



Ferndale Primary and Nursery School

Year 4

Place value

- count in multiples of 6, 7, 9, 25 and 1000
- find 1000 more or less than a given number
- count backwards through zero to include negative numbers
- recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)
- order and compare numbers beyond 1000
- identify, represent and estimate numbers using different representations
- round any number to the nearest 10, 100 or 1000
- 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 zero and place value.

Language Enrichment	First Hand Experiences	Purpose / Life Skills	Previous Knowledge
<p>Thousands, hundreds, tens, ones, order, compare, estimate, round, numerals, roman numerals.</p> <p>Finding similarities and differences between numbers.</p> <p>Class counting or pair ping pong counting</p> <p>Oracy stem sentences around board or available on slides to read</p>	<p>Practical activities: Making numbers of varying sizes practically using base 10 equipment and counters Human number lines – recreate number lines on the playground Comparing numbers – Nrich assorted games Negative numbers – Nrich game Roman numerals – linked to Romans history topic</p>	<p>Ordering numbers – link to wages Rounding numbers – link to process in shops Large numbers place value – link to footballer’s wages etc Negative numbers – link to lifts/elevators / temperatures</p>	<ul style="list-style-type: none"> • count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number • ? recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • ? compare and order numbers up to 1000 • ? identify, represent and estimate numbers using different representations • ? read and write numbers up to 1000 in numerals and in words <p>? solve number problems and practical problems involving these ideas.</p>



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Fractions (inc. decimals)

- 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 one hundred and dividing tenths by ten.
- ♣ 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
- ♣ recognise and write decimal equivalents of any number of tenths or hundredths
- ♣ recognise and write decimal equivalents
- ♣ 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 one decimal place to the nearest whole number
- ♣ compare numbers with the same number of decimal places up to two decimal places
- ♣ solve simple measure and money problems involving fractions and decimals to two decimal places.

Language Enrichment	First Hand Experiences	Purpose / Life Skills	Previous Knowledge
<p>Would you rather questions about fractions and fractions of amounts.</p> <p>Counting in decimal intervals.</p> <p>Vocabulary highlighted and taught and put onto working wall.</p> <p>Oracy stem sentences around board or available on slides to read.</p>	<p>Practical activities:</p> <ul style="list-style-type: none"> • Use of fraction wall packs – visually compare fraction sizes and equivalents • Practical Fractions – linked to cakes/ pizzas / chocolate • Fractions online equality game – linked to cups/ pizzas/ bar models – different representations • Decimals and tenths – chewit packets activity • Making decimals with place value counters • Decimal place value – nice and nasty nrch game • 	<p>Food fractions, fractions of groups of objects.</p> <p>Decimal numbers linked to money notation.</p>	<ul 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 • recognise, find and write fractions of a discrete set of objects: unit fractions and nonunit fractions with small denominators • 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 • compare and order unit fractions, and fractions with the same denominators



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MEASURE

- ♣ Convert between different units of measure [for example, kilometre to metre; hour to minute]
- ♣ measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
- ♣ find the area of rectilinear shapes by counting squares
- ♣ estimate, compare and calculate different measures, including money in pounds and pence. Mathematics – key stages 1 and 2 28 Statutory requirements
- ♣ read, write and convert time between analogue and digital 12- and 24-hour clock
- ♣ solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.

Language Enrichment	First Hand Experiences	Purpose / Life Skills	Previous Knowledge
<p>Rhymes and songs to help learn units of measure and compare them</p> <p>Vocabulary highlighted and taught and put onto working wall.</p> <p>Oracy stem sentences around board or available on slides to read.</p>	<p>Practical activities:</p> <ul style="list-style-type: none"> - Use of metre sticks, trundle wheels to measure perimeter of classroom and playground - Measure challenges in classroom using variety of equipment – rulers/ tape measures/ metre sticks etc –e.g can you find an item that is 7cm.? - Area challenges with cubes – how many ways...? - Area challenge – design a zoo activity - Measure challenge – create clothes for a giant - Use of stopwatches – measure different units of time- seconds/ minutes etc - Using calendars – calendar challenges 	<p>All length activities linked to real life objects – playground/ classroom items etc</p> <p>Change recipes or measures by converting.</p> <p>Converting travel timetables</p>	<p>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p> <ul style="list-style-type: none"> ♣ measure the perimeter of simple 2-D shapes ♣ add and subtract amounts of money to give change, using both £ and p in practical contexts ♣ tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks ♣ 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 ♣ know the number of seconds in a minute and the number of days in each month, year and leap year ♣ compare durations of events [for example to calculate the time taken by particular events or tasks].



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Addition and Subtraction

- 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.

Language Enrichment	First Hand Experiences	Purpose / Life Skills	Previous Knowledge
<p>Modelling strategies with a partner, explaining using concrete resources and abstract resources.</p> <p>Creating mathematical models to represent word problems</p> <p>Vocabulary highlighted and taught and put onto working wall.</p> <p>Oracy stem sentences around board or available on slides to read.</p>	<p>Practical activities:</p> <ul style="list-style-type: none"> - add and subtract numbers of varying sizes practically using base 10 and counters. - Human numberline 	<p>Money – change and spending</p> <p>Rounding money</p> <p>Maths problems based in real life scenarios as much as possible e.g. shops, recipes etc.</p>	<ul style="list-style-type: none"> • add and subtract numbers mentally, including: ♣ a three-digit number and ones ♣ a three-digit number and tens ♣ a three-digit number and hundreds • ♣ add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction • ♣ estimate the answer to a calculation and use inverse operations to check answers <p>♣ solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p>



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Multiplication and Division

- Recall multiplication and division facts for multiplication tables up to 12 x 12
- 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
- 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 one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Language Enrichment	First Hand Experiences	Purpose / Life Skills	Previous Knowledge
<p>Songs and rhymes to recall times table facts.</p> <p>Creating a times table using a number line, if I know that... then...</p> <p>Vocabulary highlighted and taught and put onto working wall.</p> <p>Oracy stem sentences around board or available on slides to read.</p>	<ul style="list-style-type: none"> - Lots of practice of multiply and dividing with counters before introducing written methods. - Written methods introduced alongside counters. - Area work – practically making shapes and measuring. - Area challenges – can you make a shape with the area of...? - Times tables Liz Hopkins games - Times tables songs - Daily 10 and TT Rockstars <p>Nrich investigations:</p> <ul style="list-style-type: none"> • Carrying cards • Zios and zepts • Multiplication square jigsaw 	<p>Maths problems based in real life scenarios as much as possible e.g. shops, recipes etc.</p> <p>Recipe scaling, measuring scaling</p> <p>Correspondence problems such as combinations of football kit shirt and shorts.</p>	<ul style="list-style-type: none"> • recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables • ♣ 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 ♣ 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.



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Geometry

- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- Identify acute and obtuse angles and compare and order angles up to two right angles by size*
- ♣ identify lines of symmetry in 2-D shapes presented in different orientations
- ♣ complete a simple symmetric figure with respect to a specific line of symmetry.
- ♣ 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*

Language Enrichment	First Hand Experiences	Purpose / Life Skills	Previous Knowledge
<p>Giving directions to a partner to move</p> <p>Sorting angles / shapes. Identifying examples that do not fit.</p> <p>Similarities and differences between shapes / angles</p> <p>Vocabulary highlighted and taught and put onto working wall.</p> <p>Oracy stem sentences around board or available on slides to read.</p>	<p>Practical activities:</p> <ul style="list-style-type: none"> - identify angles around the classroom and the school. - create different angles on the tables using tape and get the children to identify as many different angles as they can. - Use rulers to demonstrate the different types of angles - use practical resources – e.g. 2D and 3D shapes 	<p>Layout of a room</p> <p>Building objects</p> <p>Designing</p> <p>Following maps</p> <p>Making shapes from nets</p> <p>Shape in architecture</p> <p>Symmetry in nature</p> <p>Programming and robot</p> <p>Treasure map</p>	<ul style="list-style-type: none"> ♣ draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them ♣ recognise angles as a property of shape or a description of a turn ♣ 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 ♣ identify horizontal and vertical lines and pairs of perpendicular and parallel lines.



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Statistics

- 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.

Language Enrichment	First Hand Experiences	Purpose / Life Skills	Previous Knowledge
<p>Present information from a research project to share what is found.</p> <p>Work in a group to plan, gather and present data.</p> <p>Use a time graph to tell the story of events e.g a car's distance journey over time.</p> <p>Vocabulary highlighted and taught and put onto working wall.</p> <p>Oracy stem sentences around board or available on slides to read</p>	<p>Creating bar charts and pictograms based on research conducted in Science or research related to children's interests</p> <p>Nrich: Take your dog for a walk – graphs in real life How big are classes 5, 6 and 7? – bar chart and pictogram problem solving Venn diagrams – problem solving</p>	<p>Jobs in the future. Analysing data.</p> <p>Weather research</p> <p>School surveys</p>	<p>- interpret and present data using bar charts, pictograms and tables 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.</p>



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