The new Mathematics curriculum

What's changed?

Much of the publicity about the changes to the curriculum has focused on 'higher expectations' in various subjects, and it is certainly the case that in some areas the content of the new primary curriculum is significantly more demanding than in the past. For example, in mathematics there is now much greater focus on the skills of arithmetic and also on working with fractions

This booklet is designed to help you to understand some of the key milestones for each year group. Further detailed information about how we specifically teach these areas is contained within our calculation policy which is available on our school website. Go to:

ABOUT US > POLICIES > CALCULATION POLICIES

There is a separate calculation policy for each of the four operations (addition, subtraction, multiplication and division).

High Achievers

Please note that, if your child is achieving well, rather than moving on to the following year group's work our school encourages more in-depth and investigative work to allow a greater mastery and understanding of concepts and ideas. We appreciate your help in consolidating your child's understanding rather than moving quickly to the next year group's objectives.

Mathematics in Year 3

During the years of lower Key Stage 2 (Year 3 and Year 4), the focus of mathematics is on the mastery of the four operations (addition, subtraction, multiplication and division) so that children can carry out calculations mentally, and using written methods. In Year 3 your child will be introduced to the standard written column methods of addition and subtraction.

Number and Place Value

- Count in multiples of 4, 8, 50 and 100
- Recognise the place value of digits in three-digit numbers (using 100, 10s and 1s)
- Read and write numbers up to 1,000 using digits and words
- Compare and order numbers up to 1,000

Calculations

- Add and subtract numbers mentally, inc. adding either 1s, 10s or units to a 3-digit number
- Use the standard column method for addition and subtraction for up to three digits
- Estimate the answers to calculations, and use inverse calculations to check the answers
- Learn the 3x, 4x and 8x tables and the related division facts, e.g. 56 ÷ 8 = 7
- Begin to solve multiplication and division problems with two-digit numbers

Fractions

Equivalent fractions are fractions which have the same value, e.g. 1/2 and 3/6

- Understand and use tenths, including counting in tenths
- Recognise and show equivalent fractions with small denominators
- Add and subtract simple fractions worth less than one, e.g. 1/7+5/7 = 6/7
- Put a sequence of simple fractions into size order

Measurements

- Solve simple problems involving adding and subtracting measurements, e.g. length/weight
- Measure the perimeter of simple shapes
- Add and subtract amounts of money, including giving change
- Tell the time to the nearest minute using an analogue clock
- Use vocabulary about time, including a.m. and p.m., hours, minutes and seconds
- Know the number of seconds in a minute and the number of days in a year or leap year

Shape and Position

- Draw familiar 2D shapes and make familiar 3D shape models
- Recognise right angles, and know that these are a 1/4 turn, with four making a whole turn
- Identify whether an angle is greater than, less than or equal to a right angle
- Identify horizontal, vertical, perpendicular and parallel lines

Parallel lines are those which run alongside each other and never meet.
Perpendicular lines cross over each other meeting exactly at right angles.

Graphs and Data

- Present and understand data in bar charts, tables and pictograms
- Answer questions about bar charts that compare two pieces of information

Mathematics in Year 4

By the end of Year 4, children will be expected to know all of their times tables up to 12 x 12 off by heart. This means not only recalling them in order but also being able to answer any times table question at random, and also knowing the related division facts. For example, in knowing that 6 x 8 = 48, children can also know the related facts that 8 x 6 = 48 and that 48 ÷ 6 = 8 and 48 ÷ 8 = 6. This expertise will be particularly useful when solving larger problems and working with fractions.

Number and Place Value

- Count in multiples of 6, 7, 9, 25 and 1,000
- Count backwards, including using negative numbers
- Recognise the place value in numbers of four digits (1000s, 100s, 10s and 1s)
- Put larger numbers in order, including those greater than 1,000
- Round any number to the nearest 10, 100 or 1,000
- Read Roman numbers up to 100

Roman Numerals' Basics:
I = 1 ; V = 5 ; X = 10 ; L = 50 ; C = 100
Letters can be combined to make larger numbers. If a smaller value appears in front of a larger one then it is subtracted, e.g. IV (5 - 1) means 4. If the larger value appears first then they are added, e.g. VI (5 + 1) means 6.

Calculations

- Use the standard method of column addition and subtraction for values up to four digits
- Solve two-step problems involving addition and subtraction
- Know the multiplication and division facts up to 12 x 12 = 144
- Use knowledge of place value, and multiplication/division facts to solve larger calculations
- Use factor pairs to solve mental calculations, e.g. knowing that 9 x 7 = 3 x 3 x 7
- Use the standard short multiplication method to multiply 3-digit numbers by 2-digit numbers

Fractions

- Use hundredths, including counting in hundredths
- Add and subtract fractions with the same denominator, e.g. 4/5+5/7
- Find the decimal value of any number of tenths or hundredths, for example 7/100 is 0.07
- Recognise the decimal equivalents of 1/4, 1/2, 3/4
- Divide one- or two-digit numbers by 10 or 100 to give decimal answers
- Round decimals to the nearest whole number
- Compare the size of numbers with up to two decimal places

Measurements

- Convert between different measures, such as kilometres to metres or hours to minutes
- Calculate the perimeter of shapes made of squares and rectangles
- Find the area of rectangular shapes by counting squares
- Read, write and convert times between analogue and digital clocks, inc. 24-hour clocks
- Solve problems that involve converting amounts of time, inc. minutes, hours, days, weeks, and months

Shape and Position

- Classify groups of shapes according to the properties, such as sides and angles
- Identify acute and obtuse angles
- Complete a simple symmetrical figure by drawing the reflected shape
- Use coordinates to describe the position of something on a standard grid
- Begin to describe movements on a grid by using left/right and up/down measures

Graphs and Data

- Construct and understand simple graphs using discrete and continuous data

Discrete data is data which is made up of separate values, such as eye colour or shoe size. Continuous data is that which appears on a range, such as height or temperature.

How can I help my child?

- Please use the calculation policy on our website if you are unsure about the methods that your child will use in school. You may be very surprised about how similar these are to when you were at school!

- Practising 'key facts' little and often is essential in helping your child to become s confident, efficient mathematician. By 'key fact' we mean things like times tables and number bonds (pairs of numbers which total 10 or 20). Much like getting your child to be able to write their name without having to think about it, if your child instantly knows their key facts they are then able to effectively solve more complex, multi-step problems as they progress through school. Unfortunately we can't tell you the best way to reinforce these key facts with your child because everyone learns in different ways.

However, your child may…

- Love times table songs (such as the 'Bees Knees' times table songs on Youtube or the 'Times Table Toons' on Mathletics)

- Enjoy practicing them on a computer (for example through the use of Mathletics or 'Hit the Button' (www.topmarks.co.uk/maths-games/hit-the-button))

- Like 'lift the flap' times table books which are widely available (Mr. Jensen's current favourite is the 'Pull-the-tab Times Tables Book' by Vivian Head)

- Love playing games to practise their key facts. For example, you can easily set up a game involving two dice (such as 'bingo', with you and your child having to multiply together the two numbers that are thrown before marking off this answer on a scorecard).

- Mathletics is also another brilliant way or practising the content for your child's year group in a very rewarding way. We even give out Mathletics certificates and trophies in school in order to encourage your child to do this regularly! Our school has fully funded access to this service which would otherwise cost you £39 per year.

- Please see either your child's class teacher or Mr. Jensen if you have any queries about the expectations for your child. We'll do our best to help!