MIDDLETON PARISH CHURCH SCHOOL

'Excellence, Truth & Grace'

HOW CAN I HELP WITH MATHEMATICS IN YEAR 3?

Year 3 Mathematicians

Mathematics is an essential life skill. Developed across centuries, mathematics is key feature of many parts of the wider world from history to science, engineering to hospitality, retail and beyond. Most forms of employment require the use of mathematics in some form and it is necessary for financial literacy. With this in mind, it is essential that children are engaged in their mathematics learning and are able to see how it fits into the wider world and our every day lives. So what better place to do this than at home! It is essential that the learning which takes place at school is reinforced at home where possible so that children have as many opportunities as possible to secure their learning and remember more.

What can families do?

Maths skills can be developed at home by involving them in everyday activities such as baking, looking at the best supermarket deals or sharing out sweets equally. This also develops their problem solving and reasoning skills! Don't underestimate yourself, or the power you have as a parent getting involved in your child's learning.

- **A positive mindset is EVERYTHING!** You may find yourself from time to time saying 'I was never good at Maths.' Children will pick up and mirror this energy. We would advise parents and carers to use positive language such as 'It's fine to make mistakes, we all do' or 'It's ok that you find this tricky, let's look through it together.' Positivity can go a long way to improving their attitude towards Maths.

-**Use Maths talk every day.** This could be as simple as asking your child to count the chicken nuggets and asking them whether the number of nuggets is a multiple of a number and which one. You could further develop their knowledge by asking questions such as: if we had double the number how many would we have? What is we had half the amount?

-**Develop their memory skills.** It has been found that the younger generation have little need to memorise things such as phone numbers. Start off with something simple like memorising a phone number. Make a game out of it to help develop their memory skills. This will soon develop into memorising times tables, addition facts, subtraction facts and many other mathematical skills.

-**Play maths games together.** Games have always been a fun way to engage children in their learning and a great bonding tool between adults and their children. Simple counting games, or games linked to their current objective in Maths, can support the children in engaging in their learning and retaining what they have learned.

-**Numbers and shapes are EVERYWHERE.** Help your child to recognise that numbers and shapes are everywhere. Asking them what the shape of a sign is on a walk or what number they see on the sign can be really important in developing their knowledge of Maths in real life contexts. This could be developed further by asking questions such as: is that a 2D or 3D shape? Are those lines parallel or perpendicular?

TT Rockstars!

By the end of year 3, children will be expected to rapidly and fluently recall multiplication and division facts for the 2, 5, 10, 3, 4 and 8 times tables. To support this, we subscribe to Times Tables Rockstars to provide the children with a fun and engaging way of learning their tables facts. Each child has a login and there are a range of ways in which they can practise on the website. We would expect children to be logging into TT Rockstars to practise at least three times a week. If you have any further questions about this, please contact the Year 3 team at **year3@middletonparishce.rochdale.sch.uk.**

Doodle Maths

Doodle maths is a new tool for us at Parish. Each child has completed a baseline assessment which determines if they have any gaps in their learning. From here it then develops a bespoke programme of learning for each child so that they can close any gaps they have and enable them to become more confident mathematicians. Alongside this, class teachers are also able to set assignments for children to complete at home which further supports the learning taking place in class. All children have been given log-ins for Doodle maths and we expect children to be logging on to practise their mathematics at least three times a week. If you have any further questions about this, please contact the Year 3 team at **year3@middletonparishce.rochdale.sch.uk.**

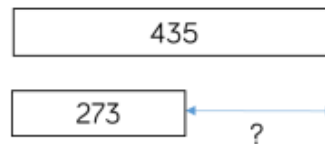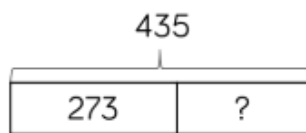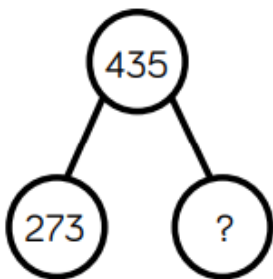| Skill: Add numbers with up to 3 digits	Year: 3
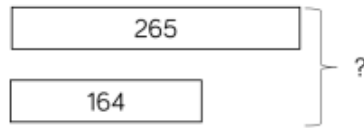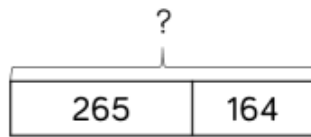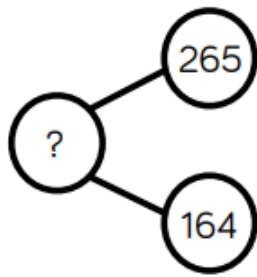
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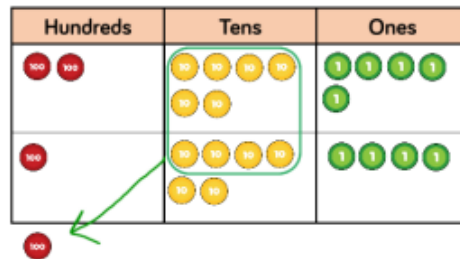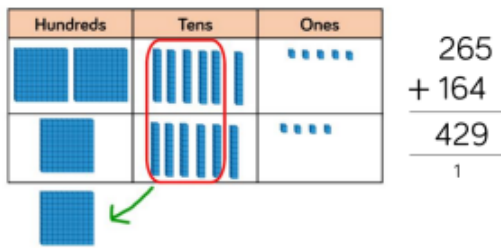
Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 3 digits.

Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method.

Plain counters on a place value grid can also be used to support learning.

Skill: Subtract numbers with up to 3 digits	Year: 3

$$435 - 273 = 162$$

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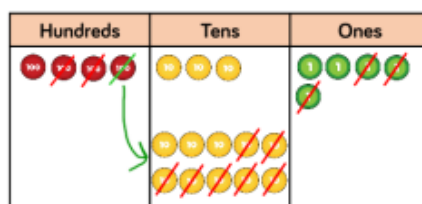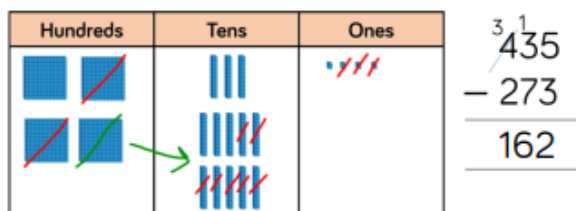
Plain counters on a place value grid can also be used to support learning.

Skill: Multiply 2-digit numbers by 1-digit numbers	Year: 3/4

$$34 \times 5 = 170$$

	H	T	O	
		3	4	
×			5	
		2	0	(5 × 4)
+	1	5	0	(5 × 30)
	1	7	0	

	H	T	O
		3	4
×			5
	1	7	0
		1	2

Informal methods and the expanded method are used in Year 3 before moving on to the short multiplication method in Year 4.
Place value counters should be used to support the understanding of the method rather than supporting the multiplication, as children should use times table knowledge.

Skill: Divide 2-digits by 1-digit (sharing with no exchange)	Year: 3

$$48 \div 2 = 24$$

When dividing larger numbers, children can use manipulatives that allow them to partition into tens and ones.

Straws, Base 10 and place value counters can all be used to share numbers into equal groups.

Part-whole models can provide children with a clear written method that matches the concrete representation.

Skill: Divide 2-digits by 1-digit (sharing with exchange)	Year: 3/4

$$52 \div 4 = 13$$

$$10 + 3 = 13$$

When dividing numbers involving an exchange, children can use Base 10 and place value counters to exchange one ten for ten ones.
Children should start with the equipment outside the place value grid before sharing the tens and ones equally between the rows.

Flexible partitioning in a part-whole model supports this method.

Fluency and Rapid Recall of Number Facts

In order for children to become confident mathematicians and to be able to solve problems confidently, it is essential that they can re-call all addition and subtraction facts within 20 and that they are able to rapidly recall their multiplication and related division facts. Below is the progression of these facts within the curriculum. As you can see, children should be able to recall all the addition and related subtraction facts by the time they reach the end of year 1. However, not all children learn at the same pace and it is therefore important that we continue to revise and then apply these facts in different contexts on a daily basis. If your child is able to confidently recall all of these facts, practise using them to find other related facts. For example, if I know that 2 + 3 = 5, I also know that 2 tens (20) + 3 tens (30) = 5 tens (50) and so on.

MIDDLETON PARISH
C H U R C H   S C H O O L

Mathematics Progression Map: Key Number Facts

	Autumn Term	Spring Term	Summer Term
Reception	• Manipulating Numbers in preparation for Spring onwards • 1+1 • 2+1 • 2+2 • 3+1	• Number bonds to 5 • 2+2 • 3+1 • 2+3 • 4+1 • 3+3 • 4+2 • 5+1 • 5+2 • 4+3 • 6+1 • 4+4 • 5+5	• Number bonds to 5 • Number bonds to 10 • 4+2 • 5 + 2 • 6 + 2 • 7 + 2 • 4 + 3 • 5 + 3 • 6 + 3
Year 1	• 3+8 • 3+9 • 4+7 • 4+8 • 4+9 • 6 + 6 • 7 + 7 • 8 + 8 • 9 + 9 • 8 + 7 • 8 + 9	• 5 + 9 • 6 + 9 • 7 + 9 • 5 + 7 • 5 + 8 • 6 + 8 • 5 + 4 • 5 + 6 • 6 + 7 • 8 + 7 • 8 + 9 • 4 + 9	• X10 tables Consolidation of all previously taught facts
Year 2	• x5 tables • x2 tables	• Revise x2, x5 and x10 tables	• x3 tables **Consolidation of all previously taught facts making connections to facts within 100. For example: If I know that 6+4=10, I know that 60+40=100**
Year 3	• x4 tables • x8 tables	• Revise x8 tables • x11 tables	• x6 tables • Revise 3x, 4x, 8x, 11x and 6x

Practical Ways of Supporting Mathematics

One of the best ways in which to support your child's learning is to make it as practical as possible and to incorporate it into your every day routines. Here are some ways in which you could support your child's understanding of some of the mathematical concepts taught:

• **Fractions**—look at fractions in different context such as looking at a quarter, half, third of a pizza, number of sweets, pieces of fruit etc

• **Shape**—identify 2D and 3D shapes while on a walk, in the house, out shopping etc. Can you find me a cube/triangle etc.

• **Time**—Discuss different elements of your daily routines asking them to tell you how long it would take in hours/minutes seconds etc. If there are three weeks until half-term, how many days is that?

• **Money**—ask them to help you calculate the cost of a small number of items in the shop and calculate how much change you might receive if you paid with a five/ten/twenty pound note etc

• **Times tables**—scour You Tube for some catchy songs to help learn each of the times tables

• **Measurement**—bake or cook together and ask them to read the scales whilst baking/cooking. What do we measure...in? Discuss different units of measure when in the car or in the swimming baths etc.

Maths – End of Year 3 Expectations
New National Curriculum Objectives

Number and Place Value	count from 0 in multiples of 4, 8, 50 and 100;
	find 10 or 100 more or less than a given number
	compare and order numbers up to 1 000
	identify, represent and estimate numbers using different representations
	read and write numbers up to 1 000 in numerals and in words
	tell and write the time from an analogue clock, including using Roman numerals
	recognise the place value of each digit in a three digit number (hundreds, tens, ones)
	solve number problems and practical problems involving above ideas.
Addition and Subtraction	add and subtract numbers mentally, including: a three-digit number and ones / a three-digit number and tens / a three-digit number and hundreds
	add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction
	estimate the answer to a calculation and use inverse operations to check answers
	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
Multiplication and Division	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one digit numbers, using mental and progressing to formal written methods
	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
	solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects
Fractions, Decimals and Percentages	count up and down in tenths
	recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
	recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.
	Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
	compare and order unit fractions, and fractions with the same denominators
	recognise and show, using diagrams, equivalent fractions with small denominators
	add and subtract fractions with the same denominator within one whole. E.g one seventh + 3 sevenths = 4 sevenths.
	Solve problems that involve all of the above using fractions.
Measurement	compare durations of events, for example to calculate the time taken by particular events or tasks
	add and subtract amounts of **money** to give change, using both £ and p in practical contexts
	measure, compare, add and subtract: **lengths** (m/cm/mm); **mass** (kg/g); **volume/capacity** (l/ml)
	measure the **perimeter** of simple 2-D shapes
	know the number of seconds in a minute and the number of days in each month, year and leap year
	measure, compare, add & subtract using common metric measures
Telling the time	estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight
	tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
	estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight
Geometry Shape and Position	draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them
	recognise angles as a property of shape or a description of a turn
	identify right angles, recognise that two right angles make a half turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle
	identify horizontal and vertical lines and pairs of perpendicular and parallel lines
Statistics	interpret and present data using bar charts, pictograms and tables
	solve one-step and two step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.