



### Year 4 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 prime number or not. You could further develop their knowledge by asking questions such as: if this is a composite number, what are the factor pairs?

**-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 this a multiple of another number? If you divided that number by 100, what number would you now have?

### TT Rockstars!

By the end of year 4 children are expected to rapidly and fluently recall multiplication and division facts for all of the times tables up to 12 x



12. 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. This will ensure that they are well prepared when it comes to the Multiplication Tables Check that year 4 pupils sit in June. We encourage you to spend time practising the re-call of these facts with your children regularly. If you have any further questions about this, please contact the Year 4 team at [year4@middletonparishce.rochdale.sch.uk](mailto:year4@middletonparishce.rochdale.sch.uk).

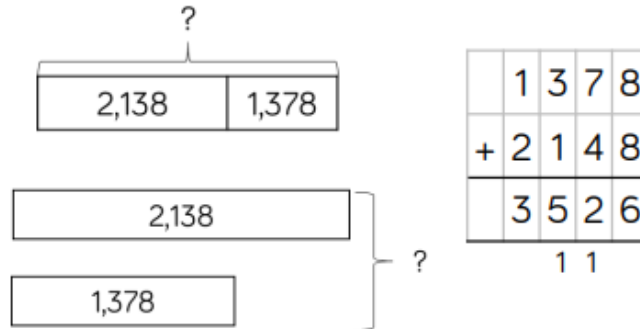
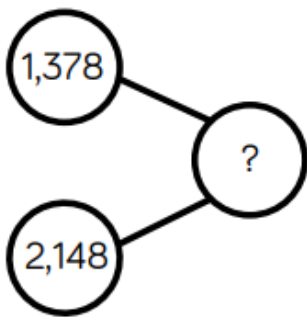
### Doodle Maths

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 4 team at [year4@middletonparishce.rochdale.sch.uk](mailto:year4@middletonparishce.rochdale.sch.uk).

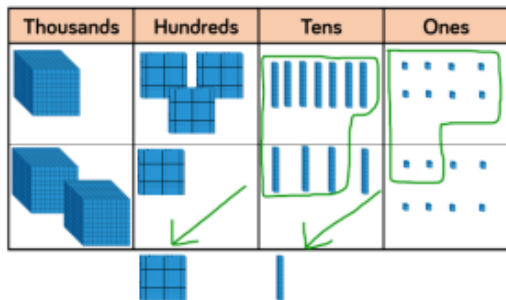


**Skill: Add numbers with up to 4 digits**

**Year: 4**



**$1,378 + 2,148 = 3,526$**



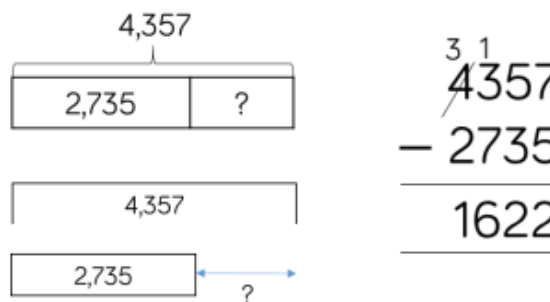
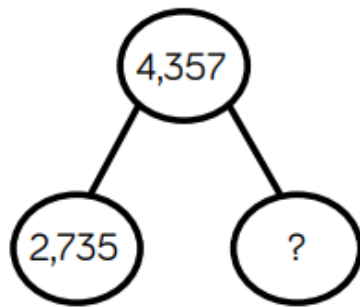
Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 4 digits.

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

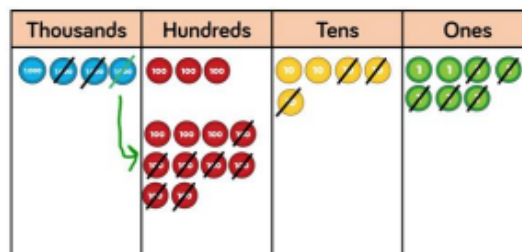
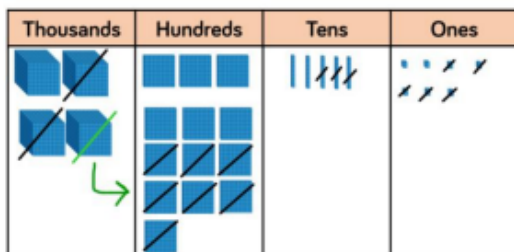
Plain counters on a place value grid can also be used to support learning.

**Skill: Subtract numbers with up to 4 digits**

**Year: 4**



**$4,357 - 2,735 = 1,622$**



Base 10 and place value counters are the most effective manipulatives when subtracting numbers with up to 4 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: Multiply 2-digit numbers by 1-digit numbers

Year: 3/4

$34 \times 5 = 170$

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 exchange)

Year: 3/4

$52 \div 4 = 13$

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.

### Skill: Multiply 3-digit numbers by 1-digit numbers

Year: 4

$245 \times 4 = 980$

When moving to 3-digit by 1-digit multiplication, encourage children to move towards the short, formal written method. Base 10 and place value counters continue to support the understanding of the written method. Limit the number of exchanges needed in the questions and move children away from resources when multiplying larger numbers.

### Skill: Divide 2-digits by 1-digit (sharing with remainders)

Year: 3/4

$53 \div 4 = 13 \text{ r}1$

When dividing numbers with remainders, children can use Base 10 and place value counters to exchange one ten for ten ones. Starting with the equipment outside the place value grid will highlight remainders, as they will be left outside the grid once the equal groups have been made. 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 2 hundreds (200) + 3 hundreds (300) = 5 hundreds (500) and so on.



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## Mathematics Progression Map: Key Number Facts

|           | Autumn Term   | Spring Term   | Summer Term  |
|-----------|---|---|--|
| Reception | <ul style="list-style-type: none"> <li>Manipulating Numbers in preparation for Spring onwards</li> <li>1+1</li> <li>2+1</li> <li>2+2</li> <li>3+1</li> </ul>                            | <ul style="list-style-type: none"> <li>Number bonds to 5</li> <li>2+2</li> <li>3+1</li> <li>2+3</li> <li>4+1</li> <li>3+3</li> <li>4+2</li> <li>5+1</li> <li>5+2</li> <li>4+3</li> <li>6+1</li> <li>4+4</li> <li>5+5</li> </ul> | <ul style="list-style-type: none"> <li>Number bonds to 5</li> <li>Number bonds to 10</li> <li>4+2</li> <li>5+2</li> <li>6+2</li> <li>7+2</li> <li>4+3</li> <li>5+3</li> <li>6+3</li> </ul>   |
| Year 1    | <ul style="list-style-type: none"> <li>3+8</li> <li>3+9</li> <li>4+7</li> <li>4+8</li> <li>4+9</li> <li>6+6</li> <li>7+7</li> <li>8+8</li> <li>9+9</li> <li>8+7</li> <li>8+9</li> </ul> | <ul style="list-style-type: none"> <li>5+9</li> <li>6+9</li> <li>7+9</li> <li>5+7</li> <li>5+8</li> <li>6+8</li> <li>5+4</li> <li>5+6</li> <li>6+7</li> <li>8+7</li> <li>8+9</li> <li>4+9</li> </ul>                            | <ul style="list-style-type: none"> <li>X10 tables</li> </ul> <p>Consolidation of all previously taught facts</p>   |
| Year 2    | <ul style="list-style-type: none"> <li>x5 tables</li> <li>x2 tables</li> </ul>  | <ul style="list-style-type: none"> <li>Revise x2, x5 and x10 tables</li> </ul>  | <ul style="list-style-type: none"> <li>x3 tables</li> </ul> <p><b>Consolidation of all previously taught facts making connections to facts within 100. For example: If I know that <math>6+4=10</math>, I know that <math>60+40=100</math></b></p> |
| Year 3    | <ul style="list-style-type: none"> <li>x4 tables</li> <li>x8 tables</li> </ul>  | <ul style="list-style-type: none"> <li>Revise x8 tables</li> <li>x11 tables</li> </ul>  | <ul style="list-style-type: none"> <li>x6 tables</li> <li>Revise 3x, 4x, 8x, 11x and 6x</li> </ul>   |
| Year 4    | <ul style="list-style-type: none"> <li>x9 tables</li> <li>x12 tables</li> </ul>   | <ul style="list-style-type: none"> <li>x7 tables</li> <li>Revise x9, x12 and x7 tables</li> </ul>   | <ul style="list-style-type: none"> <li>All tables</li> </ul>   |

## 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, amounts of different objects.
- **Shape**—identify 2D and 3D shapes while on a walk and ask them how they know or find parallel and perpendicular lines.
- **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



| Maths – End of Year 4 Expectations   |  |
|--|--|
| New National Curriculum Objectives   |  |
| Number and Place Value   | count backwards through zero to include negative numbers   |
|  | count in multiples of 6, 7, 9, 25 and 1 000  |
|  | find 1 000 more or less than a given number  |
|  | order and compare numbers beyond 1 000   |
|  | compare numbers with the same number of decimal places up to two decimal places  |
|  | identify, represent and estimate numbers using different representations   |
|  | read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.  |
|  | recognise the place value of each digit in a four-digit number (   |
|  | find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths  |
|  | round any number to the nearest 10, 100 or 1 000   |
|  | round decimals with one decimal place to the nearest whole number  |
|  | solve number and practical problems that involve all of the above and with increasingly large positive numbers   |
| Addition and Subtraction   | add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate   |
|  | estimate and use inverse operations to check answers to a calculation  |
|  | solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why   |
| Multiplication and Division  | recall multiplication and division facts for multiplication tables up to $12 \times 12$  |
|  | multiply two-digit and three-digit numbers by a one digit number using formal written layout   |
|  | use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers   |
|  | recognise and use factor pairs and commutativity in mental calculations  |
|  | solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects |
| Fractions, decimals and Percentages  | count up and down in hundredths  |
|  | recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten  |
|  | compare numbers with the same number of decimal places up to two decimal places  |
|  | round decimals with one decimal place to the nearest whole number  |
|  | recognise and show, using diagrams, families of common equivalent fractions  |
|  | recognise and write decimal equivalents of any number of tenths or hundredths  |
|  | recognise fraction and decimal equivalence $\frac{1}{4}$ , $\frac{2}{4}$ , $\frac{3}{4}$   |
|  | add and subtract fractions with the same denominator   |
| find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths |  |
| Algebra  | Perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit.  |
| Measurement and Time   | estimate, compare and calculate different measures, including money in pounds and pence  |
|  | measure and calculate the <b>perimeter</b> of a rectilinear figure   |
|  | find the area of <b>rectilinear</b> shapes by counting squares   |
|  | read, write and convert time between analogue and digital 12 and 24-hour clocks  |
|  | solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days  |
|  | convert between different units of measure (e.g. kilometre to metre; hour to minute)   |
|  | read, write and convert time between analogue and digital 12 and 24-hour clocks  |
| Geometry Shape and Position  | identify lines of symmetry in 2-D shapes presented in different orientations   |
|  | complete a simple symmetric figure with respect to a specific line of symmetry   |
|  | compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes   |
|  | identify acute and obtuse angles and compare and order angles up to two right angles by size   |
|  | describe positions on a 2-D grid as coordinates in the first quadrant  |
|  | describe movements between positions as translations of a given unit to the left/right and up/down   |
|  | plot specified points and draw sides to complete a given polygon   |
| 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.  |