

A Guide to Helping Your Child with Year 1 Maths

In Year 1, your child will start to build confidence working with numbers, through developing their counting and calculation skills. They will also gain an understanding of halves and quarters, start to measure and tell the time, and learn about some 2D and 3D shapes. Your child will be taught to count forwards and backwards to 100, add and subtract numbers to 20, and be introduced to the idea of multiplying and dividing. They will be encouraged to use objects to help them solve simple problems in a practical way. Much of your child's learning will come from exploring and talking about maths in the world around them and there are lots of simple things you can do at home to support their development, such as:

- **Counting objects around the house**

When counting, encourage your child to point to each object, putting them in a row. For more than 10 objects, group into tens to see that, for example, 32 is 3 tens and 2 ones. Practise counting in twos, fives or tens using, for example, pairs of socks, fingers on hands or 10p coins.

- **Playing dice games**

Gather some objects – blocks, buttons, even biscuits! Roll two dice and find the total, using the objects to add practically. Or start with, say, 12 objects, roll a dice and subtract the number shown on the dice to find how many objects are left. The player with more objects wins.

- **Using toys**

Explore fractions using some of your child's favourite toys, for example teddies or cars. Ask your child to halve their toys by splitting them into two equal groups. So, for ten cars, make two groups of five. Similarly, practise finding one quarter by splitting toys into four equal groups.

Read on for how to support your child in each of the maths curriculum areas.

Number & place value

In Year 1, children will work with numbers up to 100, counting on or back from any number and in steps of 2, 5 or 10, including:

- reading and writing numerals to 100 and number names to 20 in words
- using objects and number lines to represent numbers
- finding one more and one less than any number.

How to help at home

1. Talk about numbers around us: numbers are everywhere, and they can tell us all sorts of different things. Some numbers tell us about an amount (for example, 'there are ten sweets in the jar'). Some tell us about position (for example, 'I finished the race in 2nd place'). And some are just labels (for example, 'we are waiting for the number 15 bus'). Talking about how numbers are used in the real world helps your child understand why they are important.

2. Count: your child needs to know why, how, and when to count. Practise counting orally through songs and rhymes like 'Ten Green Bottles', going forwards and backwards. Counting objects around the house is also a good way to make sure your child understands that each number name can represent an amount. Try counting in steps - you could count pairs of socks in twos, use your fingers to count in fives, or count 10p coins in tens.

3. It is important that your child understands what numbers *look* like, so it is helpful to represent numbers using objects and pictures. For example, to understand the number 3, we can represent it using the symbol, 3, but it is important to understand what three looks like as a quantity: count out three sticks or draw three pictures to help. Numbers can be made up of other numbers - three can be made of three ones, or a two and a one. Once they reach the teen numbers, we need to show that these are numbers made from one ten, plus several ones. For example, fifteen is made of one ten and five ones.

Addition & subtraction

In Year 1, children will be able to read, write and understand mathematical ideas using addition (+), subtraction (–) and equals (=) signs, including:

- making and using number bonds to 10 and then to 20
- adding and subtracting one-digit and two-digit numbers to 20, including 0
- solving simple problems using objects, drawings, diagrams and symbols, including missing number problems such as $7 = ? - 9$.

How to help at home

1. Play the Number Facts Pairs game

1. Write out the numbers 1 to 10 two times, making 20 separate number cards.
2. Turn the cards face down and pick one at random. This is the number you are going to try to make.
3. Now, take it in turns to pick up cards. Add each card you pick up together until you get to the target number. If you go too high, you can use your turn to put back one of the cards you have picked up, face down.
4. When a player reaches the target number, they win!

There are lots of fun variations of the game you could try. Why not add in higher numbers, or see how many targets you can reach within two minutes?

2. Focus on subtraction: encourage your child to relate subtraction to taking away by showing them how it works in everyday situations. For example, if your child has a handful of raisins, ask them how many they have. When they have eaten one, ask them how many they now have left. Do they have more raisins or fewer raisins? What happens if you eat two raisins at the same time? Using real objects or drawings and removing the ones that you want to subtract helps your child to visualise what subtracting really means.

3. Play dice games

There are lots of ways you can encourage your child to solve addition and subtraction problems practically – all you need are two dice. For example, start with a given number of objects, say 12. Then, take it in turns to roll a six-sided die. The first player to roll subtracts the number shown on the die from the 12 objects and works out how many they have left. They take away the objects they have subtracted. The next player will then roll the die, and takes away their number from the remaining pile of objects. Play continues until all objects are removed. The player with the most objects at the end of the game is the winner. You could ask the child to record a calculation for each roll of the die, such as $12 - 3 = 9$.

Alternatively, why not play board games with two dice? These offer a great opportunity to practise number bonds, as well as teaching other useful skills like counting and waiting for their turn.

4. Focus on counting on: help your child practise addition by combining two or more sets of objects. For example, if you have 4 grapes and your child has 7 grapes, ask them to find out how many grapes there are in total. To ensure that they count each grape accurately, it might be a good idea to ask your child to place the grapes in a row. Your child may be able to begin solving addition by 'counting on'. In this method, the child could start with the 4 grapes and then count on 7 more to find the total.

If your child likes collecting things, ask them how many they have already. Then ask them how many they would have if you gave them 2 more. This will encourage them to begin 'counting on' from the original amount, which is much quicker than counting every sticker!

5. Subtraction as difference: '10 – 8' can also be thought of as 'What is the difference between 10 and 8?'

Use objects to help your child understand the concept of difference. Ask your child to sort their toys into groups, and then see if they can figure out which groups have more or fewer objects? You could then ask them to compare two of the groups. What is the difference between your child's number of fluffy toys and their number of hard toys? What about the difference between their red toys and their blue toys? Putting the two groups next to each other in a line is a good way to quickly spot the difference between them.

Multiplication & division

In Year 1, children will be expected to be able to solve simple multiplication and division problems using objects, drawings and arrays to help them, including:

- counting in steps of 2, 5 and 10 and understanding that, for example 3×2 is the same as $2 + 2 + 2$
- using sharing and grouping to solve division problems
- beginning to understand the relationship between multiplication and division.

How to help at home

1. Practise multiplication: it may help your child to think of multiplication as repeated addition - when we multiply, we are adding the same amount each time. For example, 3×2 is the same as $2 + 2 + 2$. Using objects might help your child to understand adding objects that are grouped in 2s, 5s, and 10s. At home, you could use pairs of shoes or socks to practise counting in twos, gloves to count in fives, and ice cube trays to practise counting in tens. Help your child to draw pictures of the items they have counted and use these to practise counting in steps of 2, 5, or 10 at any time. Arrays are sets of objects arranged in rows and columns to make a rectangle. For example, egg boxes, muffin trays, ice cube trays, and chocolate bars with rows of pieces are all arrays. Baking is a great way to use arrays. For example, explain to your child that you need to make 12 muffins. Look at the baking tray. There are 3 rows and 4 columns. Count each column of 4 to show there are 12 holes in total. If we turn the tin around the other way it will be the same.

2. Try different methods of division: your child will begin to understand division as sharing and grouping. There are many easy ways you can support this at home:

Division by sharing:

- ask your child to practise division by sharing objects equally. For example, $8 \div 2$ could be solved by sharing 8 objects into 2 equal groups. Using objects such as your child's toys, items of food, or buttons helps them visualise what the calculation means and keeps them interested.
- Ask your child to find out how many objects there are to begin with. Can they share the objects equally between the two of you? Help them to share objects one at a time between the two groups. When all the objects have been shared, ask your child how many there are in each group. If you have the same number, explain that your child has shared the objects equally into two groups which is the same as dividing by two.
- If you do not have the same number, ask your child if the objects have been shared equally. For example, 'we started with 11 objects and shared them into two groups and I have 6 objects and you have 5 objects. Are they equal? If they are not equal then 11 cannot be shared equally into two groups so 11 cannot be divided by 2 equally using whole numbers or objects.'

Division by grouping

Ask your child to find out how many there are in a group of objects. Explain to them that you want to find out how many groups of two there are in the total group. Help your child to take two items at a time and count how many groups of two there are in the total number. For example, if you had 8 objects and wanted to divide by grouping this could be seen as 'How many groups of 2 are there in 8?'. Ask and support your child to explain that they have divided the 8 objects by grouping them in twos and finding out how many groups of 2 there are in the total group of 8 objects.

3. Use mathematical language: multiply, times, repeated addition, equal groups, and arrays. Division language includes divide, sharing equally, grouping equally, and arrays. You can help your child learn these terms by asking them to use this language to explain how they have solved a problem.

Fractions

In Year 1, children will be expected to be recognise, find and name halves and quarters of objects, shapes and quantities, including:

- understanding halving as sharing equally into two parts or groups
- understand finding a quarter as sharing into four equal parts or groups
- understanding that finding a half is the same as dividing by 2 and finding a quarter is the same as dividing by 4.

How to help at home

1. Fractions and food: food always provides a fun (and tasty) opportunity to explore fractions! When cutting a sandwich, show your child how you can cut a whole sandwich into two equal parts, and explain that we call each part a half. Point out that we could put the two halves together again to make the whole. Try halving in different ways, such as cutting into two equal rectangles or triangles. Show your child that we can find the quarters of a sandwich by first cutting it in half and then cutting those pieces in half again. Ask your child to find one of the equal parts and explain that this is one quarter.

2. Use toys: gather together a collection of toys. Show your child how to halve quantities by asking them to split their collection of toys into two equal groups. So, if they have ten cars, they can split them into two groups of five.

3. Drawing shapes - grab some paper and colouring pencils. Draw a circle, square, rectangle, and equal-sided triangle and ask them to find and colour in one half. Next, draw another shape and ask your child to colour in one quarter.

4. Point out the fractions all around you – such as when you are in the shops (for example, $\frac{1}{2}$ price offers) or in recipes ($\frac{1}{4}$ tablespoon) and so on. Talk about what the different numbers mean.

Geometry

In Year 1, children will identify simple flat (2D) and solid (3D) shapes and use mathematical vocabulary to describe position, direction and movement, including:

- recognising and name common 2D shapes, such as circles, triangles, rectangles and squares
- recognising and name common 3D shapes, such as spheres, pyramids, cones, cuboids and cubes
- describing whole, half, quarter and three-quarter turns.

How to help at home

1. Point out and ask your child to name common 2D and 3D shapes. For instance, can they name any 2D shapes in the patterns on your curtains, or in the pictures in their books? Your child should know that 2D shapes are completely flat. Many children may incorrectly say that items like coins are 2D shapes – be sure to explain that a coin is a 3D shape (a cylinder) because it has height and is a solid. Ask your child to relate everyday objects to 3D shapes: a ball is a sphere, a cereal box is a cuboid, a can is a cylinder, and so on. Encourage them to see shapes in different orientations and sizes.

2. Try to use the specific mathematical language when talking about shapes. For example, there is no 2D shape called a diamond. The shape your child might think is a diamond is either a square, a rhombus, or a kite. Try giving your child a 3D shape (for example, a cereal box) to touch and explore. Encourage them to use specific language such as straight, curved, edges, faces, and corners/vertices to describe it. For example: the cereal box is a cuboid. It has six faces and eight corners. All of its edges are straight. You could also try showing your child a cylinder and a cube and asking them to describe their similarities and differences. For example, while they are both 3D shapes, cylinders have two circular faces and a curved surface whereas cubes have six square faces.

3. You could play a game with 3D shapes and a bag that your child cannot see through: Hide a shape in the bag and ask your child to feel the shape. Ask your child to describe the shape as best they can and try to work out what it is. Once your child has told you what shape they think it is, take it out to see if they were correct. This will help children to begin visualising the shapes, which is an important skill they need to develop. If you're out and about, you can play a different version of this game. Think of a shape and prompt your child to ask you questions in order to guess the shape. You can only answer 'yes' or 'no'.

4. Try to find everyday opportunities to use the language of position, direction, and motion. For example: Left, right, top, middle, bottom, on top of, in front of, above, between, around, near, close and far, up, down, forwards, backwards, inside and outside. You could play a game with your child by hiding an object around the house for them to find. Encourage them to ask questions using the language mentioned above. For example: 'Is the object hidden inside a drawer?' 'If I move backwards, will I be closer to the hidden object?' Encourage your child to make or identify whole, half, quarter, and three-quarter turns in both directions. This will help them to understand angles, which are measurements of how much something turns.

Measurement

In Year 1, children will explore measurement in relation to length, height, weight, volume, time and money, including:

- measuring and comparing lengths, heights, weights and capacities
- telling the time to the hour and half hour
- recognising and knowing the value of different coins and notes.

How to help at home

1. You can have lots of fun helping your child compare and order objects by length or height. Suggest that they put all their soft toys or toy vehicles in order according to their height. Ask them to explain what they have done. Encourage your child to use the language taller, shorter, and longer if possible.
2. When you are out shopping, be sure to draw your child's attention to coins and notes. Point out prices in the supermarket and talk about which coins and notes we could use to pay for things. Seeing the money used will help them understand that each coin has a different value. Ask your child to find the totals using different combinations of coins. For example, could you make 20p using the coins in your hand?
3. When you are talking about time with your child, try to use "time" language like before, after, next, first, today, yesterday, tomorrow, morning, afternoon, and evening. If you frequently use this precise vocabulary, your child will pick it up in no time.
4. Make a calendar - ask your child to sequence all your family events in a typical day or week in a planner. Talk to them about different parts of the day, the days in a week, and even the months in a year. It could be useful to get into the habit of using a calendar with your child. As well as tracking weekly events like football practice, see if your child can find their birthday and other important dates.
5. Talk about standard units of measurement with your child:
 - centimetres and metres when measuring length
 - kilograms and grams when measuring weight/mass
 - litres and millilitres when measuring capacity/volume.

You could ask your child to identify standard units of measurement on cereal boxes, milk cartons, and shampoo bottles – measurements are everywhere around the house. You can also measure using non-standard measures. How many paces is it across the room? How many paperclips long is this book? What about this one? Which is longer?

6. Another great way to practise measurements is to give your child the opportunity to measure ingredients when you are cooking or baking. Identify the capacity/volume or mass/weight of ingredients you are using, either using scales or less formal methods like cupfuls. Discuss how and why we measure different ingredients with different units.