

Year Five Maths at Acton

The national curriculum states that in Year 5 there should be a focus on building a strong foundation for some of the more complex mathematical ideas that will eventually crop up at secondary school.

This includes, but is not limited to, securing knowledge in:

- **Place value** – Reading, writing, ordering and comparing numbers to at least 1,000,000 and determining the value of each digit.
- **Addition and subtraction** – Adding whole numbers with more than 4 digits using formal written methods.
- **Multiplication and division** – Multiplying and dividing numbers mentally, drawing upon known facts e.g. the times tables.
- **Fractions** – Multiplying proper fractions and mixed numbers by whole numbers.
- **Measurement** – Converting between different units of metric measure; calculating and comparing the area of rectangles.
- **Geometry** – Identifying 3-D shapes and drawing angles; identifying, describing and representing the position of a shape following a reflection or translation.

Talking to your child about maths throughout this turbulent time is crucial. They may begin to feel overwhelmed by all of this new knowledge being imparted upon them, and having a parent or carer to talk to will really help to ease this burden.

Many 9-year-olds and 10-year-olds will be going through an emotional change too. Friendship groups become more complicated and self-image comes into play. It can be a bumpy time for many, but having an open dialogue around challenges makes the journey much smoother. Fortunately, maths is a great tool for practising these kinds of conversations, and what follows is some of the key things your child will face in maths this year, so read up and get a firm understanding of what maths for Year 5 is all about!

Helping at Home with Addition and Subtraction in Year 5 Maths

By the end of Year 5, children should be able to add larger numbers using the formal written method, including four-digit numbers.

Here is an example of how to use the formal method of addition, broken down step by step. Having an example like this with you can be useful when your child is practising addition, so they have something to refer to if they get stuck.

$$232 + 95$$

First, write the addition out as it looks below.

$$\begin{array}{r} 232 \\ + 95 \\ \hline \end{array}$$

Now add each column, starting with the units.

$$\begin{array}{r} 232 \\ + 95 \\ \hline 7 \end{array}$$

If the addition is over 10, take the first digit over to the next column.

$$3 + 9 = 12$$

$$\begin{array}{r} 1 \\ 232 \\ + 95 \\ \hline 27 \end{array}$$

Don't forget to add the number you carried over when you calculate the next column.

$$\begin{array}{r} 1 \\ 232 \\ + 95 \\ \hline 327 \end{array}$$

Subtraction

Make sure you practise subtracting larger numbers too, using the steps here to solve calculations step-by-step.

$$182 - 37$$

First, write the subtraction out as it looks below.

$$\begin{array}{r} 182 \\ - 37 \\ \hline \end{array}$$

Now subtract each column, starting with the units.

$$\begin{array}{r} 182 \\ - 37 \\ \hline \end{array}$$

Hmmm. We can't subtract 7 from 2. It will go below zero.

When this happens, we carry over or exchange with the next column.

We borrow ten, so 80 becomes 70. You don't have to write the 0, because it's in the tens column already.

$$\begin{array}{r} 7 \\ 182 \\ - 37 \\ \hline 5 \end{array}$$

We put the ten that we borrowed next to the 2. Now it's 12.
 $12 - 7 = 5$

Continue to move left along the columns, subtracting as you go and carrying if necessary.

$$\begin{array}{r} 7 \\ 182 \\ - 37 \\ \hline 145 \end{array}$$

Helping at Home with Year 5 Multiplication and Division

Now is the time to clarify that tricky maths vocabulary. At this age your child should know their measurements from their multiplication, but there are still a number of other mathematical words and phrases that could cause issues down the line if they are not understood now.

Two of these terms are factors and products.

Factors and products might sound complicated, but they're actually a great way of talking about multiplication without getting bogged down in the numbers.

If you're feeling uncertain about factors and products, take a few minutes to look at this simple diagram which gives you some examples for each term.

| Product | Factor |
|---------|--|
| 12 | Two & Six Three & Four One & Twelve |
| 18 | Two & Nine Three & Six Two & Nine |
| 20 | Two & Ten Four & Five One & Twenty |
| 50 | Two & Twenty-five Five & Ten One & Fifty |

Helping at Home with Year 5 Fractions, Decimals and Percentages

It's important to know the equivalent decimals and percentages to some common fractions by Year 6, so make sure your child has a good grip on these:

| Fraction | Decimal | Percentage | Strategy (to find a fraction / % of an amount) |
|-----------------|---------|------------|---|
| $\frac{1}{2}$ | 0.5 | 50% | Divide by 2 |
| $\frac{1}{4}$ | 0.25 | 25% | Divide by 2, then divide by 2 |
| $\frac{3}{4}$ | 0.75 | 75% | Divide by 2, then divide result by 2, then multiply by 3 |
| $\frac{1}{5}$ | 0.2 | 20% | Divide by 5, OR divide by 10, then halve the result |
| $\frac{1}{10}$ | 0.1 | 10% | Divide by 10 |
| $\frac{1}{100}$ | 0.01 | 1% | Divide by 10, then divide the result by 10 OR divide by 100 |

Paper One of the KS2 SATs usually has at least one or two questions that test this knowledge. For example:

7

Tick the **two** numbers that are equivalent to $\frac{1}{4}$

Tick **two**.

0.25

0.75

$\frac{25}{100}$

0.5

$\frac{2}{5}$

1 mark

The arithmetic paper will also include some more simple questions on multiplying, dividing, adding and subtracting fractions.

Later on in Paper 2 and 3 (the reasoning papers) your child will encounter questions that not only ask them to compare fractions, decimals and percentages but solve problems with mixed numbers.

For these sorts of questions, a good understanding of the basics is key – if they already know that ‘half’ is the same as 0.5, your child will find it easier to work out how to express 3.5 as a fraction, for example.

Helping at Home with Year 5 Measurement

As is the way with getting older, the numbers just keep getting bigger, and this is no different in Year 5 maths lessons.

Measurements, in particular, is an area of maths where this is the case, and this usually means converting between smaller measurement units (like centimetres) to bigger units (like metres).

Switching between these units is a crucial skill at this age and can be incredibly useful later in life too.

Measurement is a great everyday maths topic

Even when you are just going about your daily routine, you may not realise just how many opportunities there are to help your 9-year-old or 10-year-old practise their measurement conversion skills.

One of the best opportunities for them to test their skills is with food and drink.

At any opportunity, point out the measurements of food and drink and ask your child to convert them to a bigger or smaller unit. This works both ways of course, so ask your child to challenge you too when they see fit.

Forming a habit of converting every number they see will give them great place value skills, and you’ll catch any misconceptions around decimals easily this way.

Helping at Home with Year 5 Geometry

Shape extends beyond simply recognising names and properties at this age. 9-year-olds need to know how to manipulate shapes on a grid. This is when accuracy skills come to the forefront, so make sure your child understands that reflection, rotation and translation all require a careful eye and a steady hand.

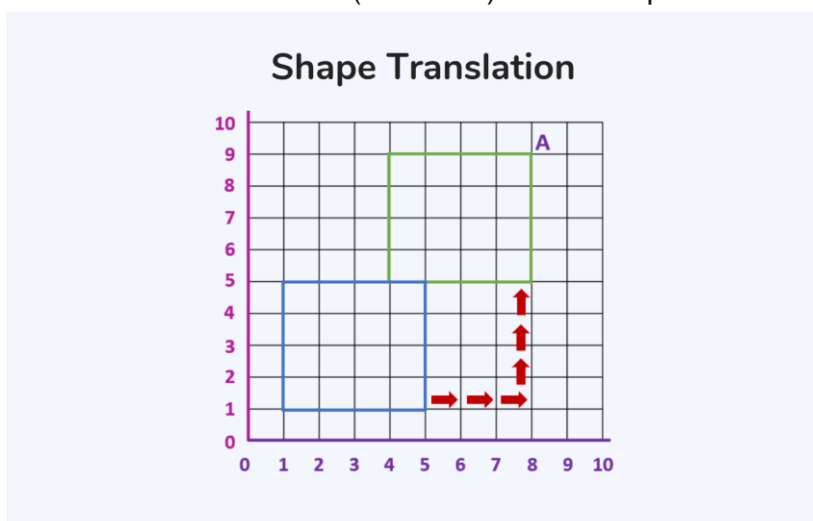
It's very common for children who have strong number skills to find these three processes difficult, so be patient and practise often.

Refer to real life uses of these skills whenever you can. Transformations play a key role in animating cartoons, helping planes to take off and even in sports strategy.

Year 5 shape transformation using translation

Translation is the more challenging transformation of the three because it requires careful attention (and who's careful when they're nine?).

This time, all you're doing is moving the shape around the grid (without turning it). The easiest way to do this is to look at each corner (or *vertex*) of the shape at a time and follow the instructions for translation for each one. This way, you slowly piece the shape back together (rather than trying to move the whole thing at once, which can get confusing quickly).



Please speak to your child's class teacher or visit:
<https://thirdspacelearning.com/> for further explanations and ideas