

# Maths in Year 3



Studlands Rise First School  
First Steps on the Learning Journey



## How to Help at Home

### Working mathematically

By the end of year 3, children will talk about their mathematics using the numbers they are familiar with, applying their understanding of number, measures and shape to a greater range of problems. They will make decisions about calculations and information that is needed to solve problems, for example when a recipe for two people needs to be doubled to make a recipe for four. Children will be expected to prove their thinking through pictures, jottings and conversations. They will be encouraged to pose their own questions, working in an organised way to solve them which will help pupils to identify common patterns or any errors more easily.

### Number

#### Counting and understanding numbers

Children will be very familiar with numbers that have 3 digits and will have experienced many opportunities to order, compare and show them in different ways using apparatus such as a tape measure, a 100 grid or money. Using their understanding of place value (how the value of each digit changes depending on its position in the number), children will be able to partition (break and make) numbers in different ways e.g.  $234 = 200$  and  $30$  and  $4$ ;  $100$  and  $100$  and  $20$  and  $10$  and  $4$ ; or  $200$  and  $20$  and  $14$ . They will develop a secure understanding of numbers up to  $1000$  and will count beyond it in  $1$ s,  $10$ s and  $100$ s. They will use this counting to help find  $10$  or  $100$  more than any given number.

Children will be introduced to numbers with one decimal place and will count up and down in tenths; share groups of objects or shapes into tenths and represent these in pictures and using hands-on resources.

Children will count forwards and backwards from  $0$  in steps of  $4$ ,  $8$ ,  $50$  and  $100$  and link this to multiplication and division. They will also count in  $3$ s to help maintain their fluency from Year 2.

#### Calculating

Children will continue to develop their mental calculation skills to add and subtract combinations of three-digit numbers e.g.  $248 \pm 8$ ;  $319 \pm 40$ ;  $428 \pm 200$ . They will develop their range of strategies using jottings (sketches and notes to help them remember the steps) and number lines to help them understand how each calculation works. Children will share their methods with others to help them see which work best, are quickest and most accurate. Children will understand the importance of estimation when calculating to see if their answer is reasonable or not. They will recall their multiplication and division facts for  $3$ ,  $4$  and  $8$ x tables and be supported to see the links between the  $2$ ,  $4$  and  $8$ x tables. They explore patterns and rules for the times tables they learn and will use pictures and objects to support their understanding. They will also learn that multiplication can be done in any order e.g.  $3 \times 4 \times 2 = 2 \times 3 \times 4$ .

Children will be introduced to more formal methods of recording addition and subtraction, including column methods. They will use hands-on resources to secure their understanding of these methods. This will be applied to numbers up to three digits. Children who become very adept at these calculations will be stretched through problems such as those involving missing numbers so that they know when, if and why they need to use these methods.

Children will develop their understanding of multiplication and division and apply their times table knowledge to multiply  $2$ -digit by  $1$ -digit numbers using the skills of partitioning

(breaking and making numbers). For example,  $43 \times 5$  can also be thought of as  $40 \times 5$  and  $3 \times 5$  or  $(4 \times 5 \times 10) + (3 \times 5)$ . They will move from informal methods of calculating multiplication and division to formal written methods i.e. short column multiplication and be supported by using hands-on resources.

- **Fractions**

Children will develop their understanding of fractions and decimals and will be introduced to tenths. They will count and understand tenths as ten equal parts as well as through dividing sets of objects into ten equal parts / groups. They will find and write fractions of objects using their multiplication tables knowledge, e.g.  $\frac{1}{5}$  of a group of 20 buttons can be solved by  $20 \div 5 = 4$ , and will continue to explore equivalent fractions using diagrams to explain their understanding e.g.  $\frac{2}{4}$  is equivalent to or of equal value to  $\frac{4}{8}$ . They will also begin to add and subtract fractions where the denominator is the same e.g.  $\frac{4}{6} + \frac{1}{6} = \frac{5}{6}$ .

**Measurement**

Children will continue to measure, compare, add and subtract measurements and progress to mixed units e.g. expressing amounts as litres and millilitres – 2 litres 400ml. They will measure the perimeter of 2-D shapes and will continue to add and subtract amounts of money including giving change. Children will estimate and read time to the nearest minute on analogue and digital clock faces. They will be introduced to the Roman numerals I to XII to help with this. Problem solving and calculating with time will involve comparing the duration of events such as the length of favourite television programme or journeys to school. They will use language with increasing accuracy, such as seconds, minutes and hours; o'clock, a.m. / p.m., morning, afternoon, noon and midnight. They will need to recall the number of seconds in a minute and the number of days in each month, year and leap year.

**Geometry**

Children will accurately draw 2-D shapes with rulers measuring sides accurately.

They will make 3-D shapes to help them understand how they are composed and will recognise 3-D shapes in a range of places and contexts (e.g. buildings, packages) and use correct mathematical vocabulary to describe them. They will learn what a right angle is and know that two right angles make a half-turn, three make three quarters of a turn and four a complete turn as well as identify whether angles are greater than or less than a right angle. They will also be able to identify horizontal and vertical lines and pairs of perpendicular (L) and parallel lines (=).

**Statistics**

Children will collect, organise, answer and pose questions about information using bar charts, pictograms and tables to answer questions such as 'how many more children prefer football to cricket?'

## Fun Activities to do at Home

**Counting and Understanding Number**

- When out for a walk, look for 3-digit numbers, such as on houses, shop fronts, prices, etc. Ask your child to tell you what the number is, and discuss the value of each digit. For example, in the number 236, the 2 is worth 2 hundreds or 200, the 3 is worth 3 tens or 30, and the 6 is worth 6 units. Ask what number is 10/100 more?

- Weather reports are a good place to find numbers with one decimal place – the temperature is often reported this way. Can your child read the number and explain the place value of each digit? What would the temperature be if it rises/drops by 1 degree/ 0.5 degrees, etc.?
- Support your child to learn their 4 and 8 times tables. See if you can make up some fun rhymes to support this.

**Calculating**

- Roll 3 dice to make a 3-digit number. Repeat. Can your child add these numbers together? Can they subtract the numbers? Discuss the methods they choose.
- Practise all of the times tables with your child. Say them forwards and backwards. Ask your child some questions such as 'what is 7 times 3?' or 'what is  $4 \times 8$ ?'
- Use multiplication in real life contexts. For example, how many wheels would there be on 6 cars parked in a garage? How many fingers would 8 people have?
- Use division as the inverse of multiplication by asking your child questions such as, 'there were 64 wheels in the garage. How many cars were there?'

**Fractions**

- When serving a meal talk to your child about what fraction of a pie/pizza/cake is being served to each person. Can they add these fractions together to work out how much of the food is being used altogether? Can they identify any equivalent fractions?

**Measurement**

- Get children involved in cooking with you – reading scales and working out the weight of different ingredients.
- When wrapping gifts your child could work out how much ribbon will be needed to go round a gift to reinforce their knowledge of perimeter.
- Children can read timetables to calculate the length of journeys and identify the quickest route for a journey that you are planning.
- Ask children to work out the cost of items when you are shopping. Can they mentally work out the cost of 2 items? How much change will you get from £5?

**Geometry**

- Undo packaging to look at nets of 3D shapes with your child. Can they make packaging for a particular item that you have eg a cup? How big will it need to be? What 2D shapes will make up the packaging?
- Identify horizontal, vertical and perpendicular lines whilst you are out with your child. There are numerous opportunities whilst waiting for a train at a station!
- Look at objects in the house. Which of them contain right angles? Where can your child see objects that contain angles that are smaller than a right angle? What about objects containing angles that are larger than a right angle?

**Statistics**

- Newspapers and magazines often have graphs or charts that you can ask your child about. What information can they interpret from the graph? What was the most/least popular ...? How many more people liked ... than ...?
- Your child could survey members of the family about their favourite sport/hobby/colour and create their own graph that you can ask them questions about.