

Otter Class
2020-/2021 Mathematics Overview

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
TERM 1							TERM 2						
<u>Place Value</u> Y4 count in multiples of 6, 7, 9, 25 and 1,000; find 1,000 more or less than a given number; count backwards through 0 to include negative numbers; recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s and 1s); order and compare numbers beyond 1,000; identify, represent and estimate numbers using different representations round any number to the nearest 10, 100 or 1,000; solve number and practical problems that involve all of the above and with increasingly large positive numbers; read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value; Y5 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; 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;							<u>Addition and Subtraction</u> Y4 add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate; estimate and use inverse operations to check answers to a calculation; solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why; Y5 add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction); add and subtract numbers mentally with increasingly large numbers; 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;						Multiplication and Division
<u>Shape, Symmetry and Angles</u> Y4 compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes; identify lines of symmetry in 2-D shapes presented in different orientations;							<u>Area & Perimeter (Measurement)</u> Y4 convert between different units of measure; measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres;						

<p>complete a simple symmetric figure with respect to a specific line of symmetry; identify acute and obtuse angles and compare and order angles up to 2 right angles by size;</p> <p>Y5 identify 3-D shapes, including cubes and other cuboids, from 2-D representations; know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles; draw given angles, and measure them in degrees ($^{\circ}$); identify:</p> <ul style="list-style-type: none"> • angles at a point and 1 whole turn (total 360°) • angles at a point on a straight line and half a turn (total 180°) • other multiples of 90° <p>use the properties of rectangles to deduce related facts and find missing lengths and angles;</p> <p>distinguish between regular and irregular polygons based on reasoning about equal sides and angles;</p>	<p>find the area of rectilinear shapes by counting squares; estimate, compare and calculate different measures, including money in pounds and pence;</p> <p>Y5 convert between different units of metric measure; understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints; 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;</p> <p>estimate volume and capacity; use all four operations to solve problems involving measure using decimal notation including scaling;</p>
TERM 3	TERM 4
<p><u>Multiplication and Division</u> Y4 recall multiplication and division facts for multiplication tables up to 12×12; use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers; recognise and use factor pairs and commutativity in mental calculations; multiply two-digit and three-digit numbers by a one-digit number using formal written layout; solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit,</p>	<p><u>Fractions</u> Y4 recognise and show, using diagrams, families of common equivalent fractions; count up and down in hundredths; recognise that hundredths arise when dividing an object by a 100 and dividing tenths by 10; solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number; add and subtract fractions with the same denominator;</p> <p>Y5 compare and order fractions whose denominators are all multiples of the same number;</p>

<p>integer scaling problems and harder correspondence problems such as n objects are connected to m objects;</p> <p>Y5</p> <p>identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers;</p> <p>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers;</p> <p>establish whether a number up to 100 is prime and recall prime numbers up to 19;</p> <p>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;</p> <p>multiply and divide numbers mentally drawing upon known facts;</p> <p>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;</p> <p>multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000;</p> <p>recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3);</p> <p>solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes;</p> <p>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign;</p> <p>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates;</p>	<p>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths;</p> <p>recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number;</p> <p>add and subtract fractions with the same denominator and denominators that are multiples of the same number;</p> <p>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams;</p> <p>read and write decimal numbers as fractions;</p>	
<p><u>Time</u></p> <p>Y4</p> <p>read, write and convert time between analogue and digital 12 and 24-hour clocks;</p> <p>solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days;</p> <p>Y5</p> <p>solve problems involving converting between units of time;</p>	<p><u>Angles</u></p> <p>Y4</p> <p>identify acute and obtuse angles and compare and order angles up to 2 right angles by size;</p> <p>Y5</p> <p>know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles;</p> <p>draw given angles, and measure them in degrees ($^{\circ}$);</p>	

		identify: <ul style="list-style-type: none"> • angles at a point and 1 whole turn (total 360°) • angles at a point on a straight line and half a turn (total 180°) • other multiples of 90° 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;	
TERM 5		TERM 6	
<u>Fractions</u> Y4 recognise and show, using diagrams, families of common equivalent fractions; count up and down in hundredths; recognise that hundredths arise when dividing an object by a 100 and dividing tenths by 10; solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number; add and subtract fractions with the same denominator; Y5 compare and order fractions whose denominators are all multiples of the same number; identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths; recognise mixed numbers and improper fractions and convert from one form to	<u>Decimals and Percentages</u> Y4 recognise and write decimal equivalents of any number of tenths or hundredths; recognise and write decimal equivalents to $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$; find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths; round decimals with 1 decimal place to the nearest whole number compare numbers with the same number of decimal places up to 2 decimal places; solve simple measure and money problems involving fractions and decimals to 2 decimal places; Y5 read and write decimal numbers as fractions; recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents; 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;	REVISION Four <u>Operations</u> Recap and revise different methods of addition, subtraction, multiplication and division, including in the context of money, measures and fractions. Solve problems using all of the above.	

<p>the other and write mathematical statements > 1 as a mixed number; 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;</p>	<p>solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and fractions with a denominator of a multiple of 10 or 25;</p>		
<p><u>Position and Direction</u> Y4 describe positions on a 2-D grid as coordinates in the first quadrant; describe movements between positions as translations of a given unit to the left/right and up/down; plot specified points and draw sides to complete a given polygon; Y5 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;</p>	<p><u>Statistics</u> Y4 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; Y5 solve comparison, sum and difference problems using information presented in a line graph; complete, read and interpret information in tables, including timetables;</p>		