EAGLE OWLS MATHS SUBJECT NARRATIVE SPRING TERM 2024

NC OBJECTIVES RED Y5 BLUE Y6 12 weeks (one mindset one TESTING) 10 WEEKS MATHS CURRICULUM	SEQUENCE OF LEARNING	KNOWLEDGE ORGANISER Facts and vocabulary
1 week GROWTH MINDSET (3DAYS) 1 week Angles - know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles - draw given angles, and measure them in degrees - identify: angles at a point and 1 whole turn (total 360 degrees); angles at a point on a straight line and half a turn (total 180 degrees); and other multiples of 90 degrees - use the properties of rectangles to deduce related facts and find missing lengths and angles - distinguish between regular and irregular polygons based on reasoning about equal sides and angles - draw 2-D shapes using given dimensions and angles - compare and classify geometric shapes based on their properties and 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	Use and identify angles in a circle and then on a protractor Use a protractor Recognise common angles : 90°, 180°, 360° Find missing angles both with a protractor and with knowledge learned – eg missing angle in a triangle is not necessary to use a protractor	Obtuse > 90° Acute < 90° Right angle = 90° Protractor has 180° make sure you line up the baseline and then look at the correct scale on the protractor that starts with 0 There are 2 scales on a protractor Measure with accuracy to within 2 mm Angles in a triangle = 180° Angles in a quadrilateral and with every additional side adds 180° Radius, diameter and circumference of a circle – what the difference is and how to calculate the radius is half the diameter Angles that are vertically opposite will be equal

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• recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles		

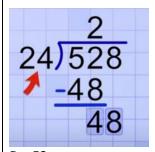| NC OBJECTIVES RED Y5 BLUE Y6	SEQUENCE OF LEARNING	KNOWLEDGE ORGANISER Facts and vocabulary
2 weeks Long DIVISION divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 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 use their knowledge of the order of operations to carry out calculations involving the 4 operations solve problems involving addition, subtraction, multiplication and division	Standard written method for short division up to 4-digit numbers by one-digit number Long division standard written method using up to 4 digits by 2-digit whole numbers Examples of support videos: SHORT https://www.youtube.com/watch?app=desktop&v=FApcjdAhnrY LONG: Remember that we use DMSB for every long division step and that we always do 5 x the divisor as associated facts before we start https://www.youtube.com/watch?v=HdU_rf7eMTI	DMSB – we use **D**o **M**acdonalds **S**ell **B**urgers **DIVIDE** – what is the number that we are dividing – make sure that you look at the divisor to see if it will be a factor of the initial digits or do you need to look at more than one of the digits **MULTIPLES** (or multiply) – do 5 multiples of the divisor using PARTITIONING to be more accurate. You may need to do further multiples depending on the sum **SUBTRACT** – subtract the number of multiples from the dividend and place the number of multiples on the top of the sum **BRING DOWN** – bring down the next number to make a new number to be divided then start again – what number are we now DIVIDING? D = 52 M = 24 X 2 S = 52-48 B = bring down the 8 to make a new number to be divided 48. Start again DMSB

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1 week Multi – Step Problems (Word) solve number and practical problems that involve all year 6 objectives use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why perform mental calculations, including with mixed operations and large numbers use their knowledge of the order of operations to carry out calculations involving the 4 operations solve problems involving addition, subtraction, multiplication and division	Solve a range of word problems that include deeper thinking problems that involve pupils applying more than one operation and a variety of topics including data handling, shape, area and perimeter, ratio and coordinates. Pupils are required to evidence their understanding by solving multi-step questions and using written explanations for their reasoning.	Estimate Use inverse operations BIDMAS Area and Perimeter Ratio Properties of shapes both 2d and 3d Written explanations using mathematical vocabulary
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3 weeks: NUMBER - Fractions/Decimals/Percentages - solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates - compare and order fractions whose denominators are all multiples of the same number	Variety of ICT starters and plenaries to support learning Equivalent fractions Fractions of amounts Mixed Numbers and Improper fractions Changing from a mixed number to an improper fraction and vice versa Changing fractions to their simplest form Multiplication of fractions Addition and Subtraction of fractions Division of fractions	Knowledge of times tables Understanding the relationship between fractions, division and times tables Common Denominator Multiples Numerator Denominator Equivalent fractions and how to make them Making sure fractions have a common denominator before they are added or subtracted

• recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [eg. 2/5 + 4/5 = 6/5 = 1 1/5] • add and subtract fractions with the same denominator, and denominators that are multiples of the same number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • read and write decimal numbers as fractions [for example, 0.71 = 71/100] • 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 • multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 x 1/2 = 1/8] • divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6] • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8] Decimals and Percentages • read and write decimal numbers as fractions [for example, 0.71 = 71/100] • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Recognise the relationship between Fractions and Decimals Introduce Percentages – relate to ÷ 10 and remind them that they can do this Find 10% first then use this information to find other percentages of amounts Find percentages of amounts Use all four operations with decimal calcuations Revise rounding and apply to decimals	Seeing the relationship between division and multiplication in fractions and how to work them out Converting improper fractions into Mixed numbers and understanding what that means, and converting from a mixed number into an improper fraction for the purposes of addition and subtraction Recognising what an improper fraction is Understanding the make-up of a mixed number Identifying a common multiple in order to find equivalent fractions The number on the bottom stays the same Greater than and less than symbols Keep change Flip Decimal numbers place value How to convert fractions to decimals What 10% means and how to calculate Use 10% to then find other percentages of amounts Revise all four operations with decimals Revise rounding to the nearest

- round decimals with 2 decimal places to the nearest whole number and to 1 decimal place
- read, write, order and compare numbers with up to 3 decimal places
- solve problems involving number up to 3 decimal places
- recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction
- solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25
- 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 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places
- multiply one-digit numbers with up to 2 decimal places by whole numbers
- use written division methods in cases where the answer has up to 2 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
- solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts

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• solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison		
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1 week Geometry – position and direction (Transformations and coordinates) identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed • describe positions on the full coordinate grid (all 4 quadrants) • draw and translate simple shapes on the coordinate plane, and reflect them in the axes	Understand transformations and have a go at all 3 (Reflection/Rotation and Translation) Use all 4 quadrants Identify the missing coordinate from given information	Understand transformations and have a go at all 3 (Reflection/Rotation and Translation) Use all 4 quadrants Identify the missing coordinate from given information
NC OBJECTIVES RED Y5 BLUE Y6	SEQUENCE OF LEARNING	KNOWLEDGE ORGANISER Facts and vocabulary
2 WEEKS 1 week Algebra and ratio/ 1 week Multiplication and Division revision ♣ use simple formulae ♣ generate and describe linear number sequences ♣ express missing number problems algebraically	Use of practical resources to show ratio and proportion Discussion on food tech knowledge Connecting percentage to dividing by 10 – which is covered in place value Researching the word scale and what it means mathematically	The difference between ratio and proportion one is in relation to and one is a fraction of Being able to apply any percentage question by following the logical steps of finding 10% 5% and 1% in order to manipulate questions. EG Find 98% (SATS 2018) Pupils need to find 10% reduce to 1% and then x 2. Subtract that answer from the 100% to find 98%. They

♣ find pairs of numbers that satisfy an equation with two unknowns ♣ enumerate possibilities of combinations of two variables. Ratio and Proportion Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplications 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	Carrying on ratio with the same multiples both sides of the equation Example resource for ratio: https://www.youtube.com/watch?v=RQ2nYUBVvqI Example resource for algebra: https://www.youtube.com/watch?v=NybHckSEQBI&t=95s	need to be able to apply the maths to a variety of problems Algebra in very simple terms to make the equations equal Knowing that if there is not an operation it is always MULTIPLY