Year 3 Problem-Solving and Games: A Step-by-Step Guide for Parents

This step-by-step explanation of problem-solving and games in maths 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. Whether your child is still finding their way with remembering times tables facts or whether they are already confident at solving maths problems, you will find the right step in this guide for you and your child to improve their maths performance and confidence while having fun.

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 However, please be aware that every child is different and information can quickly become out of date.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

Problem-Solving and Games

How Can Codebreaking Help Children with Maths?

The current national curriculum in England places an increased emphasis on mathematical thinking and reasoning. This means that children need to develop logical thinking to solve problems. Codebreaking requires children to make mental links to work out the answers to a puzzle. These connections are similar to those needed to solve algebra problems, which also form part of the primary national curriculum in England. Although children do not start working on formal algebra until later primary school years, practising the logical thinking of codebreaking helps to create mathematical fluency and, since it appears like a puzzle or game, it can really engage children.

Why Is Mathematical Reasoning Important?

Maths is not just about knowing how to find the answers to calculations. Maths is used in everyday life to solve problems, to buy and sell and to operate computers. It is important that children are not only able to 'get the right answer', but that they can also use and apply their mathematical knowledge and understanding. When children use mathematical reasoning, they think a problem through logically to find a method of solving it and then apply their mathematical knowledge and understanding to work out the solution.

What Times Tables Do Children Learn in Primary Schools?

In English schools, children learn times tables up to and including 12 × 12 = 144. For several years, some schools chose to teach tables only up to 10 × 10 = 100. However, teaching tables to twelve helps children with their understanding of time and with the transition from short multiplication to long multiplication.

DIY Bingo

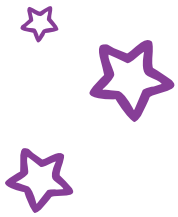
Make your own bingo game with your child. First, write the multiplication questions on separate pieces of paper and place them in a bowl. Then, make a 3 by 3 square bingo card each and write 9 of the answers onto it. Take it in turns to draw a question out of the bowl. If the answer is on your card, cross it off. The winner is the first person to cross off all their answers.

Silly Tables

Try chanting the times table being learnt together, over and over but using a different silly voice each time. You could take it in turns with your child to say one fact each, again in a silly voice. Perhaps your child could sing the times table to the tune of their favourite song. They could try it in the car but mustn't distract the driver!

Card Games

Try encouraging your child to play simple card games to get used to larger and smaller numbers. Using card games where one player's score can 'trump' those of the other players are great for encouraging your year 3 child to cope with larger numbers that become part of the curriculum in the junior years.



Step 1

Times Tables Game

In the junior years, times tables become a vital foundation for success in maths. Knowing tables and using them confidently is of great benefit to children in lower key stage 2. Consider printing out these **times tables games** and putting them into plastic ziplock folders so your child can easily keep the pieces, boards and instructions together. Many of the **times tables games** can be played individually or in a small group. A good strategy is for the family, including adults, to play each game a couple of times before handing over responsibility to your child. This helps to clarify the rules and gives you a baseline understanding of your child's strengths and weaknesses. If you play the game again after a few months, you will have a good idea of whether your child is improving.

Number Bonds Within 10

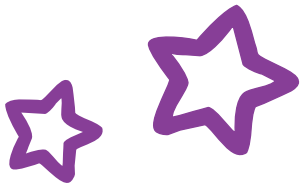
This familiar-looking game is an activity children are likely to love bringing out again and again. This is perfect because repeated opportunities to practise are the secret to children's rapid recall of the common times tables. Depending on when and where you went to school, you may have learnt tables up to 10 × 10. However, the current national curriculum for England expects children to have learnt their tables up to 12 × 12 by the end of year 4. There are good reasons for learning tables up to 12, including to help with work on the 12- and 24-hour clocks and as a strategy to support children as they learn the early stages of long multiplication.

Step 2

Step 3

Treasure Hunt Game

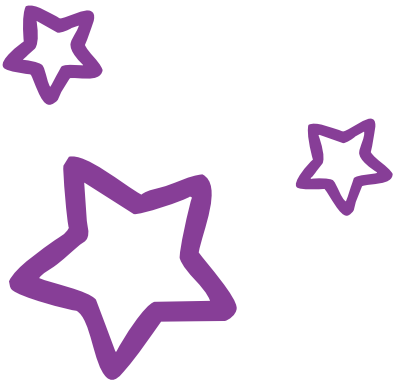
Coding is a technique that, while not a direct part of the maths curriculum, is a brilliant tool for getting your child's brain working in problem-solving mode. Thinking logically and puzzling out an answer step by step helps your child with mathematical reasoning and word problems. Print out all the sheets in colour before starting as some of the tasks use coloured patterns. If your child finds the task tricky, read through the pages with them and begin each task together. This way, they will have the confidence to continue alone. For a range of similar challenges, use the search term **ks2 code breaking**.



Step 4

Pirate Mystery Game

This pirate-themed maths game includes a range of problem-solving activities involving addition and subtraction, multiplication and division facts, comparing numbers - including decimal numbers - and telling the time on a 24-hour clock. You will find fun, engaging layouts and an entertaining story. Read the main story to your child and then talk about one of the follow-up tasks before they solve the mystery. Find similar games by entering the phrase **lks2 maths game** into the search bar.



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!