

Year 4 2017-18 Overview Maths

Autumn Term

Autumn Term																	
												Half term					
<p>Number and Place value (Y 3/4)</p> <ul style="list-style-type: none"> ➤ Recognise the place value of each digit in a 3 digit number moving towards four-digit numbers (thousands, hundreds, tens, and ones) ➤ Identify, represent and estimate numbers using different representations initially numbers to 1000, moving to numbers up to 10,000 ➤ Order and compare numbers up to 1000 using $<$ $>$ $=$ and then beyond 1000 ➤ Find 1, 10, 100 and 1000 more or less than a given number under 1000, moving to under 10,000 ➤ Count from 0 in multiples of 4, 8, 50 and 100. ➤ Count in multiples of 6, 7, 9 25 and 1000 (<i>In lesson then move to MMM</i>) ➤ To mentally add and subtract using near multiples of 10 and justify their method. ➤ To mentally add and subtract a 3 digit number and 1's, 10's and 100's ➤ Solve number and practical problems that involve all of the above with increasingly large positive numbers up to 10,000 			<p>Multiplication and division (Y3)</p> <ul style="list-style-type: none"> ➤ Recall multiplication and division facts for the multiplication tables to 12 x 12. ➤ Write and calculate mathematical statements for multiplication and division facts using the multiplication tables that they know (2, 3, 4, 5, 10) demonstrating a solid understanding of each operation, using physical and pictorial representations initially. ➤ Use place value known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1. ➤ Use mental methods to multiply and divide teen numbers by 1 digit within their known facts. (17 x 3 – partitioned into 10 x 3/ 7 x 3; 51 ÷ 3 partitioned into 30 ÷ 3/ 21 ÷ 3) ➤ Use mental methods and informal written methods to multiply and divide a 2 digit number by a 1 digit number (24 x 3 partitioned into 20 x 3/ 4 x 3; 72 ÷ 3 partitioned into 60 ÷ 3/ 12 ÷ 3) ➤ Solve problems, including missing number problems involving multiplication and division including integer scaling problems and correspondence problems in which n objects are connected to m objects. 			<p>Measures</p> <ul style="list-style-type: none"> ➤ Convert between different units of measure [for example, kilometre to metre; Litre to millilitre) ➤ Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres ➤ Find the area of rectilinear shapes by counting squares 			<p>Half term</p>	<p>Measures continued over.</p> <ul style="list-style-type: none"> ➤ Estimate, compare and calculate using different measures. (Ideally this should be embedded within the addition and subtraction and multiplication and division units.) 			<p>Addition and Subtraction (Y 3/4)</p> <ul style="list-style-type: none"> ➤ Add and subtract numbers with up to 3 digits using partitioning for addition exchanging for subtraction and carrying for addition with confidence. ➤ Add and subtract numbers with up to 3 digits using the formal written method for addition and subtraction including carrying and exchanging. ➤ Add and subtract numbers with 4 digits using the formal written methods for addition and subtraction where appropriate. ➤ Look carefully at calculations and decide which method would be the most appropriate <i>e.g. 2003 – 1998 mental methods.</i> ➤ Estimate and use the inverse operations to check the answer to a calculation. <p>Solve addition and subtraction two step problems in contexts (focus on measures particularly length, capacity, weight) deciding on which operation and method to use and why.</p>				

Spring Term

Half
term

Fractions Year 3/4 –

- Recognise, find and write fractions (unit and non-unit) of a shape and a discrete set of objects.
- Compare and order unit fractions and fractions with the same denominator.
- Add and subtract fractions with the same denominator within one whole using practical resources and diagrams to represent this.
- Add and subtract fractions with the same denominator going over one whole (using simple fractions) e.g. $2\frac{1}{2} + 3\frac{1}{2}$; $\frac{3}{4} + \frac{2}{4}$
- Recognise and show using diagrams, equivalent fractions with small denominators, e.g. $\frac{1}{2} = \frac{2}{4}$, $\frac{1}{3} = \frac{2}{6}$ etc.
- Recognise and show using diagrams, families of common equivalent fractions e.g. $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$; $\frac{1}{4} = \frac{2}{8} = \frac{3}{12} = \frac{4}{16}$; including simple non-unit fractions $\frac{3}{4} = \frac{6}{8} = \frac{9}{12}$
- Recognise and use fractions as numbers: Unit fractions and non-unit fractions with small denominator. Use the bar model to share - moving into more efficient methods of calculating non-unit fractions e.g. $\frac{3}{5}$ of 30 = $30 \div 5 = 6 \times 3 = 18$.
- Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities where the answer is a whole number.

Number and Place Value (Y4)

- Recognise the place value of each digit in a four-digit numbers (thousands, hundreds, tens, and ones)
- Identify, represent and estimate numbers using different representations; partition numbers in different ways e.g. *find 3 ways to show 5630*.
- Order and compare numbers beyond 1000 – up to 10,000
- Count backwards through zero to include negative numbers.
- 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.
- Round any number to the nearest 10, 100 or 1000 (using only whole numbers)
- Find 1, 10, 100 and 1000 more or less than a given number under 10,000
- Solve number and practical problems that involve all of the above with increasingly large positive numbers up to 10,000

Multiplication and division

- (For pupils who are not confident using a number line to partition and multiply 2 digit x 1 digit revisit objective from earlier unit.)
- Use written methods (expanded column multiplication) to calculate multiplication sentences using the times tables that they know. Initially working with teen x 1 digit, moving onto 2 digit x 1 digit / 3 digit x 1 digit when appropriate. Support with practical resources (place value counters/ Dienes)
- Use compact column multiplication to multiply 2 digit x 1 digit numbers including carrying, moving onto 3 digit x 1 digit (Initially introduce alongside expanded method to demonstrate how these methods compare.)
- (When confident using a number line for division 2 digit ÷ 1 digit including remainders) Calculate mathematical statements for division within the times tables that they know using short division. Initially 2 digit ÷ 1 digit no carrying e.g. $69 \div 3 = 23$ including questions with remainders $68 \div 3 = 22 \text{ r}2$, 2 digit ÷ 1 digit with carrying $72 \div 3 =$, 2 digit ÷ 1 digit with carrying and remainders $73 \div 3 =$, repeat cycle for 3 digit by 1 digit. Use place value counters and Dienes to support.
- Solve problems involving multiplication and division including integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Fractions 2 (Y3/ 4)

- Count up and down in tenths; recognise that tenths arise from dividing an object into ten equal parts and in dividing 1 digit numbers or quantities by 10.
- Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.
- Find the effect of dividing a one or two digit number by 10 and 100, identifying the value of the digits as ones, tenths and hundredths.
- Recognise and write decimal equivalents of any number of tenths or hundredths.
- Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$
- Compare numbers with the same number of decimal places up to 2 decimal places.
- Round decimals with one decimal place to the nearest whole number.

Summer Term

Half
Term

Measurement (Time)

- Tell and write the time from an analogue clock, including clocks with Roman numerals with increasing accuracy to the nearest minute.
- Record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as am/ pm, morning afternoon, noon and midnight.
- Read, write and convert time between analogue and digital 12 and 24 hour clocks.
- Solve problems converting from hours to minutes; minutes to seconds; years to months; weeks to days.

Addition and subtraction/ Multiplication and Division (problem solving and reasoning focus)

Revisit objectives below for pupils who are not yet secure at using column methods for addition and subtraction.

- Add and subtract numbers with 4 digits using the formal written methods for addition and subtraction where appropriate.
- Look carefully at calculations and decide which method would be the most appropriate *e.g. 2003 – 1998 mental methods*.
- Estimate and use the inverse operations to check the answer to a calculation.
- Solve addition and subtraction two step problems in contexts, deciding on which operation and method to use and why.

Main Focus of unit:

- Solve one step problems involving all four operations focusing on accurately identifying the operations needed to solve the question.
- Solve multi-step problems involving all four operations in context, for example, money, measures etc. Choosing methods of calculating appropriately

Geometry (Shape)

- 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
- 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.

Statistics

- Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
- Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

Consolidation of objectives where needed.

(Could revisit decimal numbers/ place value in preparation for year 5)