

William Morris Maths Planning Subject topic: Using art to inspire maths: coordinates, position and direction.

School based maths lessons

Subject: Maths/ Art	Class:	Day:
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National Curriculum Links:

- ♣ 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
- ♣ describe positions on a 2-D grid as coordinates in the first quadrant
- ♣ complete a simple symmetric figure with respect to a specific line of symmetry.
- ♣ identify lines of symmetry in 2-D shapes presented in different orientations

- ♣ learn about great artists in history and use them for inspiration in own art.
- ♣ improve their mastery of art and design techniques.

Session/ Title : 4

Reflection on a vertical mirror line.

Learning Intention	Success Criteria	Key Vocabulary	Teacher & Pupil Activity (Indicate the groups that will be supported and by whom)	Plenary	Resources	Differentiation
To reflect a shape across a vertical mirror line.	<p>I can identify the mirror line.</p> <p>I can flip a shape so that it is a mirror reflection.</p> <p>I know that when reflected a shape keeps the same dimensions.</p> <p>I can identify the reflected shapes.</p> <p>I can count how far each point is from the mirror line.</p>	<p>mirror line</p> <p>symmetrical</p> <p>reflection</p> <p>vertical</p> <p>horizontal</p> <p>quadrant</p>	<p>Introduction:</p> <p>Show the children William Morris images. What do they notice about the images? They may pick out details about nature and birds. Ask them to think as mathematicians, what do they notice?</p> <p>Activity 1:</p> <p>Discuss that mirror lines can be on any angle but today we will focus on the vertical mirror line,</p> <p>Ask the children what they already know about reflection to address any misconceptions. Work through slides looking at reflection on a vertical mirror line.</p>	Recap what they children have learnt from today and how this fits within the unit of work thy have	<p>- PowerPoint</p> <p>- Examples of maths resources being used</p> <p>- 'Test-base questions' resource sheet as an extension.</p>	<p>SEN:</p> <p>Use a given sheet with half of the object already shown and ask the children to draw the create the reflection</p> <p>EAL:</p> <p>Give them key words and</p>

		<p>Key Questions When have you seen reflections before? What does reflection mean? How can you make sure that the reflection is accurate?</p>	<p>Follow up: Look at the William Morris images again. Can they spot the vertical mirror line? What shapes or natural objects can they see that have been reflected (i.e. birds, leaves, flowers etc.) Activity 2: Children use mathematical resources (numicon, counters, tessellating shapes etc) to create reflective patterns with a partner. After a while ask the children to stop and have a look at their own images. Use sentences stems like “the red counter is reflected on the vertical mirror line” to reinforce learning. Then ask the children to move around the room to look at other images that have been created. Which designs show reflection clearly? What have been inspired by William Morris? How could they be improved? Activity 3: Give the children a quick quiz to check understanding of reflection, use whiteboards to indicate A, B, C or D. Have they correctly identified the reflection?</p>	<p>done so far.</p>		<p>sentence stems to reinforce vocabulary.</p> <p>GDS: Can you use a horizontal or diagonal mirror line? Can you show more than one mirror line?</p>
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