

# Year 4 Symmetry: A Step-by-Step Guide for Parents

This step-by-step explanation to learning about 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. Whether your child is beginning to understand reflective symmetry or whether they can already find multiple lines of symmetry in different shapes, there'll be a right step in this guide to support your child.

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 However, please be aware that every child is different and information can quickly become out of date.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.

# Symmetry

## What Do Year 4 Children Learn about Symmetry?

In year 4, most children continue to focus on reflective symmetry. This is the type of symmetry where one half of an object matches another half. If a mirror is placed exactly at this halfway point, the image in the mirror should appear as if it completes the whole shape, just like the original. The simplest example of this perhaps is a butterfly's wings. At this stage of primary school, children should also begin to learn that some shapes have several lines of symmetry. In other words, there are a few positions where a mirror could be placed to complete the image. Children's work in symmetry is usually linked to their understanding of the properties of shapes as well as in increasingly accurate drawings.

## How Many Lines of Symmetry Does a Circle Have?

Primary school children explore reflective symmetry using an upright mirror on a shape. They learn that reflective symmetry lines can be placed so as to cut a shape in any position where one half of that shape would match the other. This can also be confirmed by folding. A cut-out shape has a line of reflective symmetry along any line where you can fold it and the resulting half-shape matches perfectly. With circles, you can fold them in half in any position and the shape will match to form equal semi-circles. With a mirror, as long as you place it to cut the circle in half, you can do this in any position. This means that a circle has an infinite number of lines of reflective symmetry. By year 4, some children can work this out for themselves. The key is to be sure to let children explore for long enough to draw their own conclusions using a variety of 2D shapes, including circles.

## What 2D Shape Names Should a Primary School Child Know?

Following the English national curriculum, a primary school child will study a range of 2D shapes that we call polygons. Children are expected to know the names of triangles, circles, squares, rectangles, pentagons, hexagons, rhombuses, kites and more.

### Symmetrical or Asymmetrical?

Take a photo of your face and cut it down the middle so that only one eye, one ear and half of your nose and mouth are showing. Stick the photo down onto paper and see if you can draw the rest of your face so that the image is perfectly symmetrical. You could use a small mirror and hold it along the edge of the photo to see what you need to draw.

### It's an Illusion!

Some optical illusions rely on symmetry to produce an effect. Either look online or use our lovely Twinkl **Optical Illusion Cards** to collect images of optical illusions that do and don't use symmetry.

### Symmetrical Decorations

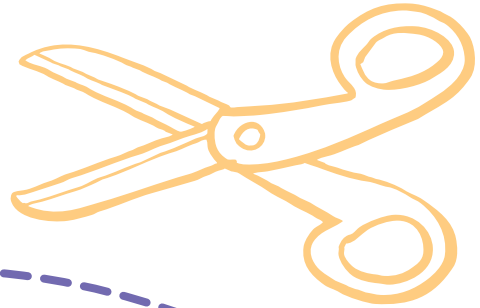
Try making different patterns for coloured bunting or paper chains where a symmetrical pattern is produced. It's often easiest to work from the centre and then repeat the pattern on each side of the centre to produce symmetry. Try sharing the task with one person creating the design and the other person reflecting it to make the symmetrical pattern.



## Step 1

### Lines of Symmetry

Use this helpful **PowerPoint** to share an increasing depth of understanding about lines of symmetry with your child. Work through the slides at a pace your child finds manageable. Don't feel the need to cover all the slides in one sitting. It might be a good idea to look at a few, discuss the ideas and then try an activity from one of the other steps to complete your session. Spreading the presentation over a week and mixing in activity-based work might be the best way to support your child with their understanding that different shapes have different numbers of lines of symmetry. If your child finds remembering the information challenging, you can always keep a copy of this **Lines of Symmetry KS2 Poster** to hand as a reference.



### Problem Solving with Lines of Symmetry

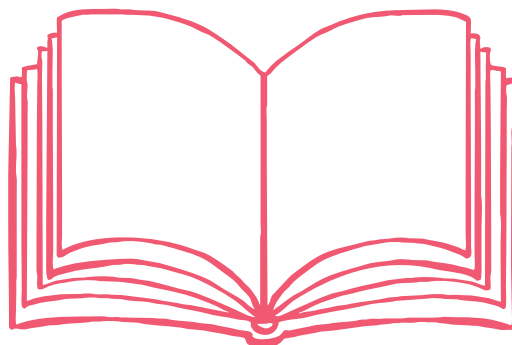
In the English national curriculum, children are expected to reason with their maths and to solve problems. This **pack** helps to support you to work on these areas with your child. The pack builds on Step 1 and provides a wider variety of real-life examples and techniques. You'll also find plenty of examples of shape work in different orientations, one of the main objectives for year 4 symmetry work.

## Step 2

## Step 3

### Viewing Symmetric Figures

This **PowerPoint** shows children how to view symmetric images. It is important in year 4 to develop increasing accuracy in symmetry and geometry activities generally. The slides demonstrate both how to view shapes and how to use matching techniques to confirm symmetry.



## Step 4

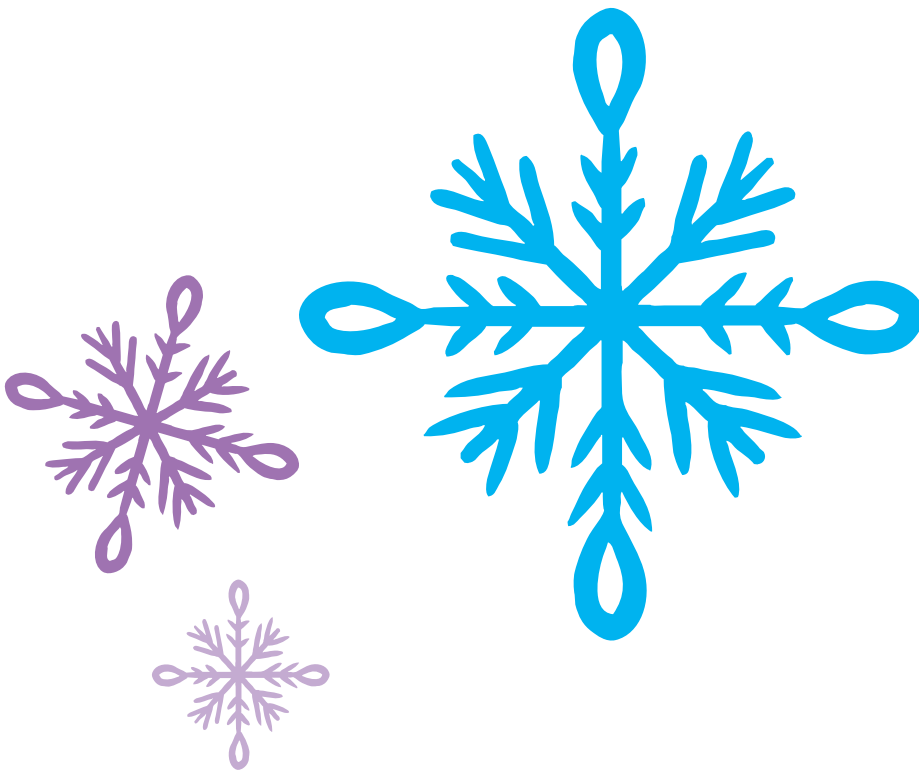
### Completing Symmetric Figures

Once your child has practised the techniques of symmetry in Step 3, it's time to use these **worksheets** to practise completing symmetric figures. Children can sometimes find holding mirrors and drawing tricky, so try using a bulldog clip (the large, triangular sort) to grip the bottom of a small mirror to hold it upright while your child draws. It works better than modelling clay or sticky tack.

### Completing Symmetric Figures in Reflection Lines

If your child has mastered the symmetric figure completions, you might like to try these **reflective drawings** where mirror lines are included. These enable your child to get ready for work in upper key stage 2 classes when the mirror line may be placed outside of a shape and your child will need to draw the complete shape in the same position on the other side of the mirror. This takes practice, so don't be concerned if it's tricky to start with.

## Step 5



# 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!



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Boost

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.



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ORIGINALS

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!