

WHITE ROSE HUB SMALL STEPS FOR EACH NC OBJECTIVE (Year 3 & 4)

Each set of small steps links to where the areas are within the WHITE ROSE HUB materials to help with FLUENCY, REASONING & PROBLEM-SOLVING.

It is only a guide to be used with your own teaching assessment of the class. It is not necessarily split into terms, it is where the WRH material is for those steps.

PLEASE ENSURE: FLUENCY, REASONING & PROBLEM-SOLVING is being included in lessons, whether it be at a whole class level or opportunities for activities to ensure that learning is being deepened. Where there are only objectives for one term, please follow the outline for the year and split the objectives accordingly.

YEAR 3: PLACE VALUE			YEAR 4: PLACE VALUE		
1. count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number (1a-c) 2. recognise the place value of each digit in a three-digit number (hundreds, tens, ones) (1d) 3. compare and order numbers up to 1000 using $<$ $>$ $=$ (1f) 4. identify, represent and estimate numbers using different representations e.g. positioning them on a number line and concrete representations (1e) 5. read and write numbers up to 1000 in numerals and in words (1a) 6. solve number problems and practical problems involving these ideas. (1g) 7. compare two given numbers, say which is more or less (including the use of $<$ $>$ $=$), and give a number lying between them e.g. what number is halfway between 7 and 8 Round 2 digit or 3 digit numbers to the nearest 10 or 100			1. recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) (1c) 2. count in multiples of 6, 7, 9, 25 and 1000 (1b) 3. find 1000 more or less than a given number (up to 10,000). (1a) 4. count backwards through zero to include negative numbers and understand that $-2 > -3$. (1b) 5. order and compare numbers beyond 1000 (up to 10,000) (1d) 6. identify, represent and estimate numbers using different representations (1e) 7. round any number to the nearest 10, 100 or 1000 (up to 10,000). (1f) 8. solve number and practical problems that involve all of the above and with increasingly large positive numbers (1g) 9. read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. 10. Partition, round and order four-digit whole numbers; use positive and negative numbers in context and position them on a number line; state inequalities using the symbols $<$ and $>$ (e.g. $-3 > -5$, $-1 < +1$) 11. Use the vocabulary of comparing and ordering numbers, and the symbols $>$, $<$, $=$; give a number lying between two given numbers and order a set of numbers 12. Multiply and divide whole numbers, then decimals, by 10, 100 or 1000 13. Use the vocabulary of estimation and approximation; make and justify estimates and approximations of numbers 14. Recognise and order negative number		
(AUT): -Hundreds -Represent numbers to 1000 -100s, 10s, 1s (1)	SPRING: TO use TA to see what needs to be repeated or if more	As Spring	(AUT): -Roman numerals to 100 -Round to nearest 10 -Round to nearest 100	SPRING: TO use TA to see what needs to be repeated or if more	As Spring

<ul style="list-style-type: none"> -100s, 10s, 1s (2) -Number line to 1000 -Find 1, 10, 100 more/less than a given number -Compare objects to 1000 -Compare numbers to 1000 -Order numbers -Count in 50s. 	reasoning/PS needs to be done		<ul style="list-style-type: none"> -Count in 1000s -1000s, 100s, 10s, 1s -Partitioning -Number line to 10,000 -1000 more/less -Compare numbers -Order numbers -Round to nearest 1000 -Count in 25s -Negative numbers 	reasoning/PS needs to be done	
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YEAR 3: ADDITION & SUBTRACTION			YEAR 4: ADDITION & SUBTRACTION		
Add and subtract numbers mentally, including: <ol style="list-style-type: none"> 1. a three-digit number and ones (2c, f) 2. a three-digit number and tens (2d, g) 3. a three-digit number and hundreds 4. 3 single-digit numbers (2e) 5. Fluently recall number facts to 20. (2a) 6. add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction (2h-k) 7. estimate the answer to a calculation and use inverse operations to check answers (2l) solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.(2m-n)			<ol style="list-style-type: none"> 1. add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate (2a-b) 2. estimate and use inverse operations to check answers to a calculation (2d) 3. Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. (2c, e) 4. Add or subtract 1, 10, 100 or 1000 to/from whole numbers, and count on or back in tens, hundreds or thousands from any whole number up to 10000 5. Count on or back in repeated steps of 1, 10, 100, 1000 6. Partition into hundreds, tens and ones 7. Add several numbers 		
(AUT): -Add/sub multiples of 100 -Add/sub 3-digit numbers and 1s – not crossing tens -Add 3-digit and 1-digit – crossing 10 -Sub 1-digit from a 3-digit – crossing 10 -Add/sub 3-digit numbers and 10s – not crossing 10 -Add 3-digit numbers and 10s – crossing 100 -Sub tens from a 3-digit number – crossing 100 -Add/sub 100s -Spot pattern – making it explicit --Add/sub a 2-digit and 3-digit number – not crossing 10 or 100	SPRING: TO use TA to see what needs to be repeated or if more reasoning/PS needs to be done	As Spring	(AUT): -Add/sub 1s, 10s, 100s and 1000s -Add two 4-digit numbers: no exchange -Add two 4-digit numbers: one exchange -Add two 4-digit numbers: more than one exchange -Sub two 4-digit numbers: no exchange -Sub two 4-digit numbers: one exchange -Sub two 4-digit numbers: more than one exchange	SPRING: TO use TA to see what needs to be repeated or if more reasoning/PS needs to be done	As Spring

<ul style="list-style-type: none"> -Add a 2-digit and 3-digit number – crossing 10 or 100 -Sub a 2-digit from a 3-digit number – crossing 10 or 100 - Add two 3-digit numbers – not crossing 10 or 100 -Add two 3-digit numbers – crossing 10 or 100 -Sub 3-digit from a 3-digit – no exchange -Sub 3-digit from a 3-digit – exchange -Estimate answers to calculations -Check 			<ul style="list-style-type: none"> -Efficient subtraction (easy ways) -Estimate answers -Checking strategies 		
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YEAR 3: MULTIPLICATION & DIVISION		YEAR 4: MULTIPLICATION & DIVISION			
<ol style="list-style-type: none"> 1. recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables (3a-b) 2. write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods (3d-f) 3. solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects. (3g-h) 4. write mathematical statements using the multiplication (x), division (÷), and equals (=) signs (3c) 5. double any multiple of 5 up to 100, e.g. double 35 6. halve any multiple of 10 up to 200, e.g. halve 170 7. Multiply and divide one digit and 2 digit numbers by 10 and 100 		<ol style="list-style-type: none"> 8. recall multiplication and division facts for multiplication tables up to 12×12 (3a-b) 9. use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers (3c) 10. recognise and use factor pairs and commutativity in mental calculations 11. multiply two-digit and three-digit numbers by a one-digit number using formal written layout (3d-f) 12. solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. (3g) 13. Multiply and divide whole numbers, then decimals, by 10, 100 or 1000 14. Develop and refine written methods for multiplication 15. Develop and refine written methods for division 			
<p>(AUT):</p> <ul style="list-style-type: none"> -Multiplication: equal groups -Multiplying by 3 -Dividing by 3 -3x tables -Multiplying by 4 -Dividing by 4 -4x tables -multiplying by 8 -Dividing by 8 -8x tables 	<p>(SPR):</p> <ul style="list-style-type: none"> -Comparing statements -Related calculations -Multiply 2-digit by 1-digit (1) -Multiply 2-digit by 1-digit (2) -Divide 2-digit by 1-digit (1) -Divide 2-digit by 1-digit (2) -Divide 2-digit by 1-digit (3) -Scaling -How many ways? 	<p>SUMMER: TO use TA to see what needs to be repeated or if more reasoning/PS needs to be done</p>	<p>(AUT):</p> <ul style="list-style-type: none"> -Multiply by 10 -Multiply by 100 -Divide by 10 -Divide by 100 -Multiply by 1 and 0 -Divide by 1 -Multiply and divide by 6 -6x tables and division facts -Multiply and divide by 9 -9x tables and division facts -Multiply and divide by 7 -7x tables and division facts 	<p>(SPR):</p> <ul style="list-style-type: none"> -11 and 12x tables -Multiply 3 numbers together -Factor pairs -Efficient multiplication (easy ways) -Written methods -Multiply 2-digit by 1-digit -Multiply 3-digit by 1-digit -Divide 2-digit by 1-digit (1) -Divide 2-digit by 1-digit (2) -Divide 3-digit by 1-digit -Correspondence problems 	<p>SUMMER: TO use TA to see what needs to be repeated or if more reasoning/PS needs to be done</p>

YEAR 3: FRACTIONS/DECIMALS/PERCENTAGES			YEAR 4: FRACTIONS/DECIMALS/PERCENTAGES		
<ol style="list-style-type: none"> count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 (4i-j) recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators (4e,h) recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators recognise and show, using diagrams, equivalent fractions with small denominators add and subtract fractions with the same denominator within one whole [for example, $5/7 + 1/7 = 6/7$] (4k) compare and order unit fractions, and fractions with the same denominators (4d) solve problems that involve all of the above.(4l) Read and write proper fractions interpreting the denominator as the parts of a whole and the numerator as the number of parts 			<p>FRACTIONS:</p> <ol style="list-style-type: none"> recognise and show, using diagrams, families of common equivalent fractions (4a-b, d) count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. (4c) 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 (4e) add and subtract fractions with the same denominator (4f-g) <p>DECIMALS</p> <ol style="list-style-type: none"> recognise and write decimal equivalents of any number of tenths or hundredths (4h) recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ (4i) 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 (4j) round decimals with one decimal place to the nearest whole number (4k) compare numbers with the same number of decimal places up to two decimal places (4l) solve simple measure and money problems involving fractions and decimals to two decimal places. (4m) 		
<p>(AUT):</p> <ul style="list-style-type: none"> -Unit and non-unit fractions -Making a whole -Tenths -Count in tenths -Tenths and decimals -Fractions of a number line -Fractions of a set of objects (1) -Fractions of a set of objects (2) -Fractions of a set of objects (3) 	<p>SPRING: TO use TA to see what needs to be repeated or if more reasoning/PS needs to be done</p>	<p>(SUM):</p> <ul style="list-style-type: none"> -Equivalent fractions (1) -Equivalent fractions (2) -Equivalent fractions (3) -Compare fractions -Order fractions -Add fractions -Subtract fractions 	<p>AUTUMN: TO look at obj in SPR to see what could be covered first.</p>	<p>(SPR):</p> <ul style="list-style-type: none"> -What is a fraction? -Equivalent fractions (1) -Equivalent fractions (2) -Fractions greater than 1 -Count in fractions -Add 2 or more fractions (same denominator) -Subtract 2 fractions (same denominator) -Subtract from whole amounts -Calculate fractions of a quantity -Problem solving: calculate quantities <p>Decimals:</p> <ul style="list-style-type: none"> -Recognise tenths and hundredths -Tenths as decimals -Tenths on a PV grid -Tenths on a number line -Divide 1-digit by 10 -Divide 2-digit by 10 	<p>Decimals (SUM):</p> <ul style="list-style-type: none"> -Make a whole -Write decimals -Compare decimals -Order decimals -Round decimals -Halves and quarters

				-Hundredths -Hundredths as decimals -Hundredths on a PV grid -Divide 1 or 2-digit by 100	
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YEAR 3: GEOMETRY			YEAR 4: GEOMETRY (PROPERTIES OF SHAPE)		
1. draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them (6a-b) 2. recognise angles as a property of shape or a description of a turn (6f-g) 3. identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle (6d-e, g) 4. identify horizontal and vertical lines and pairs of perpendicular and parallel lines. (6c) 5. Draw and complete shapes with reflective symmetry; draw the reflection of a shape in a mirror line along one side			1. compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes (6a-b) 2. identify acute and obtuse angles and compare and order angles up to two right angles by size (6c-d) 3. identify lines of symmetry in 2-D shapes presented in different orientations (6e) 4. complete a simple symmetric figure with respect to a specific line of symmetry. (6f-g) 5. Draw polygons and classify them by identifying their properties, including their line symmetry 6. Describe and visualise 3-D and 2-D shapes; classify them according to their properties		
AUTUMN: TO look at obj in SPR to see what could be covered first.	Spring: TO look at obj in SPR to see what could be covered first.	(SUM): -Turns and angles -Right angles in shapes -Compare angles -Draw accurately -Horizontal and vertical -Parallel and perpendicular -Recognise and describe 2D shapes -Recognise and describe 3D shapes -Make 3D shapes.	AUTUMN: TO look at obj in SPR to see what could be covered first.	Spring: TO look at obj in SPR to see what could be covered first.	(SUM): -Identify angles -Compare and order angles -Triangles -Quadrilaterals -Lines of symmetry -Complete a symmetric figure

YEAR 3: GEOMETRY (POSITION & DIRECTION)			YEAR 4: GEOMETRY (POSITION & DIRECTION)		
*NO SPECIFIC OBJECTIVES			1. describe positions on a 2-D grid as coordinates in the first quadrant (7a) 2. describe movements between positions as translations of a given unit to the left/right and up/down (7b) 3. plot specified points and draw sides to complete a given polygon. (7c) 4. Recognise horizontal and vertical line 5. Know that angles are measured in degrees and that one whole turn is 360°		
			AUTUMN: TO look at obj in Sum to see what could be covered first?	spring: TO look at obj in sum to see what could be covered?	(SUM): -Describe position -Draw on a grid -Move on a grid -Describe a movement on a grid

YEAR 3: MEASUREMENT			YEAR 4: MEASUREMENT		
1. measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) (5a-h) 2. measure the perimeter of simple 2-D shapes 3. add and subtract amounts of money to give change (at least from £10), using both £ and p in practical contexts (5i-k) 4. tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks (5l-m) 5. estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight 6. know the number of seconds in a minute and the number of days in each month, year and leap year 7. compare durations of events [for example to calculate the time taken by particular events or tasks]. (5n-o) 8. Continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed and simple equivalents of mixed units 9. Read to the nearest division and half division scales that are numbered or partially numbered; use the information to measure and draw to a suitable degree of accuracy			10. Convert between different units of measure [for example, kilometre to metre; hour to minute] (5a-d) 11. measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres (and know formula for calculating this) (5i) 12. find the area of rectilinear shapes by counting squares (5j) 13. estimate, compare and calculate different measures, including money in pounds and pence (5f-h) 14. read, write and convert time between analogue and digital 12- and 24-hour clocks (5e) 15. solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (5k) 16. Choose and use standard metric units and their abbreviations when estimating, measuring and recording length, weight and capacity; know the meaning of 'kilo', 'centi' and 'milli' and, where appropriate, use decimal notation to record measurements (e.g. 1.3 m or 0.6 kg) 17. Draw rectangles and measure and calculate their perimeters; find the area of rectilinear shapes drawn on a square grid by counting squares 18. Read time to the nearest minute; use am, pm and 12-hour clock notation; choose units of time to measure time intervals; calculate time intervals from clocks and timetables 19. Read the time from clocks, calendars and timetables		
AUTUMN: TO look at obj in SPR to see what could be covered first.	Money (SPR): -Pounds and pence -Converting pounds to pence -Adding money -Subtracting money	Time (SUM): -Months and years -Hours in a day -Telling the time to 5 mins -Telling the time to the min -AM and PM	Length & perimeter (AUT): -Kilometres -Perimeter on a grid -Perimeter of a rectangle -Perimeter of rectilinear shapes	Area (SPR): -What is area? -Counting squares -Making shapes -Comparing area	Money (SUM): -Pounds and pence -Ordering amounts of money -Estimating money -Four operations in money

	<ul style="list-style-type: none"> -Giving change Length & perimeter: -Measure length -Equivalent lengths – m/cm -Equivalent lengths – mm/cm -Compare lengths -Add lengths -Subtract lengths -Measure perimeter -Calculate perimeter 	<ul style="list-style-type: none"> -24-Hour clock -Finding the duration -Comparing the duration -Start and end times -Measuring time in seconds Mass and capacity: -Measure mass (1) -Measure mass (2) -Compare mass -Add/sub mass -Measure capacity (1) -Measure capacity (2) -Compare capacity -Add/sub capacity 			Time: <ul style="list-style-type: none"> -Hours, minutes and seconds -Years, months and days -Analogue to digital: 12-hour -Analogue to digital: 24-hour
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YEAR 3: STATISTICS			YEAR 4: STATISTICS		
<ol style="list-style-type: none"> 1. interpret and present data using bar charts, pictograms and tables (8a-c) 2. solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables (8d-f) 3. Use Venn diagrams or Carroll diagrams to sort data and objects using more than one criterion 			<ol style="list-style-type: none"> 1. interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. (8a-b) 2. solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. (8c-d) 3. Use Venn diagrams or Carroll diagrams to sort data and objects using more than one criterion 		
AUTUMN: TO look at obj in SPR to see what could be covered first.	(SPR): <ul style="list-style-type: none"> -Pictograms -Bar charts -Tables 		AUTUMN: TO look at obj in sum to see what could be covered first?		(SUM): <ul style="list-style-type: none"> -Interpret charts -Comparison, sum and difference -Introducing line graphs -Line graphs