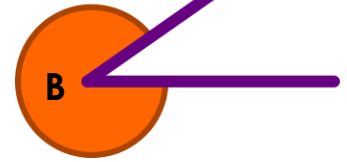
Introduce Angles

7b. Which is the odd one out?

three – quarter turn



290°

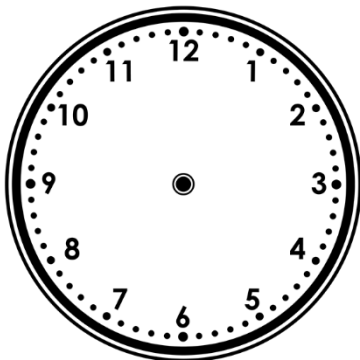


Explain your answer.



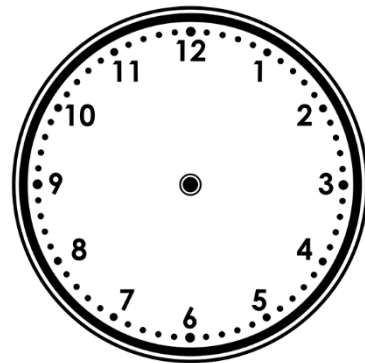
R

8a. The clock starts at 12:17. How many degrees has the minute hand moved to get to 13:02?



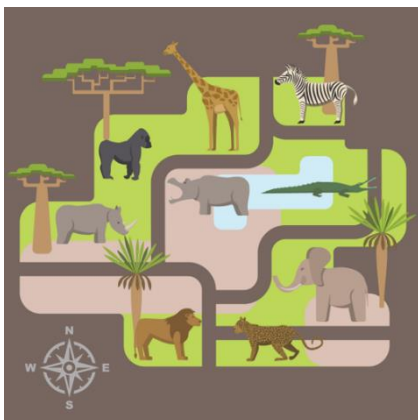
PS

8b. Sam arrived at school at 08:48. How many degrees did minute hand move if he set off at 08:18?



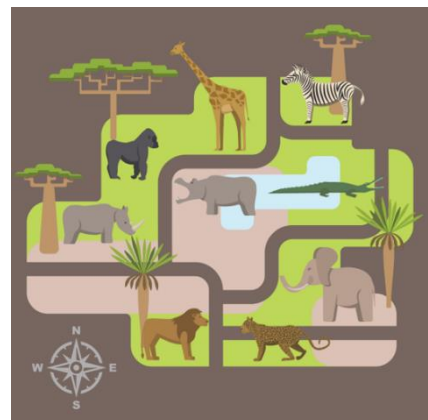
PS

9a. You are at the gorilla facing north. If you turn 90° clockwise then 270° counter clockwise which animal would you be facing?



PS

9b. You are at the giraffe facing north. If you make a three-quarter turn counter clockwise then a half turn clockwise which animal would you be facing?



PS

Reasoning and Problem Solving Introduce Angles

Developing

- 1a. Half turn because the others represent 90° .
- 2a. 90°
- 3a. giraffe

Expected

- 4a. 70° because the others represent angles larger than 180° (obtuse angles).
- 5a. 270°
- 6a. crocodile

Greater Depth

- 8a. Half turn because the others represent angles smaller than 90° (acute angles).
- 9a. 270°
- 10a. rhinoceros

Reasoning and Problem Solving Introduce Angles

Developing

- 1b. Quarter turn because the others represent 180° .
- 2b. 180°
- 3b. leopard

Expected

- 4b. Quarter turn because the others represent angles smaller than 90° (acute angles).
- 5b. 180°
- 6b. hippopotamus

Greater Depth

- 8b. Shape A because the others represent reflex angles.
- 9b. 180°
- 10b. gorilla