

NC OBJECTIVES RED Y5 BLUE Y6 SPRING TERM = 10 (1wk testing)	SEQUENCE OF LEARNING	KNOWLEDGE ORGANISER - Facts and vocabulary
<p>4 weeks NUMBER Fractions</p> <ul style="list-style-type: none"> • 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 • 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 the other and write mathematical statements > 1 as a mixed number [eg. $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$] • 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, $1/4 \times 1/2 = 1/8$] • divide proper fractions by whole numbers [for example, $1/3 \div 2 = 1/6$] • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $3/8$] 	<p>Variety of ICT starters and plenaries to support learning</p> <ol style="list-style-type: none"> 1. Equivalent fractions 2. Fractions of amounts 3. Mixed Numbers and Improper fractions 4. Changing from a mixed number to an improper fraction and vice versa 5. Changing fractions to their simplest form 6. Multiplication of fractions 7. Addition and Subtraction of fractions <p>Division of fractions</p>	<p>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 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</p>
<p>2 weeks NUMBER Decimals and Percentages</p> <ul style="list-style-type: none"> • 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 • 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 • solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison 	<ol style="list-style-type: none"> 1. Recognise the relationship between Fractions and Decimals 2. Introduce Percentages – relate to $\div 10$ and remind them that they can do this 3. Find 10% first then use this information to find other percentages of amounts 4. Find percentages of amounts 5. Use all four operations with decimal calculations 6. Revise rounding and apply to decimals 	<p>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</p>
<p>1 week Angles</p> <ul style="list-style-type: none"> • 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 • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles 	<ol style="list-style-type: none"> 1. Use and identify angles in a circle and then on a protractor 2. Use a protractor 3. Recognise common angles : 90, 180, 360 4. Find missing angles both with a protractor and with knowledge learned – eg missing angle in a triangle is not necessary to use a protractor 	<p>Obtuse Acute Right angle 90 degrees accuracy Angles in a triangle Angles in a quadrilateral Radius, diameter and circumference of a circle Angles that are vertically opposite</p>
<p>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</p> <ul style="list-style-type: none"> • 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 	<ol style="list-style-type: none"> 1. Understand transformations and have a go at all 3 (Reflection/Rotation and Translation) 2. Use all 4 quadrants 3. Identify the missing coordinate from given information 	<p>Understand transformations and have a go at all 3 (Reflection/Rotation and Translation) Use all 4 quadrants Identify the missing coordinate from given information</p>

	<p>2 weeks MEASUREMENT – perimeter area and volume</p> <ul style="list-style-type: none"> • 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 (cm²) and square metres (m²), and estimate the area of irregular shapes • estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] • 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 and km³] 	<ol style="list-style-type: none"> 1.Revise and clarify difference between perimeter and area 2.Calculate area and perimeter of shape 3.Learn L x W to calculate regular shapes 4.Calculate compound shapes 5.Move to volume as an extra 3d dimension L x w x h 6.Use practical examples to consolidate 7.Calculate the area of parallelograms and triangles with the help of formula 8.Understand recording using ² and ³ 	<p>Revise and clarify difference between perimeter and area</p> <p>Calculate area and perimeter of shape</p> <p>Learn L x W to calculate regular shapes</p> <p>Calculate compound shapes</p> <p>Move to volume as an extra 3d dimension</p> <p>L x w x h</p> <p>Use practical examples to consolidate</p> <p>Calculate the area of parallelograms and triangles with the help of formula</p> <p>Understand recording using ² and ³</p>
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