

## **Mental Maths/Arithmetic (throughout the year):**

- count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
- Practise doubling and halving using place value e.g. double 20, double 200
- recognise the place value of each digit in a two-digit number (tens, ones)
- compare and order numbers from 0 up to 100; use  $<$ ,  $>$  and  $=$  signs
- read and write numbers to at least 100 in numerals and in words
- recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers
- recall and use multiplication and *division facts* for the 2, 5 and 10 multiplication tables
- recognise odd and even numbers
- Pupils should count in fractions up to 10, starting from any number and using the  $\frac{1}{2}$  and  $\frac{2}{4}$  equivalence on the number line. This reinforces the concept of fractions as numbers and that they can add up to more than one.

## **Problem Solving**

Problem solving should be integrated throughout all maths learning as well as lessons where the main focus is on a problem solving objective. Refer to 2016 Key Stage 1 SATS paper and use similar problems with children.

### **Methods of Solving Problems**

Know that there can be more than one answer to a question e.g. I bought a toy for 50p. Which coins could I have used?

Continue and explain a more complex repeating pattern

### **Ways of Recording**

Record problem solving ideas using drawings, words, numbers and calculations

### **Speaking and Listening**

To explain my ideas using 'because'

To ask a question when stuck

To say what was easy and what was difficult about solving a problem (meta-cognition)

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p><b>Number and Place Value (~3 Weeks)</b></p> <p><i>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</i></p> <p><i>recognise the place value of each digit in a two digit number (tens, ones)</i></p> <p><i>identify, represent and estimate numbers using different representations, including the number line</i></p> <p><i>read and write numbers to at least 100 in numerals and in words</i></p> <p><b>Addition and Subtraction (~ 3 weeks)</b></p> <p><i>solve problems with addition and subtraction:</i></p> <p><i>using concrete objects and pictorial representations, including those involving numbers, quantities and measures</i></p> <p><i>applying their increasing knowledge of mental and written methods</i></p> <p><i>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</i></p> <p><i>add and subtract</i></p>	<p><b>Multiplication, Fractions and Time (~ 2 weeks)</b></p> <p><i>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</i></p> <p><i>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs</i></p> <p><i>recognise, find, name and write fractions 1/3, ½, 2/4 of a set of objects or quantity</i></p> <p><i>compare and sequence intervals of time</i></p> <p><b>Geometry and Statistics (~2 weeks)</b></p> <p><i>identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</i></p> <p><i>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</i></p> <p><b>Link to Geography Antarctica:</b></p>	<p><b>Number and Place Value (~2Weeks)</b></p> <p>Revisit Objectives from Autumn 1 plus:</p> <p><i>compare and order numbers from 0 up to 100; use &lt;, &gt; and = signs</i></p> <p><i>use place value and number facts to solve problems.</i></p> <p><b>Addition, Subtraction and Money (~ 3 weeks)</b></p> <p><i>add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers</i></p> <p><i>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</i></p> <p><i>find different combinations of coins that equal the same amounts of money</i></p> <p><i>solve simple problems in a practical context involving addition and</i></p>	<p><b>Multiplication, Fractions and Time (~ 2 weeks)</b></p> <p><i>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</i></p> <p><i>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs</i></p> <p><i>tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times</i></p> <p><i>know the number of minutes in an hour and the number of hours in a day</i></p> <p><i>write simple fractions for example, ½ of 6 = 3 and recognise the equivalence of 2/4 and ½</i></p> <p><b>Geometry and Statistics (~2 weeks)</b></p> <p><i>identify 2-D shapes on the surface of 3D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]</i></p>	<p><b>Addition, Subtraction and Measure (-3 weeks)</b></p> <p><i>add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one digit numbers; show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</i></p> <p><i>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</i></p> <p><b>Text: Jim and The Beanstalk</b></p> <p><i>choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</i></p>	<p><b>Multiplication, Fractions and Time (~ 2 weeks)</b></p> <p><i>recognise, find, name and write fractions of a length, shape, set of objects or quantity (link to time and measure)</i> e.g. . of 100cm = 50cm</p> <p><i>write simple fractions for example 1/2 of 6 = 3</i></p> <p><i>tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times</i></p> <p><i>know the number of minutes in an hour and the number of hours in a day</i></p> <p><b>Geometry and Statistics (~2 weeks)</b></p> <p>Revisit objectives from Autumn and Spring</p> <p><i>compare and sort common 2D and 3D shapes and everyday objects.</i></p> <p><b>My Money Week – June</b></p>

<p><i>numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers</i></p> <p><i>show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</i></p> <p><i>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</i></p> <p><i>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</i></p>	<p><i>interpret and construct simple pictograms, tally charts, block diagrams and simple tables</i></p> <p><i>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</i></p> <p><i>ask and answer questions about totalling and comparing categorical data.</i></p> <p><b>Calculation and Measure (~2 weeks)</b></p> <p><i>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</i></p> <p><i>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (<math>=</math>) signs choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (<math>^{\circ}</math>C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels compare and order</i></p>	<p><i>subtraction of money of the same unit, including giving change</i></p> <p><i>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</i></p>	<p><i>compare and sort common 2D and 3D shapes and everyday objects.</i></p> <p><b>Link to Science Plants:</b></p> <p><i>interpret and construct simple pictograms, tally charts, block diagrams and simple tables</i></p> <p><i>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</i></p> <p><i>ask and answer questions about totalling and comparing categorical data.</i></p> <p><b>Calculation and Measure (~2 weeks)</b></p> <p>Revisit Addition, Subtraction and Multiplication Objectives plus:</p> <p><i>show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</i></p> <p><i>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems</i></p>	<p><i>compare and order lengths, mass, volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math></i></p> <p><b>SATS</b></p>	
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	<i>lengths, mass, volume/capacity and record the results using &gt;, &lt; and =</i>		<i>in contexts (including measure)</i>		
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