

Symmetry, Reflection and Coordinates

Mathematics

Year 5

Lesson 2 of 5

Learning Objective		Resources	
To reflect shapes on a grid.		Slides Worksheets 2A/2B/2C Mirrors, tracing paper	Diagonal Reflection 2A A range of physical maths resources (FSD? only)
Teaching Input			
<ul style="list-style-type: none"> We can move shapes on a grid in different ways. These are called transformations. Translation, reflection and rotation are all types of transformation. Define translation. What is reflection? Talk to a partner... Reflection is a type of transformation. We can move (or transform) the green rectangle to a new position on the grid by reflecting it across a mirror line. The slide explains drawing mirror lines. Which of the grids shows the purple rectangle correctly reflected? The following slide reveals the answer. Mirror lines can be vertical, horizontal or diagonal. Show the slides explaining reflecting patterns across mirror lines on a grid. How would you draw a reflection of this triangle? Allow time for children to respond to the question. If you wish to, draw on the slide to show children's ideas. The following slide reveals the answer. Finding reflections across diagonal lines is a bit trickier. We have to count whole squares and half squares (the slide shows the number of whole and half squares between the corners of a rectangle and the diagonal mirror line). Explain the importance of marking all vertices of a reflection before drawing lines to join them. The Diagonal Reflection 2A sheet could be used to demonstrate this. How could we check reflections? Again, allow time for children to share their ideas. The following slide suggests using a mirror, tracing paper or folding along mirror lines. Explain that today we will be reflecting shapes on a grid. 			
Main Activity			
<u>Lower ability:</u>	<u>Middle ability:</u>	<u>Higher ability:</u>	
On Worksheet 2A, children are to draw reflections of shapes across vertical and horizontal mirror lines, then check and mark their own work using mirrors or tracing paper.	On Worksheet 2B, children are to draw reflections of shapes across vertical, horizontal and diagonal mirror lines, then check and mark their own work using mirrors or tracing paper.	On Worksheet 2C, children are to draw mirror lines and the corresponding reflections of shapes across vertical, horizontal and diagonal mirror lines. They should then check and mark their own work using mirrors or tracing paper.	
Fancy something different...?			
<ul style="list-style-type: none"> Working in pairs, one partner is to make a simple pattern using a range of physical resources such as maths cubes, tiles, toy bricks, beads, tangrams etc. on one side of a mirror line. This could be done by marking a line across the middle of a table, or on resources such as peg boards or rubber band boards. The other partner is to attempt to make an accurate reflection of the pattern on their side of the mirror line. SUPPORT: use a horizontal line across the centre of a table. EXTEND: use separate peg/rubber band boards, or mark a diagonal line across a table. 			
Plenary		Assessment Questions	
Show the first Plenary slide. Which of the grids below shows the correct reflection of the pink triangle? The last Plenary slide reveals the answer.		<ul style="list-style-type: none"> Do children know what a transformation is? Do children know that reflection is a type of transformation? Can children reflect shapes across a mirror line? 	