

# Year 6 Angles and Coordinates: A Step-by-Step Guide for Parents

This step-by-step explanation to year 6 angles and coordinates will help you support your child's learning at home. The subject is broken down into manageable chunks, providing you with a simple guide to follow when learning about year 6 angles and coordinates, either to support your child's homework or if you decide to give your child some extra support. In this guide, you will find a step that matches your child's level of understanding and then have suggested activities which can be used to support that step.

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.

Find unknown angles in any triangles, quadrilaterals, and regular polygons



Click here



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 However, please be aware that every child is different and information can quickly become out of date.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

# Angles and Coordinates

## What Are Children in Year 6 Taught about Coordinates and Angles?

In year 6, children will continue to build on their prior learning of coordinates and angles in years 3, 4 and 5. In year 6, they will learn to:

- find unknown angles in any triangles, quadrilaterals, and regular polygons;
- recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles;
- describe positions on the full coordinate grid (all four quadrants);
- draw and translate simple shapes on the coordinate grid and reflect them in the axes.

This guide will help you support the learning of year 6 angles and coordinates at home. Each step contains an explanation to that stage and a link to an appropriate resource which can be used at home to support your child's learning.

As well as using the resources in this category, and the keyword searches to help your child with times tables, below are a few ideas for games and activities to help your child practice angles and coordinates at home.

### Map Reading

Find example of maps with grid lines and coordinates (you can use atlases, books of maps or online maps). Practice reading these with your child, asking them to say the coordinates for specific images/places on the map.

### Reflecting Objects

Provide your child with squared paper (you can find some [here](#) on the Twinkl website). Draw several shapes on the paper with a mirror line by each shape. Ask your child to draw the shape reflected over the mirror line.

### The Turn Game

This is a fun, physical activity to help your child recognise that angles can be used to describe turns. While standing on a spot, ask your child to turn different amounts of right-angles to the left or the right. For example, 'turn 1 right-angle to the left' or 'turn 3 right-angles to the right'. Further challenge can be added by asking them to predict what they will be facing before they make the turns.

### Angle Hunt

Once your child is familiar with acute, right and obtuse angles, you can complete an angle hunt at home. Ask your child to find and note all the places they can spot the different types of angle in your home. You could ask them to take pictures of the different angles on a smart phone or tablet and then make an angle identifier poster, using the photos they have taken.



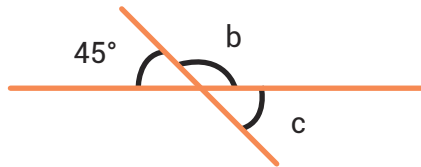
## Step 1

### Find Unknown Angles in Any Triangles, Quadrilaterals, and Regular Polygons

In year 6, children are taught some key facts about angles in shapes, such as all the angles in a triangle total  $180^\circ$  or all the angles in a quadrilateral total of  $360^\circ$ . They can use these facts to help them calculate missing angles in a shape. At home, you can try using this **Calculating Angles of a right-Angled Triangle Worksheet** to help your child practice calculating missing angles in shapes.

### Recognise Angles Where They Meet at a Point, Are on a Straight Line, or Are Vertically Opposite, and Find Missing Angles

Once children have learned by heart the amount of degrees in a full turn ( $360^\circ$ ), in a half turn ( $180^\circ$ ) and in right angles ( $90^\circ$ ), they can use this knowledge to calculate missing angles around a point. For example, the missing angle can be calculated below by using this knowledge. Angle b can be calculated because all the angles on a straight line should total  $180^\circ$  so  $180^\circ - 45^\circ = 135^\circ$ .



Opposite angles on a point made from 2 lines are congruent, this means they are always the same. Having this knowledge of angles can also help children see that angle c is the same as the one labelled as  $45^\circ$ .

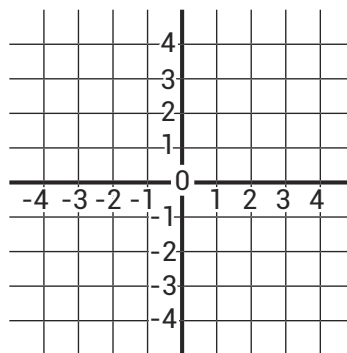
At home, try this **Calculating Angles Resource Pack** which can be used to help your child practice calculating missing angles.

## Step 2

## Step 3

### Describe Positions on the Full Coordinate Grid (All Four Quadrants)

A coordinate grid with four quadrants is when the grid is split into four sections including negative numbers on the x-axis and y-axis. For example:



Plotting coordinates on these axes is just the same as when there are only positive numbers. The first coordinate is placed on the x-axis (the horizontal one) and the second goes on the y-axis (the vertical one). To help your child practice plotting coordinates on four quadrants, try using this **Helicopter Coordinates in Four Quadrants Worksheet**.

## Step 4

### Draw and Translate Simple Shapes on the Coordinate Grid and Reflect Them in the Axes

In previous years, children are taught to reflect and translate shapes in one quadrant. However, in year 6, children build on this prior knowledge by translating and reflecting shapes over four quadrants. At home, you can use these two sets of worksheets: **Drawing Reflected Shapes in Four Quadrants** and **Four Quadrant 2D Shape Translations** to help support your child in their learning.

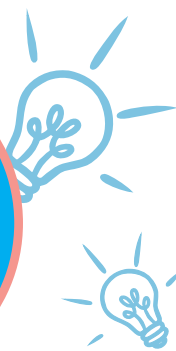


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Imagine resources are designed to help your children to think creatively, question and imagine. Every week, a new topic consisting of five photos, each with related activities, is created.



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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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!

