

# Symmetry, Reflection and Coordinates

Mathematics

Year 5

Lesson 4 of 5

Learning Objective	Resources
To find and draw congruent shapes on a grid.	Slides Worksheets 4A/4B/4C Tracing paper

## Teaching Input

- Show two congruent shapes, one translated on a grid. Are these shapes the same? Once children have discussed and responded to the question, show another two shapes, one reflected on a grid. Are these shapes the same? Again, allow time for children to discuss and respond to the question.
- Explain that in some ways the shapes are the same, and in others they are different.
- Show the slide defining congruent shapes. The slides go on to show how we can check if shapes are congruent by cutting them out and holding them together.
- Show three 'L' shapes and one 'T' shape on a grid. Which are congruent? Which are not? Why? The following slide reveals the answer.
- Show two similar shapes, one of which has been scaled up. Are these shapes congruent? Again, after children have discussed and responded to the question, show the following slide which reveals the answer.
- Show the slide with a number of different shapes on a grid. Which of these are congruent with the pink and green shapes shown above? Allow time for children to discuss and respond to the question before revealing the answers on the next slide.
- We can use tracing paper to check whether shapes are congruent. You may wish to demonstrate this using the Congruent Shapes 4A sheet and some tracing paper.
- Explain that today we will be finding and drawing congruent shapes on a grid.

## Main Activity

Lower ability:	Middle ability:	Higher ability:
On Worksheet 4A, children are to draw a simple shape as instructed, then draw congruent copies of the shape using tracing paper.	On Worksheet 4B, children are to draw a more complex shape as instructed, then draw congruent copies of the shape using tracing paper.	On Worksheet 4C, children are to draw a more complex shape as instructed, then draw congruent copies of the shape without using mirrors or tracing paper.

## Fancy something different...?

- Give each child one or more of the Congruent Shapes cards (there are thirty-two altogether; all must be used). They are to plot the coordinates described on the card, then join them with straight lines to make polygons. They are then to examine each other's cards and stand with other children whose shapes are congruent with theirs. Within the thirty-two cards are sets of two, three or four congruent shapes.

## Plenary

Show the Plenary slide, which shows a number of mathematical vocabulary words. Challenge children to work with a partner to agree on a definition for as many of the words shown as possible.

## Assessment Questions

- Do children know the identical properties of congruent shapes?
- Do children understand why some shapes are incongruent?
- Can children draw congruent copies of an original shape on a grid?