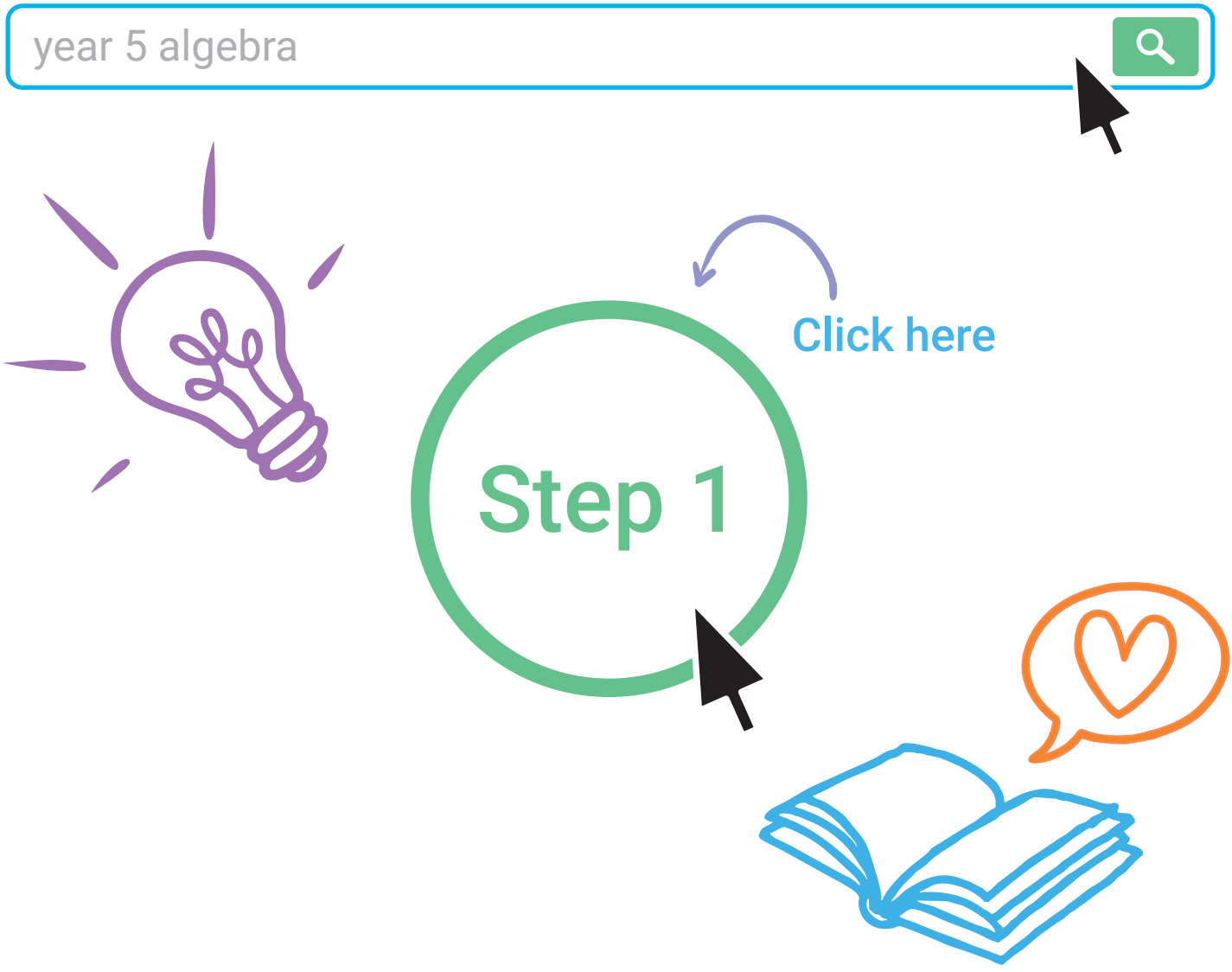
Year 5 Algebra: A Step-by-Step Guide for Parents

This step-by-step explanation to learning algebra will 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 has no idea of what the word 'algebra' means, or they're already aware of the ways in which letters are used with numbers to perform calculations, there'll still be a right step for 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 However, please be aware that every child is different and information can quickly become out of date.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.

Algebra

What Does the Maths National Curriculum Say about Algebra in Year 5?

The national curriculum is broken down into paired year groups, although in maths there is a specific recommended curriculum for year 5 and year 6. Most schools will teach formal algebra in year 6. However, some introduce it earlier and the skills of algebra are actually taught from infant level onwards, although in younger year groups pictures and symbols are used in calculations, rather than letters.

But My Child Used Algebra in Year 4

Some schools teach formal algebra earlier than year 5 because there is teacher guidance in the maths national curriculum which indicates that teachers might choose to use algebra to teach certain concepts; for example, when learning about perimeter. The curriculum tells teachers of year 4 that "Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit."

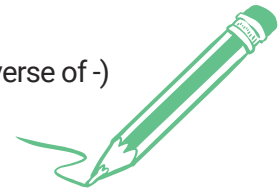
Isn't Algebra Frightening?

Starting algebra can be daunting for parents, so take care to use these resources gently and start with the first resource in the set, moving on gradually; this should help to develop your child's confidence. Try to be positive and be keen to learn alongside your child through each step. Children really use basic algebra from the age of four or five, so it is important to move from this basic form to forms that are more commonly used in more advanced maths.

What's an Equation?

In algebra, we use equal signs in the same way as number-based maths. Any calculation with an equals sign in it is known as an 'equation'. This means that what is on one side of the equals sign has to calculate to the same amount as what is on the other side.

What Are Inverse Operations?



Inverse operations are calculations that undo each other by reversing the operation (e.g. + is the inverse of -)

Starting with 7. If 7 + 8 = 15, then subtract 8 from 15 to get back to 7 (15 - 8 = 7)

Starting with 8. If 8 × 10 = 80, then divide 80 by 10 to go back to 8 (80 ÷ 10 = 8)

Countdown

Have you ever watched the television programme Countdown? Algebra relies on children being able to combine the four rules of number (+, -, × and ÷). Make up large numbers on A5 paper (e.g. 100, 50, 8, 9, 3). Choose a number to aim for and see how close your child can get in one minute. They can use addition, subtraction, multiplication or division at any point. Each number can only be used once.

Code Cracker

Try our fabulous **Treasure Hunt Game**, it's full of code-cracking and problem-solving challenges that tap into algebraic skills. Although the themes are different, these skills help to build confidence in manipulating numbers and combinations of numbers, letters and patterns to solve problems.

Algebra Dominoes

These **algebra dominoes** are great if your child is finding substitution in algebra difficult. Use them as a speed challenge to see how quickly your child can solve each equation. Although they are intended for use at the early primary school age range, this type of exercise builds confidence in substituting numbers.

Step 1

Number Patterns

Number patterns follow special rules which will help your child to be able to work out the next number(s) in a pattern or sequence. Your child needs to be able to work out what needs to be done to move from one number to the next and the next. So if a sequence is 0, 5, 10, 15 .... the next three numbers are 20, 25 and 30. The rule for this sequence is 'add 5'. In some sequences, the rule may change between each step. For example, 1, 2, 4, 7, 11 .... In this sequence, there is an extra '1' added each time. The next number would be 16 because the gap between 1 and 2 is '1'; the gap between 2 and 4 is '2' and so on. Start by working through the one-star worksheet with your child and move on gradually.

Equations

Before starting formal algebra, your child needs to be confident in balancing numbers on both sides of an equals sign. This worksheet helps your child to start solving equations and using the word before letters are introduced. Your child will be asked to write two numbers in the equations to complete them. As before, start with the one-star activity and move on from there. Be sure to go through each sheet before letting your child progress to the next. Feedback is really important.

Step 2

Step 3

Inverse Operations

An inverse operation is one which undoes the previous operation. The inverse of addition is subtraction and the inverse of multiplication is division. Using inverse operations is an important feature of solving equations in algebra. It's good to practise this skill with numbers in year 5 to be ready for solving expressions with letters in year 6.

Alphabet Algebra

This alphabet activity introduces your child to letter-based algebra. Your child needs to work out the value of each letter of the alphabet by solving the equation. As they build up a list of answers, they'll find it easier to solve the rest of the problems. Your child will need to know that, in algebra, when letters are next to each other or numbers are next to letters, they have to be multiplied. In other words 2a is a shorthand way of writing 2 × a.

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.

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.

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.

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!