Hillcross Primary School
Parent and Carer's Guide

The Year 4 Mathematician

Working mathematically

By the end of year 4, children will:
- ✓ Apply their understanding of maths to solve a wide variety of problems with more than one steps
- ✓ Be expected to prove their thinking through pictures, jottings and conversations.
- ✓ Continue to make connections between different areas of maths and ask their own questions
- ✓ Work in an organised way to find solutions which help them identify common patterns or any errors more easily.

Number

Counting and understanding numbers

By the end of year 4, children will:
- ✓ Be very familiar with numbers that have up to 4 digits
- ✓ Be able to order and compare by showing them in different ways such as on a tape measure or using hands-on resources
- ✓ Use their understanding of place value (how the value of each digit changes depending on its position in the number) to partition (break and make) numbers in different ways e.g. 2345 = 2000 and 300 and 40 and 5 but could also represent this as 1000 and 1000 and 200 and 100 and 40 and 5 or 2000 and 200 and 145.
- ✓ Securely work with numbers up to 10,000 and may begin to count beyond in 1s, 10s, 100s and 1000s
- ✓ Find 10, 100 or 1000 more or less than any given number
- ✓ Multiply and divide whole numbers by 10 and 100 and understand that this changes the value of each digit rather than 'just adding a 0'
- ✓ Develop their understanding to decimal hundredths, comparing and ordering these using contexts such as money
- ✓ Learn about the pattern to find any Roman numeral to 100.
- ✓ Develop their expertise when counting forwards and backwards from 0 to include multiples of 6, 7, 9 and 25; decimals with up to 2 places and fractions
- ✓ Fluently count in tenths, hundredths and simple fractions
- ✓ Develop their understanding of negative numbers through counting backwards through 0
- ✓ Recognise and describe number patterns and relationships including multiples (e.g. 3, 6, 9, 12 are multiples of 3) and factor pairs (e.g. 1 and 12, 2 and 6, 3 and 4 are all factor pairs for 12) for known times tables.

Calculating

By the end of year 4, children will:

✓ Develop various strategies for solving +, -, x, ÷ calculations mentally, using jottings when appropriate and for checking that their answers are sensible

✓ Share their methods with others to help them see which work best, are quickest and most accurate.

✓ Become fluent in all multiplication and division facts up to 12 x 12 and apply these facts to other problems e.g. 232 x 7 = (200 x 7) + (30 x 7) + (2 x 7)

✓ Use the = sign to demonstrate equal value e.g. 3 x 8 = 48 ÷ 2 and solve missing number problems e.g. 3 x ? = 48÷2

✓ Explore patterns and rules for the times tables they learn and use pictures and objects to support their understanding

✓ Solve problems accurately using the column addition and subtraction methods for numbers with up to 4-digits and explain how the methods work

✓ Use formal written methods of short multiplication and short division for two and three digit numbers by a single digit

Fractions including decimals

By the end of year 4, children will:

✓ Develop their understanding of fractions by comparing to, or finding a part of, the whole

✓ Through hands-on resources, pictures or jottings, such as a number line, children will add and subtract two fractions with the same denominator (e.g. 2/3 + 2/3)

✓ Solve problems involving fractions such as 'find ¾ of 20 litres' using their knowledge of multiplication and division and through practical equipment

✓ Secure their understanding that fractions and decimals are different ways of expressing numbers and proportions

Measurement

By the end of year 4, children will:

✓ Secure their understanding of place value and decimals to record measurements accurately

✓ Use their understanding of multiplying and dividing by 10, 100 and 1000 to convert between different units of measure of length (km, m, cm, mm), weight (kg, g) and money (£ and p)

✓ Link their understanding of area to multiplication and describe how to find the perimeter of a rectangle quickly

✓ Read and write the time accurately using analogue and digital clocks, including clocks with Roman numerals

✓ Convert between units of time (hours, minutes and seconds)

✓ Estimate, compare, calculate and solve a variety of problems involving all units of measurement

Geometry

By the end of year 4, children will:

✓ Extend their knowledge of shape to include more unusual quadrilaterals (four-sided shapes) and triangles

✓ Use increasingly more specific vocabulary such as parallelogram, rhombus and trapezium; scalene and isosceles

- ✓ Refine their understanding of symmetry and solve problems where the shape is not displayed in its usual way (e.g. it might be on its side)
- ✓ Find and name different angles and use this information to decide if a shape is regular or irregular
- ✓ Describe position and movement on a grid as co-ordinates and will plot points to draw 2-D shapes.

Statistics
By the end of year 4, children will:
- ✓ Complete, read and interpret information on bar charts
- ✓ Solve problems that involve finding information in charts, tables and graphs; including time graphs.

Glossary of terms
http://www.amathsdictionaryforkids.com/dictionary.html
http://www.theschoolrun.com/primary-numeracy-glossary-for-parents