Mental Maths/Arithmetic (throughout the year):

Mental Maths:

- read, write, order and compare numbers up to 10 000 000 and determine the value of each digit

- round any whole number to a required degree of accuracy

- use negative numbers in context, and calculate intervals across zero

- perform mental calculations, including with mixed operations and large numbers

- identify common factors, common multiples and prime numbers

- identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal

places

- solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate

- use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and

vice versa, using decimal notation to up to three decimal places

Problem Solving

Problem solving should be integrated throughout all maths learning as well as lessons where the main focus in on a problem solving objective.

Method of Solving Problem

To find all possible solutions to a problem using a systematic method

To match algebraic equations with a statement (12 Days of Christmas algebra lesson)

To test mathematical statements using examples and counter-examples

Ways of Recording

Independently choose a systematic way to record my ideas.

Speaking and Listening

To be able to ask and answer 'what if' questions about a problem

To be able to compare and evaluate two different methods for solving the same problem

George Eliot
Primary School

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number, place value and fractions (~ 3 weeks) *read, write, order and compare numbers up to 10 000 000 and determine the value of each digit* *round any whole number to a required degree of accuracy* *use negative numbers in context, and calculate intervals across zero* *solve number and practical problems that involve all of the above* *identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places* *associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]* *use common factors to simplify fractions; use common multiples to express fractions in the same denomination* *compare and order fractions, including*	**Decimals and measures (~3 weeks)** *multiply one-digit numbers with up to two decimal places by whole numbers* *use written division methods in cases where the answer has up to two decimal places* *solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate* *use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places* *convert between miles and kilometres* **Geometry (~3 weeks)** *draw 2-D shapes using given dimensions and angles* *recognise, describe and build simple 3-D shapes, including making nets* *compare and classify geometric shapes based on their properties and*	**Fractions, percentages and ratio (~3 weeks)** *add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions* *multiply simple pairs of proper fractions, writing the answer in its simplest form* *divide proper fractions by whole numbers* *solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts* *solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison* *solve problems involving similar shapes where the scale factor is known or can be found* *solve problems involving unequal sharing and grouping using knowledge of fractions and multiples* *interpret and construct pie charts and use these*	**Number and algebra(~ 3 weeks)** Revisit Objectives from Autumn 1 (as necessary) *use simple formulae to: generate and describe linear number sequences* *express missing number problems algebraically (link to angles on a straight line, perimeter etc)* *find pairs of numbers that satisfy an equation with two unknowns* *enumerate possibilities of combinations of two variables* *Interpret and construct line graphs* *Fractions, decimals and percentages* *use common factors to simplify fractions; use common multiples to express fractions in the same denomination* *compare and order fractions, including fractions > 1* *add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions*	**SATs revision** Revision of topics not covered by year 6 curriculum to include: Symmetry A wide range of graphs, tables and charts And any other as relevant based on 2016 sample tests **SATs**	My Money Week – June The Fiver Challenge – www.gov.uk (need to register in advance) Young Enterprise - challenge children to make as much money as they can starting with £ 5 or Children to run their own small business as a class within school e.g. stationery shop to raise money for a trip they would like to go on

fractions > 1 **Calculation (~3 weeks)** *multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication* *divide numbers up to 4 digits by a two digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context* *divide numbers up to 4 digits by a two digit number using the formal written method of short division where appropriate, interpreting remainders according to the context* *perform mental calculations, including with mixed operations and large numbers use their knowledge of the order of operations to carry out calculations involving the four operations* *solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why* *solve problems which require answers to be*	*sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons* *illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius* *recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. recognise that shapes with the same areas can have different perimeters and vice versa* *recognise when it is possible to use formulae for area and volume of shapes* *calculate the area of parallelograms and triangles* *calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3]*	*to solve problems* **Time and measure problems (~3 weeks)** *convert between miles and kilometres* *solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate* *describe positions on the full coordinate grid (all four quadrants)* *draw and translate simple shapes on the coordinate plane, and reflect them in the axes.* *Interpret and construct line graphs*	*multiply simple pairs of proper fractions, writing the answer in its simplest form* *divide proper fractions by whole numbers* *associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8)* *identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places* *multiply one-digit numbers with up to two decimal places by whole numbers* *use written division methods in cases where the answer has up to two decimal places* *solve problems which require answers to be rounded to specified degrees of accuracy* *recall and use equivalences between simple fractions, decimals and percentages, including in different contexts*		

rounded to specified degrees of accuracy					