EAGLE OWLS AUTUMN TERM 2023 MATHS SUBJECT NARRATIVE

NC OBJECTIVES RED Y5 BLUE Y6 AUTUMN TERM = 14 (1wk testing)	SEQUENCE OF LEARNING	KNOWLEDGE ORGANISER - Facts and vocabulary
5 weeks NUMBER place value **read, write, order and compare** numbers to at least 1,000,000 and determine the value of each digit count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 **interpret negative numbers in context,** count forwards and backwards with positive and negative whole numbers, including through 0 **Round** any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 Multiply and divide by 10 100 and 1000 including decimals solve number problems and practical problems that involve all of the above read Roman numerals to 1,000 (M) and recognise years written in Roman numerals 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 0 solve number and practical problems that involve all year 6 objectives	Variety of ICT starters and plenaries to support learning https://mathsframe.co.uk/en/resources/resource/477/Multiplication-Tables-Check https://mathsframe.co.uk/en/resources/resource/31/multiply-and-divide-by-10-100-and-1000-2- Times tables SONG BANK https://mathsframe.co.uk/en/resources/resource/60/itp-moving-digits TESTBASE TWINKL PLACVE VALUE RIDDLE CARDS https://www.topmarks.co.uk/maths-games/daily10 https://www.topmarks.co.uk/Flash.aspx?f=dartboardmultiplicationv3 Numbers to 10,000,000 in starters Times Table REVISION all tables Secure with 5 digit numbers Secure with 6 digit numbers Value of each digit Read, write, order and compare up to 10,000,000 digit numbers Multiply and Divide numbers by 10 100 1000 (including decimals) using place value to understand the value of the number Multiplying single digits and recognising their place value if they are multiples of 10 eg 30 x 70 instead of 3 x 7	Powers of 10 Efficient written method Factor pairs Composite numbers, prime number, prime factors, square number, cubed number Formal written method Numbers to 10 million Place Value is so key to all the units that we teach in Years 5 and 6 it is important to give them a good grounding in numbers up to 10 million and with up to 3 decimal places. Revision of all times tables – underpinning so much of the work we do later in the year.

2 weeks NUMBER Addition and Subtraction add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) 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	Standard written method of addition Vertical addition not going over boundaries Vertical addition going over boundaries in one column – TU + TU Continuing to HTU + HTU Addition of numbers including decimals with importance of lining up the place value columns Written addition with carrying to the next column and understanding the place value of the number Including a place holder to make numbers the same size – using knowledge of place value to understand why a place holder is important Subtraction using vertical method – understanding largest value number has to go on the top and what to do when the value is not enough (borrowing)	Efficient/standard written method Factor pairs Composite numbers, prime number, prime factors, square number, cubed number Formal written method In order to understand standard written methods pupils draw on their place value knowledge from the first term They need place value understanding to follow the standard written subtraction method taught
2 weeks NUMBER – Fractions addition and subtraction • compare and order fractions whose denominators are all multiples of the same number • 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 • use common factors to simplify fractions; use common multiples to express fractions in the	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 Addition and Subtraction of fractions Recognise the relationship between Fractions and Decimals	Knowledge of times tables Understanding the relationship between fractions, division and times tables Common Denominator Multiples and factors Numerator Denominator Equivalent fractions and how to make them Making sure fractions have a common denominator before they are added or subtracted 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

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		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
3 weeks NUMBER multiplication and Division identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally, drawing upon known facts 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 recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	Multiplication standard written methods Short multiplication up to 4 digits by 1 digit Standard written method 2 digits by 2 digits Using knowledge of place value to understand when multiplying by ten than multiples of ten end with a 0 Long multiplication up to 4 digits by 2 digits 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 https://www.youtube.com/watch?v=FApcjdAhnrY http://www.math-play.com/Division-Millionaire/division-millionaire-game_html5.html Short and long division taught after multiplication so that they understand how to create multiples of 2 digit numbers with success and can check using times table knowledge. Use DMSB method	Efficient written method Factor pairs Composite numbers, prime number, prime factors, square number, cubed number Formal written method Order of operations Common factors, common multiples Associated facts multiples – again drawing on the place value that they have covered as well as the times table revision that we cover in order to approach standard written methods of long and short multiplication and division Divisor dividend quotient Associated facts

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 identify common factors, common multiples and prime 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		
Testing one week		
Measurement – Perimeter, area and volume • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm^2) and square metres (m^2), and estimate the area of irregular shapes • estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] • recognise that shapes with the same areas	Revise and clarify difference between perimeter and area Calculate area and perimeter of shape Learn L x W to calculate regular shapes Calculate compound shapes Move to volume as an extra 3d dimension L x w x h Use practical examples to consolidate Calculate the area of parallelograms and triangles with the help of formula Understand recording using ^{2} and ^{3}	Perimeter is the outside of the shape Area can be calculated by counting squares Compound shapes can be calculated by splitting the shape into regular shapes and then the total made Understand that shapes with the same area can have different perimeters A formula can be used to calculate area of rectangles – l x w This will have an added dimension when there is a 3D shape lxwxh

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 (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]		