Reasoning and Problem Solving
Step 2: Reflection

Teaching Note:
Some of the questions included in this resource will not print correctly in black and white, but will print in greyscale.

National Curriculum Objectives:

Mathematics Year 5: (5P2) Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Decide whether a statement is correct and explain why when reflecting shapes using vertical and horizontal mirror lines. Regular polygons with up to 4 sides.
Expected Decide whether a statement is correct and explain why when reflecting shapes using vertical and horizontal mirror lines. Regular polygons with up to 6 sides.
Greater Depth Decide whether a statement is correct and explain why when reflecting shapes using vertical, horizontal and diagonal mirror lines. No grid included with irregular shapes with up to 8 sides.

Questions 2, 5 and 8 (Problem Solving)
Developing Draw the missing mirror line to make the reflection correct when reflecting shapes using vertical and horizontal mirror lines. Regular polygons with up to 4 sides.
Expected Draw the missing mirror line to make the reflection correct when reflecting shapes using vertical and horizontal mirror lines. Regular polygons with up to 6 sides.
Greater Depth Draw the missing mirror line to make the reflection correct when reflecting shapes using vertical, horizontal and diagonal mirror lines. No grid included with irregular shapes with up to 8 sides.

Questions 3, 6 and 9 (Problem Solving)
Developing Identify mistakes in a reflection of a pattern using vertical and horizontal mirror lines. Pattern includes two different coloured squares.
Expected Identify mistakes in a reflection of a pattern using vertical and horizontal mirror lines. Pattern includes up to 3 different coloured squares.
Greater Depth Identify mistakes in a reflection of a pattern using vertical, horizontal and diagonal mirror lines. Pattern includes coloured squares and half squares.

More Year 5 Position and Direction resources.

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Reasoning and Problem Solving – Reflection – Teaching Information
1a. Cameron has reflected a shape. 
I’ve reflected by making sure the white part is always on the left of the black part.

Do you agree? Explain your answer.

1b. Sara has reflected a shape. 
I’ve reflected by making sure the shapes touch at the mirror line.

Do you agree? Explain your answer.

2a. Draw the mirror line so that the reflection is accurate.

2b. Draw the mirror line so that the reflection is accurate.

3a. Put a cross on the mistakes in the reflection below.

3b. Put a cross on the mistakes in the reflection below.
Reflection

4a. Raj has reflected three shapes.
   I've reflected by copying the shapes on the other side of the mirror line.

Do you agree? Explain your answer.

4b. Sonny has reflected three shapes.
   I've reflected by making sure the shapes touch at the mirror line.

Do you agree? Explain your answer.

5a. Draw the mirror line so that the reflection is accurate.

5b. Draw the mirror line so that the reflection is accurate.

6a. Put a cross on the mistakes in the reflection below.

6b. Put a cross on the mistakes in the reflection below.
7a. Sasha has reflected three shapes. 
I've reflected by making sure I have left the same size space between my shape and the mirror line.

Do you agree? Explain your answer.

7b. Maya has reflected three shapes. 
I've reflected by making sure the shapes are exactly the same size.

Do you agree? Explain your answer.

8a. Draw the mirror line so that the reflection is accurate.

8b. Draw the mirror line so that the reflection is accurate.

9a. Put a cross on the mistakes in the reflection below.

9b. Put a cross on the mistakes in the reflection below.
Reasoning and Problem Solving
Reflection

Developing
1a. Cameron is incorrect. If the shape is reflected, the colours will be the opposite way round.

2a.

3a.

Expected
4a. Raj is incorrect. The position of the reflected shapes must be the same distance from the mirror line. Raj has moved his shapes to the other side of the mirror line at different distances.

5a.

6a.

Greater Depth
7a. Sasha’s reasoning is partly correct. It is important to leave the same amount of space between the mirror line and the reflected shape. However, the pentagons are different sizes and quadrilaterals have been moved instead of reflected.

8a.

9a.

Developing
1b. Sara’s reasoning is correct, but the reflection she has drawn is incorrect as the heights of the shapes are different.

2b.

3b.

Expected
4b. Sonny is partly correct. The reflection should touch the mirror line if the original shape also does this. However, Sonny has reflected the triangle incorrectly. He has moved the shape instead of reflecting.

5b.

6b.

Greater Depth
7b. Maya’s reasoning is partly correct. It is important that the reflected shape is the same size as the original. However, she has not reflected all the shapes. The trapezium has only been moved.

8b.

9b.

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Reasoning and Problem Solving – Reflection ANSWERS

ANSWERS

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