Year 5 Maths Curriculum:

Home Learning Toolkit For 9 Year Olds And 10 Year Olds:

What the Year 5 Maths curriculum says:

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all 4 operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

With so much maths being introduced, it's important to talk about it!
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 career 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, self-image comes into play and the very real pressure of exams looms on the horizon.
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 Year 5 Place Value

Once your child (and to an extent you) are feeling confident with most of the above place value topics, you can add prime numbers into the mix.
This may be tough maths for 9-year-olds, but nobody improves without being challenged!
For anyone who may have forgotten exactly what a prime number is, it can be classed as:
"A whole number that can not be made by multiplying other whole numbers together."
Or
"Any number that is divisible only by itself and 1."
Prime numbers include 2, 3, 5, 7, 11 etc.

Why not try challenging them to come up with as many numbers as possible that have only two factors (for example, the number *five* can only be made by multiplying *one* and *five*)? Or, alternatively you can have a race against your child to see which of you can name the most prime numbers in a minute. This is a good excuse to make sure your maths skills are still up to scratch as well!

Read more: Highest Common Factors and Lowest Common Multiples

If you find that your child is really struggling with the level of place value knowledge required in Year 5 it might be worth breaking things up a bit with some place value games. These are fun to do at home and will help you to build on their knowledge in a non-threatening way.

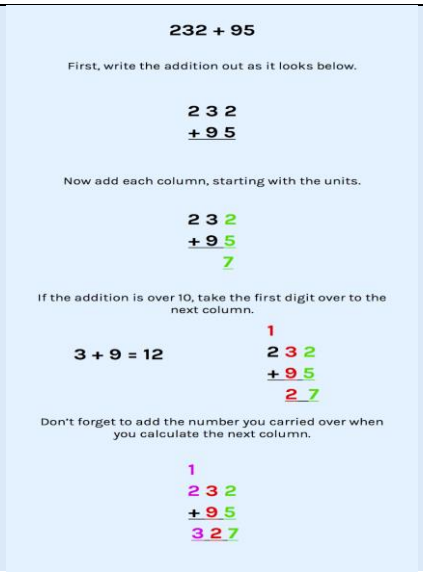
Year 5 Number and Place Value Activity: Prime numbers card game

Here is a great Year 5 maths activity that can help your child secure prime number knowledge using a deck of cards.
Step 1: Grab an ordinary deck of cards.
Step 2: Give each player half of the deck, but make sure they are dealt face down.
Step 3: Players take it in turns to flip a card over and place it in a pile in the middle. If the card that comes out is a prime number, the first person to exclaim *"Prime!"* wins the card and the rest of the stack.
Step 4: The winner is the player who manages to get the most cards when the game finishes. (We recommend ensuring that each game lasts for no longer than 5 minutes.)
Take a look at the video below to see how it works, and how you can bring a slight variation into the game if you want to speed it up!

Helping at Home with Addition and Subtraction in Year 5 Maths

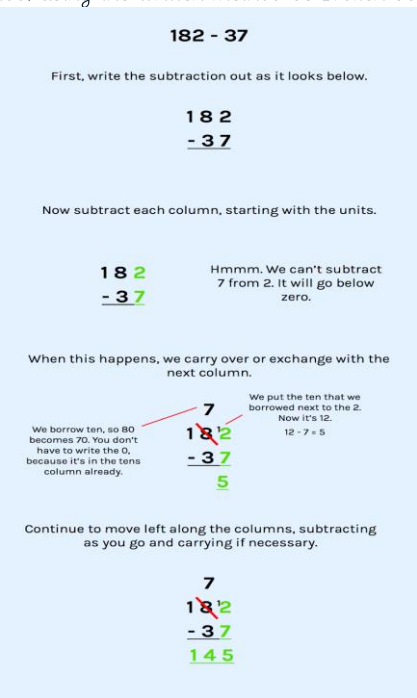
By the end of Year 5, children should be able to add larger numbers using the formal written method, including four-digit numbers.

Below 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.



Subtraction

Make sure you practise **subtracting** larger numbers too, using the written method as broken down below:



Being able to carry numbers over accurately is a key part of written addition and subtraction, so it's worth going over this with extra focus.

Multiplication and Division in Year 5 Maths

In Year 5, the national curriculum says that children will learn to:

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

Year 5 Multiplication and Addition Activity

To help secure factor and multiple knowledge in your child, It's really important to make sure you practise using these terms whenever you can. For example, if you say *twelve* (the product or answer), your child could answer *three and four*, or *two and six* (the factors, or numbers that multiply together to make the product).

Fractions, Decimals and Percentages in Year 5 Maths

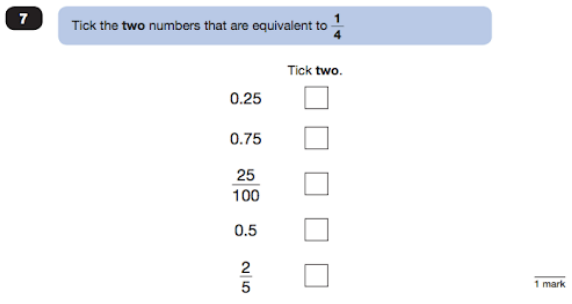
In Year 5, the national curriculum says that children will learn to:

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)
½	0.5	50%	Divide by 2
¼	0.25	25%	Divide by 2, then divide by 2
¾	0.75	75%	Divide by 2, then divide result by 2, then multiply by 3
⅕	0.2	20%	Divide by 5, OR divide by 10, then halve the result
1/10	0.1	10%	Divide by 10
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:



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.

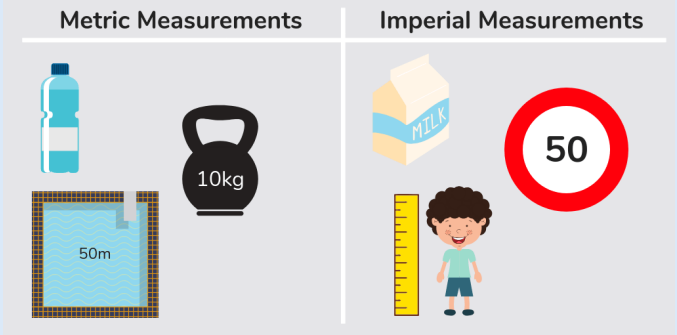
Read more: What are equivalent fractions?

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.

Year 5 Measurement Activity: Imperial versus Metric

Fortunately, the main focus of the current curriculum is on the metric system (which is nice and easy). But in Year 5, your child will need to know about imperial units like pints, pounds and inches too.
Although it only makes up a small part of the curriculum, it's worth explaining to your child that although we use the metric system for most things, there are still uses for imperial measurements (like pints of milk and gallons of petrol).
It's confusing for most people, so getting to 9 years of age and finding out about a completely different set of measurements is baffling to say the least.
The best way to clear this up is to show your child how each system is used in real life. When you go to the supermarket, point out which products use which system, when you are driving show them that speeds are measured in miles per hour, and encourage them to work out their own height in feet and inches.
This will help your child to conceptualise the two systems as side-by-side tools. You could even get them converting between the metric and imperial measures if they're feeling really confident.



Year 5 Measurement Activity: Practise telling the time together

As the world becomes more and more digital, many children are growing up not being able to read analog clocks.

But telling the time is an important part of Year 5 maths, so make sure your child practises reading analog clocks in everyday life.

It's as simple as reading the clock you walk past on the side of a building or a church.

You could ask them what time you need to leave the house to get to school on time or how long it is until their swimming lesson.

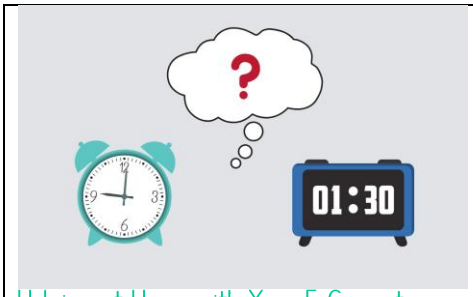
How else will they ever be able to read the iconic Big Ben?

But don't forget digital!

Children also need to know how to tell the time on 24-hour clocks, so if they're watching television or are on the computer, why not ask them to read the time to you or get them to work out how long it is until dinner?

If your child enjoys learning online, there are lots of fun interactive games and apps out there that they can use to practise telling time too, which cover everything from number lines to digital clocks, so your child can keep their knowledge refreshed and ready.

They often only take 5 or 10 minutes and are even free to access, but can make all the difference to your child developing their skills!



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 Geometry activity: Transformation of Shapes

Year 5 shape transformation using reflection
To begin with, practise reflection using a mirror.

To do this you'll need to:

Step 1: Draw a selection of shapes on a grid, leaving enough room at the side for the next step.
Step 2: Reflect the shapes you have drawn by placing a small mirror next to the shape.
Step 3: Draw the reflected shape at the same distance from the mirror line as the original shape.

Something to note- You can use the squares to help you, but in secondary school, your child will draw reflections without a grid. For now though, it's more important to get a solid understanding of the concept.

Year 5 shape transformation using rotation

A slightly trickier skill to master than reflection, rotation can be a great way to help your 9-year-old learn about shape transformation in a fun and interactive way.

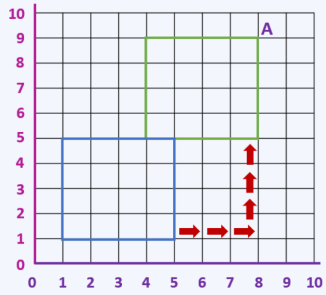
To do this you'll need to:

Step 1: Get some tracing paper and lay it over a piece of regular paper which has shapes on it.
Step 2: Draw on a square grid and use a ruler to copy the shape onto the tracing paper.
Step 3: Next, draw a dot to mark the centre of the grid.
Step 4: Match up this point with the centre of the grid and place your pencil on the dot. You'll be able to rotate the tracing paper around the grid to whichever position you want!

This is a great way to improve spatial awareness for rotation – the trick now is to practise drawing the rotated shape without the tracing paper.
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).

Shape Translation



Statistics in Year 5 Maths

ENGLAND: FA Cup			Draw
Quarter finals			
13.03. 19:45	**Chelsea**	Manchester United	1 : 0
12.03. 14:00	**Tottenham**	Millwall	6 : 0
11.03. 17:30	**Arsenal**	Lincoln City	5 : 0
11.03. 12:15	Middlesbrough	**Manchester City**	0 : 2
1/8-finals			
01.03. 19:45	**Manchester City**	Huddersfield	5 : 1
20.02. 19:55	Sutton	**Arsenal**	0 : 2
19.02. 16:15	Blackburn	**Manchester United**	1 : 2
19.02. 14:00	Fulham	**Tottenham**	0 : 3
18.02. 17:30	Wolves	**Chelsea**	0 : 2
18.02. 15:00	Huddersfield	Manchester City	0 : 0
18.02. 15:00	**Middlesbrough**	Oxford Utd	3 : 2
18.02. 15:00	**Millwall**	Leicester	1 : 0
18.02. 12:30	Burnley	**Lincoln City**	0 : 1

Use the table above to work out the answer to following questions:

Year 5 problem solving

The real world is full of problems that need to be solved on a daily basis, so now is a good time to get your 9 or 10-year-old ahead with some problem-solving practice!

After learning how to crunch the numbers, applying them to word problems provides a meatier challenge for those who need it.
Rather than being presented with endless sums that they can whizz through, this switch in format encourages independence and resilience.
Confident mathematicians might find this frustrating at first, but if you take your time together, you'll reap the reward of solving a tough problem.
The easiest way to make word problems more engaging is to own them. Take a look at a few word problems together and decide what makes a great word problem and what makes a terrible one.

You'll notice that some are very clear, whereas others have ambiguous wording.

It's necessary to identify this (even if you're not solving them right away) so that your child understands the importance of reading questions carefully.

Once you both know your way around a good word problem, have a go at writing them for each other. Try some 2-step word problems too.
Model working out the problems your child writes for you. If it's impossible to solve (perhaps there's not enough information), then talk about it.
Eventually, your child will be confident enough to write a word problem for their teacher (and we know that outsmarting your teacher is a major motivator when you're nine).