

Properties of Shapes: Spectacular Symmetry

Aim: Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line. I can recognise line symmetry in 2D shapes.	Success Criteria: I can label 2D shapes. I can fold 2D shapes to explore symmetry. I can order shapes according to line symmetry.	Resources: Lesson Pack Whiteboards and pens – class set Scissors Mirrors Dice 2D shapes and feely bag
	Key/New Words: Circle, square, rectangle, pentagon, triangle, hexagon, octagon, quadrilateral, kite, oval, straight, curved, side, edge, corner, irregular, regular, mirror line, reflection, symmetry, symmetrical.	Preparation: Differentiated Spectacular Symmetry Activity Sheets – 1 per child Large Butterfly Outline – as required 2D Shape Word Mat – as required

Prior Learning: It will be helpful if the children are familiar with the names and properties of some common 2D shapes and have experience of using mirrors to make symmetrical patterns.

Learning Sequence

	Dice Reflections: Provide children with dice to hold. Ask them the name of the shape and what they notice when the spots on opposite sides are added together. They total seven. Using the Lesson Presentation , ask the children to work out what the reflected face of the die would be in the mirror.	
	Symmetry: Using the Lesson Presentation , explain that symmetry is where a line shows an identical reflected image on each side. Show children that this line can be shown in any orientation, and give examples of symmetrical objects in real life.	
	Butterfly Patterns: Using the Lesson Presentation , ask the children to divide a whiteboard in half. Explain this is the mirror line and the space either side of the line represents the wings of a butterfly. One child draws a 2D shape on one side and the other child produces the same shape in the correct position on the other, ensuring symmetry. They continue adding shapes and switch roles.	
	Spectacular Symmetry: Provide each child with the differentiated Spectacular Symmetry Activity Sheet . Ask the children to label, cut out the shapes and make different folds to explore line symmetry. If necessary, spend time demonstrating line symmetry by folding other shapes and checking by holding a mirror along the fold to see if the original shape can be seen again. This works well with a butterfly template. If necessary, encourage the children to use the 2D Shape Word Mat as a support for labelling the shapes. <i>Can the children correctly label and find the lines of symmetry in given shapes?</i>  Children name and cut out nine shapes, then fold in different ways to explore line symmetry.  Children name and cut out nine shapes, then fold in different ways to explore line symmetry. They order the shapes from least to most line symmetry.  Children name and cut out thirteen shapes, then fold in different ways to explore line symmetry. They order the shapes from least to most line symmetry and sort the shapes into regular and irregular categories.	
	Feely Bag: Put a 2D shape in a feely bag. Invite a child to feel the shape and describe it. Encourage the child to describe the properties of the shape, such as number of sides and vertices. The class has to work out what the shape is. When the shape is revealed, ask children to identify if it is regular or irregular. Work together to identify <i>if the shape is symmetrical and, if so, where and through how many lines.</i>	

Masterit

Butterflyit: Provide children with [Butterfly Outline Colouring Sheets](#) and ask them to colour them or use collage materials to produce some symmetrical designs. Extend this activity further by asking them to research species of butterfly to find different examples of symmetry.

Spongeit: Provide children with large pieces of paper and ask them to fold it in half to create a mirror line. With paint, the children use sponges to create a colourful design on one side of the paper. Before the paint has time to dry, fold over the paper so that the paint transfers onto the second half of the paper. Unfold to reveal a symmetrical pattern.