

Year 6 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.

Year 6 Algebra



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 However, please be aware that every child is different and information can quickly become out of date.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

Algebra

What Does the Maths National Curriculum Say about Algebra in Year 6?

In year 6 work on algebra, most children are expected to be able to use simple formulae and solve problems where there are missing numbers. Children are usually taught to solve simple equations with one unknown quantity and then build this to explore equations where there are two unknowns and can work out different pairs of numbers that satisfy the equation. In order to complete these tasks, your child needs to know how to substitute numbers into equations and work out answers.

What Is an Equation?

In algebra, we use equals 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 total the same amount as what is on the other side.

What Is Substitution?

Substitution is where we are told the value of a variable (letter) in an equation. We can replace the letter (substitute it) with the value to work out the answer. A simple example would be:

If $x = 4$, what is the value of $12 + x$?

We would write $12 + x = 16$ (because $12 + 4 = 16$).

What Is Order of Operations?

Order of operations is a rule, often referred to as BODMAS or BIDMAS, which tells your child in which order they should work out each step of a multi-step calculation. It stands for:

Brackets
Orders (or Indices)
Division
Multiplication
Addition
Subtraction



What Are Inverse Operations?

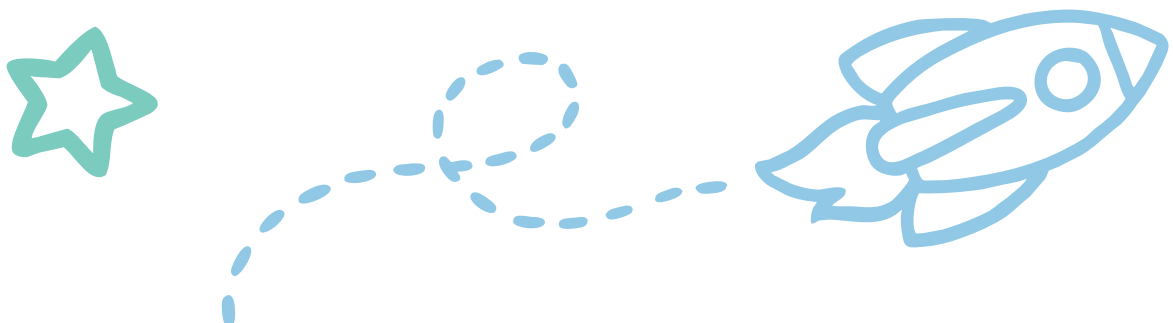
Inverse operations are calculations that undo each other by reversing the operation (e.g. $+$ is the inverse of $-$)

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

Starting with 8. If $8 \times 10 = 80$, then divide 80 by 10 to go back to 8 ($80 \div 10 = 8$)

What Does 'Satisfy an Equation with Two Unknowns' Mean?

If there are two unknowns (different letters) in an equation, there is more than one way of making the equation balance. For example, if $x + y = 12$, there are several possible values for x and y . x could be worth 1 and y worth 11. However, if x is 7 and y is 5, the equation is also satisfied. Children can practise this skill by drawing a simple two-line table to put their combinations in. These are easy to turn into a quick challenge for your child.



Countdown

Have you ever watched the television programme Countdown? Algebra relies on children being able to combine the four rules of number (+, -, \times and \div). Make up five large number cards (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**, 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

BODMAS

This helpful sheet guides you and your child through using the BODMAS order for working out multi-step equations. This means your child must work out the brackets first, then the powers (indices/orders), then division, then multiplication, then addition and lastly subtraction. Start with the one-star activity sheet first and then mark this using the helpful answer sheet, before letting your child move onto the next sheet. If you need more help to support your child in starting these activities, look up our helpful **BODMAS PowerPoint** which can be displayed on a computer or tablet screen and goes through each stage with a full explanation.



Step 2

Equations

Equations are mathematical expressions where one side equals the other side. Where there are two unknowns in an equation (usually shown by letters), there are often several answers that will make the equation balance (be equal on both sides). This activity supports your child in finding different combinations of numbers that will make equations work. Start with the one-star activity as always, talking your child through the first few so they feel really confident. Mark regularly as they work on through the first few and then allow your child to carry on independently.

Finding the nth Term in a Sequence

Step 3

Number sequences follow rules. These can be written in algebra (algebraic notation). When we want to find any term in a number sequence, we use a formula that describes the relationship between the position of the term and the value of the term. We call this the nth term formula. Every linear number sequence has its own nth term formula. This handy pack contains a support presentation to help you to learn alongside your child how to write the nth term formula and follow-up activity sheets to assess what has been learnt.

Algebra Challenge Cards

These activity cards can be displayed on a computer screen without the need to print. They encourage children who are confident with algebra to write equations that match the card descriptions. Other cards look at the different variables that can be used to make equations work.

Step 4

Step 5

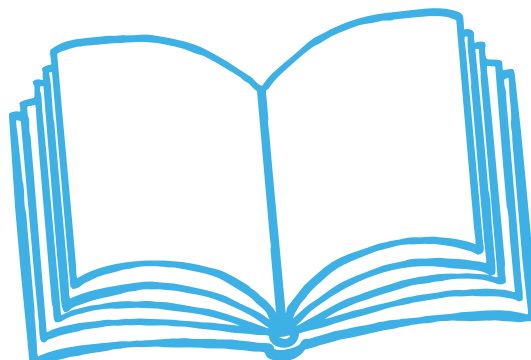
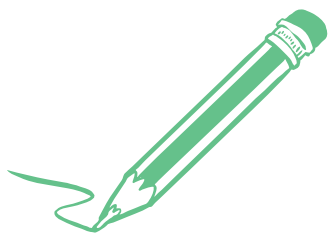
Algebra Year 6 SATs Survival

This colourful workbook reminds your child of the separate skills in algebra. If your child struggles with any aspect, try inputting 'year 6 algebra' into our lovely Twinkl search box. You'll find activity sheets that support each of these question types.

Algebra Assessment

Try using this assessment paper to check if there are any gaps in your child's algebra understanding. There's a helpful mark scheme too. Go back to Step 5 if your child needs to revisit any of the areas again.

Step 6

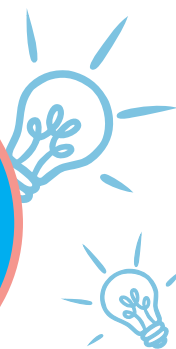


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Twinkl Book Club is our book subscription service. Enjoy our original works of fiction in beautiful printed form, delivered to you each half-term and yours to keep!



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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Boost



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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!

