

# Year 6 Symmetry: A Step-by-Step Guide for Parents

This step-by-step explanation to symmetry can help you support your child's learning at home. Each subject is broken down into manageable chunks, providing you with a simple guide to follow when exploring this guide. Whether your child is getting to grips with reflective symmetry or whether they're already exploring transformations and rotations.

**Within this area of the website**, you will find a selection of resources intended to help your child learn about each step of this guide. Each step also contains a keyword or phrase that you can use to search the Twinkl site for more resources and activities, designed to support your child in achieving that stage. Simply type the keyword or phrase into the search bar and press enter to explore together.



We hope you find the information on our website and resources useful. The contents of this resource are for general, informational purposes only. This guide is intended to offer parents general guidance on what subject areas tend to be covered in their child's year group and where they could support their children at home. However, please be aware that every child is different and information can quickly become out of date. There are some subject areas that we have intentionally not covered due to the nature of how they are taught or because a trained professional needs to teach these areas. We try to ensure that the information in our resources is correct but every school teaches the national curriculum in its own way. If you would like further guidance or are unsure in any way, we recommend that you speak to your child's teacher or another suitably qualified professional.

# Year 6 Symmetry

## What Does the English National Curriculum Say About Symmetry for Year 6?

In year 6, children are expected to have a secure grasp of straight lines of symmetry within a shape and be able to show the position of a shape when reflected or translated (moved position). It is usual for teachers to teach these techniques using squared paper and axes. Your child will already be familiar with axes and squared paper from drawing graphs and bar charts, but it is often in year 5 that your child will first meet axes for positioning shapes.

## What Is Rotational Symmetry?

During a full rotation (where you spin a shape on a centre-point) there may be more than one time where the shape looks the same as it originally did. This is what we mean by rotational symmetry. A square has four orders of rotational symmetry because there are four ways you can position it by spinning and it looks the same in all four positions. A rectangle has just two orders of rotational symmetry: its first position and when it rotates into its upside-down position.

## How Are Coordinates Used in the Teaching of Shape?

Coordinates are points on a set of axes; they consist of two numbers separated by a comma. The first number tells you the position on the horizontal (x) axis and the second number tells the position on the vertical (y) axis. When your child has mastered reflecting shapes in lines, often called mirror lines, they can begin to reflect shapes in axes.

### Symmetry in Nature

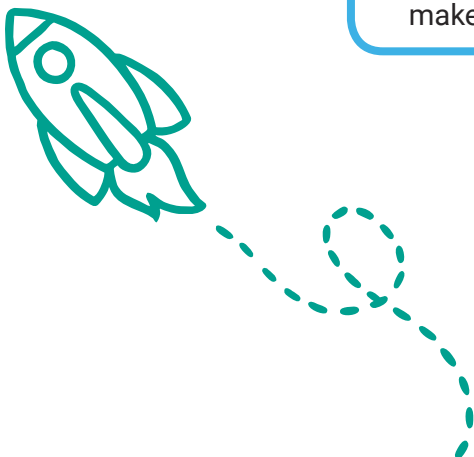
Nature is packed full of line and rotational symmetry. From butterflies to dragonflies, honeycomb to starfish, there are wonderful examples of symmetry in our world. Gather images and make a collage or a scrapbook to celebrate symmetry in nature.

### Rose Windows

Do an image search for rose windows on an internet search engine. How do these windows use symmetry. Can you see lines of reflective symmetry? Can you work out the number of orders of rotational symmetry for each window?

### Artists and Symmetry

Work with your child – therefore minimising e-safety concerns – to look online at The Cholmondeley Ladies and Cutout of Animals paintings. Both pieces of art use symmetry and it results in very different effects. This would make for a great discussion with your child.



## Step 1

### Flip, Slide and Rotate

In year 6, your child is likely to consolidate their work on symmetry and move on to looking at rotational symmetry. Rotational symmetry tells you how many positions a shape can be turned where it still looks the same as it did originally. This basic and colourful activity sheet reminds children that shapes remain the same, despite the fact that they may have flipped (reflected), slid (translated) or rotated. In year 6, children study all these movements of shapes on axes, as well as symmetrical reflections.



### Reflection of Shapes

Everything you need on one sheet! Starting with the one-star sheet, this set of activity pages encourages your child to count in order to reflect an image in a mirror line down the centre of the page. It starts with simple shapes on the one-star sheet and gets progressively more difficult. Use the first sheet to check your child has the right strategies to succeed and compare your child's work to the answer sheet, then leave them to work through the two-star and three-star versions independently. It's a great activity for encouraging concentration.

## Step 2

## Step 3

### Fidget Spinners

Fidget spinners can help your child to understand rotational symmetry. Fidget spinners have rotational symmetry. This means you can put turn them part way round and they look the same in each position. The number of points on a spinner will affect how many different positions you can rotate the spinner for it to appear the same. All the instructions are included in this investigation pack, just support your child with reading the expectations and understanding what's expected.



### Tour de France

In year 6 SAT questions, children often have to link together their knowledge of reflective symmetry with coordinates, translations and rotations. This pack uses a cycle-themed context to study these concepts. If your child has not yet used our step-by-step guides on rotations, translation and position, then just try out the one-star activity as they may need reminding about coordinates and translations before diving deeper into the higher level tasks.

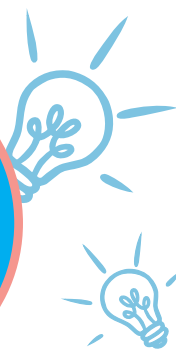
## Step 4

# Explore and Discover More

Twinkl Go! is a digital platform, hosting interactive content such as videos, games, audiobooks and more. Twinkl Go! enables digital content to be streamed to your computer or mobile device.



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Book Club

Twinkl Book Club is our book subscription service. Enjoy our original works of fiction in beautiful printed form, delivered to you each half-term and yours to keep!



Twinkl Boost is a range of intervention resources, created to support and lift learning with children at every level. These include our easy-to-use SATs and Phonics Screening resources.



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imagine

Imagine resources are designed to help your children to think creatively, question and imagine. Every week, a new topic consisting of five photos, each with related activities, is created.



Twinkl Originals are engaging stories written to inspire children from EYFS to KS2. Designed to encourage a love of reading and help curriculum-wide learning through accompanying resources.



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KIDS' TV

Twinkl Kids' TV is our wonderful YouTube channel dedicated to fun and informative video-style resources full of new and creative activities you can try at home!

