

Reflected Designs

How this will help your child

- This activity will help your child to practise using coordinates to describe the precise position of points on a design.
- It will also help them understand how to find the image of any point under a reflection.

Words and phrases to use

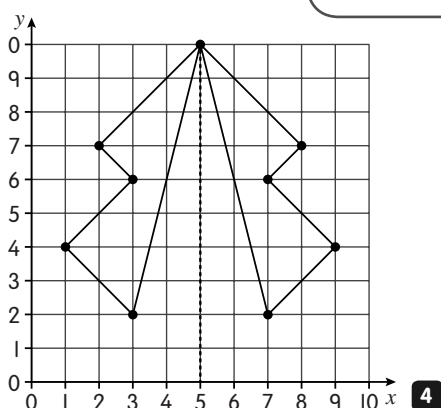
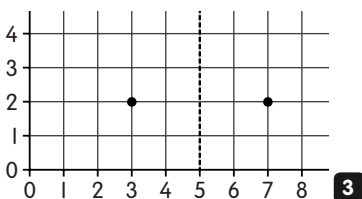
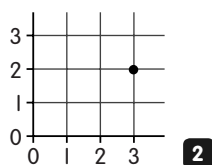
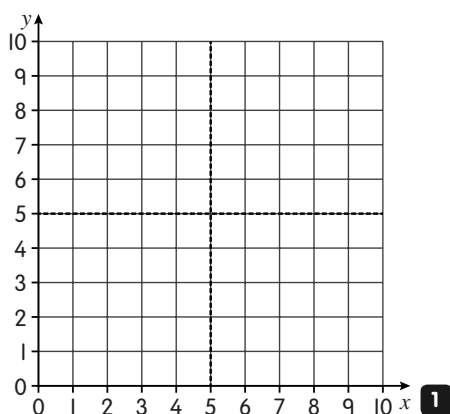
axis/axes, coordinates (a pair of numbers showing position on a grid), horizontal, vertical, point (position on grid), plot (mark the position of a point), reflect/reflection, vertex (corner), image (reflected point), symmetry

You will need

- A pencil
- A ruler
- A small mirror (optional)
- Colouring pencils (optional)

During the activity, look at what your child can do

- Plot points giving their coordinates.
- Describe points using coordinates.
- Reflect points and lines in a horizontal or vertical line of symmetry.



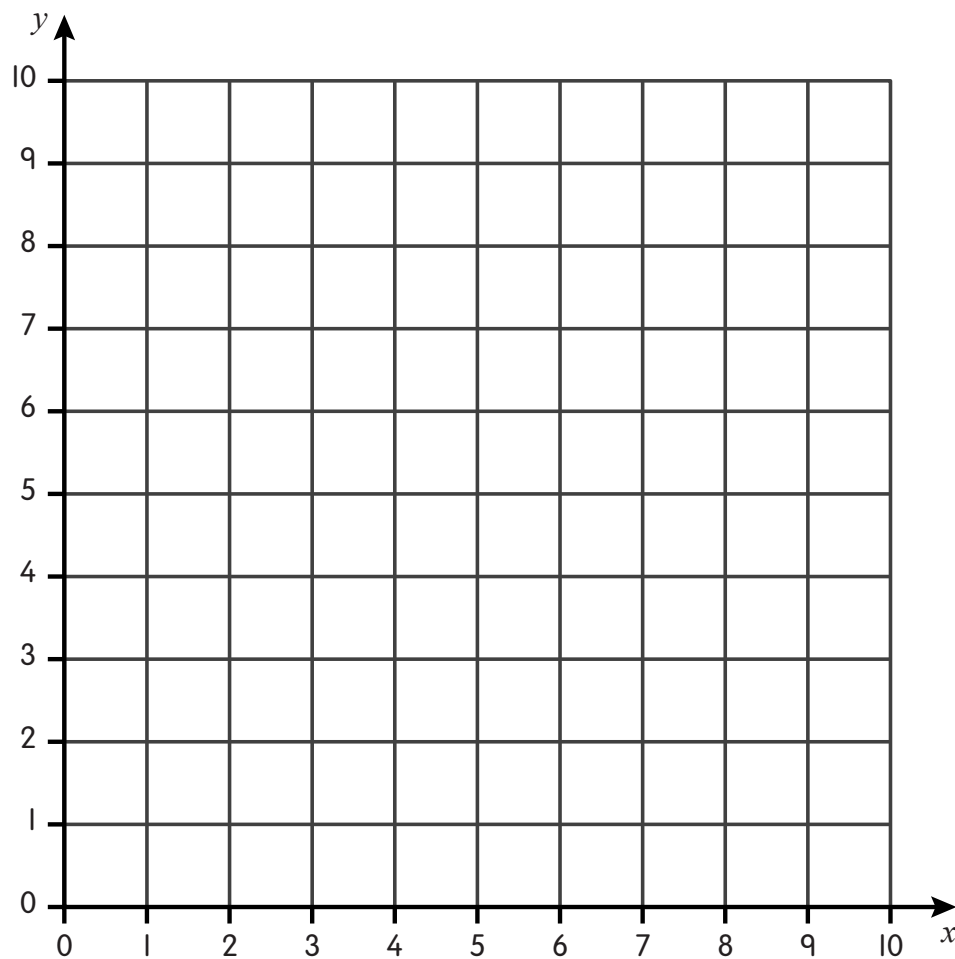
What to do

- Ask your child what they know about symmetry. Discuss objects or images that have halves that mirror each other, e.g. butterflies, tennis courts.
- Explain that they are going to design a new school logo using straight lines to create a simple, symmetrical design.
- They need to prepare accurate instructions for a designer to follow.
- They should create a design that can be reflected in either a horizontal line of symmetry passing through the point (0,5) or a vertical line through the point (5,0). Ask them to choose a line. **1**
- Support your child to plot the first point of their design. Encourage them to say the coordinates, e.g. '3 along, 2 up' or (3,2). **2**
- Talk about where the reflection of this point will be in their chosen line of symmetry. Discuss how to plot it, e.g. counting to either side of the line of symmetry, comparing coordinates or using a mirror. **3**
- Ask them to plot the rest of their design, reflecting each point in the line of symmetry and checking its position. They should then use a ruler to join the points in order. **4**
- Finally, ask them to complete the instructions for the designer, writing each coordinate correctly.

Next steps...

- Ask your child to colour in their logo carefully, keeping the design symmetrical.
- Encourage your child to look for symmetry in everyday life, e.g. buildings, logos, garden layouts.

Reflected Designs



Dear Designer,

First plot and join these points in the following order:

.....

Next draw a horizontal/vertical line through the point (,).

Finally, reflect the shape in this line, and show the image clearly on the grid.

We look forward to seeing your work.

Signed

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