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| A picture containing icon  Description automatically generated  **Hennock Community Primary School**  **Maths Curriculum**  Our Curriculum statements are designed to be used as a supportive tool to plan teaching and learning across our school. The key skills are derived from the National Curriculum and spilt into individual year groups to support a progressive approach and mixed age classes. |
| **Mathematics at The Link Academy Trust**  Our core purpose is to equip all pupils with the skills and confidence to develop their mathematical fluency, problem solving and reasoning in preparation for assessment (including statutory testing), further education and life beyond.  Children are encouraged to develop curiosity about number and embrace the mathematics that surrounds them each day in a variety of contexts that have meaningful connections to real life, including links with other curriculum subjects. We offer opportunities for children to develop understanding and mathematical articulacy through a cohesive progression of learning across the school in order to maximise their depth of learning. Children should be able to demonstrate a deep conceptual understanding of an area of maths and build on this over time, as well as establishing a secure knowledge of key number facts to allow them to become efficient mathematicians.  Mathematics at The Link Academy Trust is an opportunity for pupils to take risks, challenge themselves and work both independently and collaboratively towards solving problems. Children will develop concise and accurate vocabulary in mathematics through consistent modelling by teachers and high expectations for the pupils.  Our ‘learning powers’ (resilience, resourcefulness, reciprocity and reflectiveness) are evident throughout mathematics in The Link Academy Trust. Alongside this, we promote growth mindset and ensure all children feel empowered to achieve. This supports our children to develop self-confidence when faced with mathematical challenges, allowing them to embrace mistakes as part of the learning process and in turn value the importance of effort.  We strive to accelerate progress and improve outcomes for all of our pupils each year. |
| **Vocabulary**  Children’s command of vocabulary is fundamental to learning and progress across the curriculum. Vocabulary is developed actively, building systematically on pupil’s current knowledge and deepening their understanding of etymology and morphology (word origins and structures) to increase their store of words. Simultaneously, pupils make links between known and new vocabulary, and discuss and apply shades of meaning. In this way, children expand the vocabulary choices that are available to them. It is essential to introduce technical vocabulary which define each curriculum subject.  Vocabulary development is underpinned by an oracy culture and a tiered approach. High value is placed on the conscious, purposeful selection of well-chosen vocabulary and appropriate sentence structure to enrich access to learning and feed into written work across the curriculum. |
| |  |  |  | | --- | --- | --- | | **EYFS** | | | | **Counting and recognising numbers** | **Adding and subtracting** | **Measures, shape and space** | | **COUNTING**  number zero, one, two, three… to twenty and beyond zero, ten, twenty… one hundred none how many…? count, count (up) to count on (from, to) count back (from, to) count in ones, twos… tens… more, less, many, few odd, even every other how many times? pattern, pair guess how many, estimate nearly, close to, about the same as just over, just under too many, too few, enough, not enough  **COMPARING AND ORDERING NUMBERS**  the same number as, as many as Of two objects/amounts: greater, more, larger, bigger less, fewer, smaller Of three or more objects/amounts: greatest, most, biggest, largest least, fewest, smallest one more, ten more one less, ten less compare order size first, second, third… tenth last, last but one before, after next between above, below | add, more, and make, sum, total altogether score double one more, two more, ten more… how many more to make… ? how many more is… than…? take (away), leave how many are left/left over? how many have gone? one less, two less… ten less… how many fewer is… than…? difference between is the same as | MEASURES (GENERAL)  measure size compare guess, estimate enough, not enough too much, too little too many, too few nearly, close to, about the same as just over, just under  LENGTH  length, width, height, depth long, short, tall high, low wide, narrow deep, shallow thick, thin longer, shorter, taller, higher… and so on longest, shortest, tallest, highest… and so on far, near, close  MASS  weigh, weighs, balances heavy/light, heavier/lighter, heaviest/lightest balance, scales, weight  CAPACITY  full half full empty holds container  TIME  time days of the week: Monday, Tuesday… day, week birthday, holiday morning, afternoon, evening, night bedtime, dinnertime, playtime today, yesterday, tomorrow before, after next, last now, soon, early, late quick, quicker, quickest, quickly slow, slower, slowest, slowly old, older, oldest new, newer, newest takes longer, takes less time hour, o’clock clock, watch, hands  POSITION, DIRECTION AND MOVEMENT  position over, under above, below top, bottom, side on, in outside, inside around in front, behind front, back before, after beside, next to opposite apart between middle, edge corner direction left, right up, down forwards, backwards, sideways across close, far, near along through to, from, towards, away from movement slide roll turn stretch, bend, tick, cross draw draw a line between join (up) ring cost count work out answer check | | **Solving problems** | | REASONING ABOUT NUMBERS OR SHAPES  pattern puzzle answer right, wrong what could we try next? how did you work it out? count, sort group, set match same, different list  PROBLEMS INVOLVING ‘REAL LIFE’ OR MONEY  compare double half, halve pair count out, share out left, left over money coin penny, pence, pound price cost buy sell spend, spent pay change dear, costs more cheap, costs less, cheaper costs the same as how much…? how many…? total | | EXPLORING PATTERNS, SHAPE AND SPACE  shape, pattern flat curved, straight round hollow, solid corner face, side, edge, end sort make, build, draw  3D SHAPES  cube pyramid sphere cone  2D SHAPES  circle triangle square rectangle star  PATTERNS AND SYMMETRY  size bigger, larger, smaller symmetrical pattern repeating pattern match | **Instructions** | **General** | | listen join in say think imagine remember start from start with start at look at point to show me put, place fit arrange rearrange change, change over split separate carry on, continue repeat what comes next? find choose collect use make build tell me describe pick out talk about explain show me read write trace copy complete finish, end fill in shade colour | same number/s different number/s missing number/s number facts number line, number track number square number cards counters, cubes, blocks, rods die, dice dominoes pegs, peg board same way, different way best way, another way in order, in a different order not all, every, each | | **Year 1** | | | | **Numbers and the number system** | **Calculations** | **Solving problems** | | COUNTING, PROPERTIES OF NUMBERS AND NUMBER SEQUENCES  number zero, one, two, three… to twenty and beyond zero, ten, twenty… one hundred none how many…? count, count (up) to count on (from, to) count back (from, to) count in ones, twos… tens… more, less, many, few odd, even every other how many times? pattern, pair  PLACE VALUE AND ORDERING  units, ones tens exchange digit ‘teens’ number the same number as, as many as equal to Of two objects/amounts: greater, more, larger, bigger less, fewer, smaller Of three or more objects/amounts: greatest, most, biggest, largest least, fewest, smallest one more, ten more one less, ten less compare order size first, second, third… tenth, eleventh… twentieth last, last but one before, after next between, half-way between above, below  ESTIMATING  guess how many, estimate nearly, roughly, close to about the same as just over, just under too many, too few, enough, not enough | ADDITION AND SUBTRACTION  +, add, more, plus make, sum, total altogether score double, near double one more, two more… ten more how many more to make…? how many more is… than…? how much more is…? −, subtract, take (away), minus leave how many are left/left over? how many have gone? one less, two less, ten less… how many fewer is… than…? how much less is…? difference between half, halve =, equals, sign, is the same as | MAKING DECISIONS AND REASONING  pattern puzzle answer right, wrong what could we try next? how did you work it out? count out, share out, left, left over number sentence sign, operation  MONEY  money coin penny, pence, pound price cost buy sell spend, spent pay change dear, costs more cheap, costs less, cheaper costs the same as how much…? how many…? Total  TIME  time days of the week: Monday, Tuesday… seasons: spring, summer, autumn, winter day, week, month, year weekend, birthday, holiday morning, afternoon, evening night, midnight bedtime, dinnertime, playtime today, yesterday, tomorrow before, after next, last now, soon, early, late quick, quicker, quickest, quickly fast, faster, fastest slow, slower, slowest, slowly old, older, oldest new, newer, newest takes longer, takes less time hour, o’clock, half past clock, watch, hands how long ago? how long will it be to…? how long will it take to…? how often? always, never, often, sometimes, usually once, twice  SHAPE AND SPACE  shape, pattern flat curved, straight round hollow, solid corner point, pointed face, side, edge, end sort make, build, draw  3D SHAPES  cube cuboid pyramid sphere cone cylinder  2D SHAPES  circle triangle square rectangle star | | **Organising and using data** | | count, sort, vote group, set list same, different table | | **Measures, shape and space** | | MEASURES (GENERAL)  measure size compare guess, estimate enough, not enough too much, too little too many, too few nearly, roughly, close to, about the same as just over, just under  LENGTH  length, width, height, depth long, short, tall high, low wide, narrow deep, shallow thick, thin longer, shorter, taller, higher… and so on longest, shortest, tallest, highest… and so on far, near, close metre ruler, metre stick  MASS  weigh, weighs, balances heavy/light, heavier/lighter, heaviest/lightest balance, scales, weight  CAPACITY  full half full empty holds container  PATTERNS AND SYMMETRY  size bigger, larger, smaller symmetrical pattern repeating pattern match  POSITION, DIRECTION AND MOVEMENT  position over, under, underneath above, below top, bottom, side on, in outside, inside around in front, behind front, back before, after beside, next to opposite apart between middle, edge centre corner direction journey left, right up, down forwards, backwards, sideways across close, far, near along through to, from, towards, away from movement slide roll turn, whole turn, half turn stretch, bend, cost count work out answer check | | **Instructions** | | listen join in say think imagine remember start from start with start at look at point to show me put, place fit arrange rearrange change, change over split separate carry on, continue repeat what comes next? find choose collect use make build tell me describe pick out talk about explain show me read write record trace copy complete finish, end fill in shade colour tick, cross draw draw a line between join (up) ring arrow | | **General** | | same number/s different number/s missing number/s number facts number line, number track number square number cards abacus counters, cubes, blocks, rods die, dice dominoes pegs, peg board same way, different way best way, another way in order, in a different order not all, every, each | |  |  | | **Year 2** | | | | **Numbers and the number system** | **Calculations** | **Solving problems** | | COUNTING, PROPERTIES OF NUMBERS AND NUMBER SEQUENCES  number zero, one, two, three… to twenty and beyond zero, ten, twenty… one hundred zero, one hundred, two hundred… one thousand none how many…? count, count (up) to count on (from, to) count back (from, to) count in ones, twos, threes, fours, fives… count in tens more, less, many, few tally odd, even every other how many times? multiple of sequence continue predict pattern, pair, rule  PLACE VALUE AND ORDERING  units, ones tens, hundreds digit one-, two- or three-digit number ‘teens’ number place, place value stands for, represents exchange the same number as, as many as equal to Of two objects/amounts: greater, more, larger, bigger less, fewer, smaller Of three or more objects/amounts: greatest, most, biggest, largest least, fewest, smallest one more, ten more one less, ten less compare order size first, second, third… tenth… twentieth twenty-first, twenty-second… last, last but one before, after next between, half-way between above, below  ESTIMATING  guess how many, estimate nearly, roughly, close to about the same as just over, just under exact, exactly too many, too few, enough, not enough round, nearest, round to the nearest ten  FRACTIONS  part, equal parts fraction one whole one half, two halves one quarter, two… three… four quarters | ADDITION AND SUBTRACTION  +, add, addition, more, plus make, sum, total altogether score double, near double one more, two more... ten more... one hundred more how many more to make…? how many more is… than…? how much more is…? −, subtract, subtraction, take (away), minus leave, how many are left/left over? one less, two less… ten less… one hundred less how many fewer is… than…? how much less is…? difference between half, halve =, equals, sign, is the same as tens boundary  MULTIPLICATION AND DIVISION  lots of, groups of ×, times, multiply, multiplied by multiple of once, twice, three times… ten times… times as (big, long, wide… and so on) repeated addition array row, column double, halve share, share equally one each, two each, three each… group in pairs, threes… tens equal groups of ÷, divide, divided by, divided into left, left over | MAKING DECISIONS AND REASONING  pattern, puzzle calculate, calculation mental calculation jotting answer right, correct, wrong what could we try next? how did you work it out? number sentence sign, operation, symbol  MONEY  money coin penny, pence, pound (£) price, cost buy, bought, sell, sold spend, spent pay change dear, costs more cheap, costs less, cheaper how much…? how many…? Total | | **Organising and using data** | | count, tally, sort, vote graph, block graph, pictogram represent group, set same, different list, table label, title most popular, most common least popular, least common | | **Instructions** | | listen join in say recite think imagine remember start from start with start at look at point to show me put, place fit arrange, rearrange change, change over split separate carry on, continue repeat what comes next? predict describe the pattern describe the rule find, find all, find different investigate choose decide collect use make build tell me describe name pick out discuss talk about explain explain your method explain how you got your answer give an example of… show how you…read write record write in figures present represent trace copy complete finish, end fill in shade, colour label tick, cross draw draw a line between join (up) ring arrow cost, count, tally calculate work out solve answer check  **General**  same, different missing number/s number facts number pairs number bonds number line, number track number square, hundred square number cards number grid abacus counters, cubes, blocks, rods die, dice dominoes pegs, peg board geo-strips same way, different way best way, another way in order, in a different order not all, every, each | | **Measures, shape and space** | | MEASURES (GENERAL)  measure size compare measuring scale guess, estimate enough, not enough too much, too little too many, too few nearly, roughly, about, close to, about the same as just over, just under  LENGTH  length, width, height, depth long, short, tall, high, low wide, narrow, deep, shallow, thick, thin longer, shorter, taller, higher… and so on longest, shortest, tallest, highest… and so on far, further, furthest, near, close metre (m), centimetre (cm) ruler, metre stick, tape measure  MASS  weigh, weighs, balances heavy/light, heavier/lighter, heaviest/lightest kilogram (kg), half-kilogram, gram (g) balance, scales, weight  CAPACITY  capacity full, half full empty holds, contains litre (l), half-litre, millilitre (ml) container  TIME  time days of the week: Monday, Tuesday… months of the year: January, February… seasons: spring, summer, autumn, winter day, week, fortnight, month, year weekend, birthday, holiday morning, afternoon, evening, night, midnight bedtime, dinnertime, playtime today, yesterday, tomorrow before, after next, last now, soon, early, late quick, quicker, quickest, quickly fast, faster, fastest slow, slower, slowest, slowly old, older, oldest new, newer, newest takes longer, takes less time how long ago? how long will it be to…? how long will it take to…? hour, minute, second o’clock, half past, quarter to, quarter past clock, watch, hands digital/analogue clock/watch, timer how often? always, never, often, sometimes, usually once, twice  SHAPE AND SPACE  shape, pattern flat, curved, straight round hollow, solid corner point, pointed face, side, edge, end sort make, build, draw surface  3D SHAPES  cube cuboid pyramid sphere cone cylinder  2D SHAPES  circle, circular triangle, triangular square rectangle, rectangular star pentagon hexagon octagon  PATTERNS AND SYMMETRY  size bigger, larger, smaller symmetrical line of symmetry fold match mirror line, reflection pattern repeating pattern  POSITION, DIRECTION AND MOVEMENT  position over, under, underneath above, below top, bottom, side on, in outside, inside around in front, behind front, back before, after beside, next to opposite apart between middle, edge centre corner direction journey, route left, right up, down higher, lower forwards, backwards, sideways across close, far, near along through to, from, towards, away from clockwise, anti-clockwise movement slide roll whole turn, half turn, quarter turn right angle straight line stretch, bend | | **Year 3** | | | | **Numbers and the number system** | **Calculations** | **Solving problems** | | COUNTING, PROPERTIES OF NUMBERS AND NUMBER SEQUENCES  number zero, one, two, three… to twenty and beyond zero, ten, twenty… one hundred zero, one hundred, two hundred… one thousand none how many…? count, count (up) to count on (from, to) count back (from, to) count in ones, twos, threes, fours, fives… count in tens, hundreds more, less, many, few tally odd, even every other how many times? multiple of sequence continue predict pattern, pair, rule relationship  PLACE VALUE AND ORDERING  units, ones tens, hundreds digit one-, two- or three-digit number ‘teens’ number place, place value stands for, represents exchange the same number as, as many as equal to Of two objects/amounts: greater, more, larger, bigger less, fewer, smaller Of three or more objects/amounts: greatest, most, biggest, largest least, fewest, smallest one more, ten more, one hundred more one less, ten less, one hundred less compare order size first, second, third… tenth… twentieth twenty-first, twenty-second… last, last but one before, after next between, half-way between above, below  ESTIMATING  guess how many, estimate nearly, roughly, close to approximate, approximately about the same as just over, just under exact, exactly too many, too few, enough, not enough round (up or down) nearest, round to the nearest ten FRACTIONS part, equal parts fraction one whole one half, two halves one quarter, two… three… four quarters one third, two thirds, three thirds one tenth | ADDITION AND SUBTRACTION  +, add, addition, more, plus make, sum, total altogether score double, near double one more, two more... ten more... one hundred more how many more to make…? how many more is… than…? how much more is…? −, subtract, subtraction, take (away), minus leave, how many are left/left over? one less, two less… ten less… one hundred less how many fewer is… than…? how much less is…? difference between half, halve =, equals, sign, is the same as tens boundary, hundreds boundary  MULTIPLICATION AND DIVISION  lots of, groups of ×, times, multiply, multiplication, multiplied by multiple of, product once, twice, three times… ten times… times as (big, long, wide… and so on) repeated addition array row, column double, halve share, share equally one each, two each, three each…group in pairs, threes… tens equal groups of ÷, divide, division, divided by, divided into left, left over, remainder | MAKING DECISIONS AND REASONING pattern, puzzle calculate, calculation mental calculation method jotting answer right, correct, wrong what could we try next? how did you work it out? number sentence sign, operation, symbol, equation MONEY money coin, note penny, pence, pound (£) price, cost buy, bought, sell, sold spend, spent pay change dear, costs more, more/most expensive cheap, costs less, cheaper, less/least expensive how much…? how many…? total, amount value, worth | | **Handling data** | | count, tally, sort, vote graph, block graph, pictogram represent group, set list, chart, bar chart table, frequency table Carroll diagram, Venn diagram label, title, axis, axes diagram most popular, most common least popular, least common | | **Measures, shape and space** | | MEASURES (GENERAL)  measure size compare measuring scale, division guess, estimate enough, not enough too much, too little too many, too few nearly, roughly, about, close to, about the same as, approximately just over, just under  LENGTH  length, width, height, depth long, short, tall, high, low wide, narrow, deep, shallow, thick, thin longer, shorter, taller, higher… and so on longest, shortest, tallest, highest… and so on far, further, furthest, near, close distance apart/between, distance to… from… kilometre (km), metre (m), centimetre (cm) mile ruler, metre stick, tape measure  MASS  weigh, weighs, balances heavy/light, heavier/lighter, heaviest/lightest kilogram (kg), half-kilogram, gram (g) balance, scales, weight  CAPACITY  capacity full, half full empty holds, contains litre (l), half-litre, millilitre (ml) container  TIME  time days of the week: Monday, Tuesday… months of the year: January, February… seasons: spring, summer, autumn, winter day, week, fortnight, month, year, century weekend, birthday, holiday calendar, date morning, afternoon, evening, night, midnight am, pm bedtime, dinnertime, playtime today, yesterday, tomorrowbefore, after next, last now, soon, early, late, earliest, latest quick, quicker, quickest, quickly fast, faster, fastest slow, slower, slowest, slowly old, older, oldest new, newer, newest takes longer, takes less time how long ago? how long will it be to…? how long will it take to…? hour, minute, second o’clock, half past, quarter to, quarter past clock, watch, hands digital/analogue clock/watch, timer how often? always, never, often, sometimes, usually once, twice  SHAPE AND SPACE  shape, pattern flat, curved, straight round hollow, solid corner point, pointed face, side, edge, end sort make, build, draw surface right-angled vertex, vertices layer, diagram  3D SHAPES  cube cuboid pyramid sphere, hemi-sphere cone cylinder prism  2D SHAPES  circle, circular, semi-circle triangle, triangular square rectangle, rectangular star pentagon, pentagonal hexagon, hexagonal octagon, octagonal quadrilateral  PATTERNS AND SYMMETRY  size bigger, larger, smaller symmetrical line of symmetry fold match mirror line, reflection pattern repeating pattern  POSITION, DIRECTION AND MOVEMENT  position over, under, underneath above, below top, bottom, side on, in outside, inside around in front, behind front, back before, after beside, next to opposite apart between middle, edge centre corner direction journey, route, map, plan left, right up, down higher, lower forwards, backwards, sideways across close, far, near along through to, from, towards, away from ascend, descend grid row, column clockwise, anti-clockwise compass point north, south, east, west (N, S, E, W) horizontal, vertical diagonal movement slide roll whole turn, half turn, quarter turn angle, …is a greater/smaller angle than right angle straight line stretch, bend | | **General** | | same, different missing number/s number facts, number pairs, number bonds greatest value, least value number line, number track number square, hundred square number cards number grid abacus counters, cubes, blocks, rods die, dice dominoes pegs, peg board geo-strips same way, different way best way, another way in order, in a different order not all, every, each | | **Instructions** | | listen join in say recite think imagine remember start from start with start at look at point to show me put, place fit arrange, rearrange change, change over split separate carry on, continue repeat what comes next? predict describe the pattern describe the rule find, find all, find different investigate choose decide collect use make build tell me describe name pick out discuss talk about explain explain your method explain how you got your answer give an example of… show how you… show your working read write record write in figures present represent interpret trace copy complete finish, end fill in shade, colour label tick, cross draw, sketch draw a line between join (up) ring arrow cost, count, tally calculate work out solve investigate question answer check | | **Year 4** | | | | **Numbers and the number system** | **Calculations** | **Solving problems** | | PLACE VALUE, ORDERING AND ROUNDING  units, ones tens, hundreds, thousands ten thousand, hundred thousand, million digit, one-, two-, three- or four-digit number numeral ‘teens’ number place, place value stands for, represents exchange the same number as, as many as equal to Of two objects/amounts:  >, greater than, more than, larger than, bigger than  < less than, fewer than, smaller than  Of three or more objects/amounts: greatest, most, largest, biggest least, fewest, smallest one… ten… one hundred… one thousand more/less compare, order, size first… tenth… twentieth last, last but one before, after next between, half-way between guess how many, estimate nearly, roughly, close to, about the same as approximate, approximately just over, just under exact, exactly too many, too few, enough, not enough round (up or down), nearest round to the nearest ten round to the nearest hundred integer, positive, negative above/below zero, minus  PROPERTIES OF NUMBERS AND NUMBER SEQUENCES number, count, how many…? odd, even every other how many times? multiple of digit next, consecutive sequence continue predict pattern, pair, rule relationship sort, classify, property  FRACTIONS AND DECIMALS  part, equal parts fraction one whole half, quarter, eighth third, sixth fifth, tenth, twentieth proportion, in every, for every decimal, decimal fraction decimal point, decimal place | ADDITION AND SUBTRACTION  add, addition, more, plus, increase sum, total, altogether score double, near double how many more to make…? subtract, subtraction, take (away), minus, decrease leave, how many are left/left over? difference between half, halve how many more/fewer is… than…? how much more/less is…? equals, sign, is the same as tens boundary, hundreds boundary inverse  MULTIPLICATION AND DIVISION  lots of, groups of times, multiply, multiplication, multiplied by multiple of, product once, twice, three times… ten times… times as (big, long, wide… and so on) repeated addition array row, column double, halve share, share equally one each, two each, three each… group in pairs, threes… tens equal groups of divide, division, divided by, divided into remainder factor, quotient, divisible by inverse | MAKING DECISIONS AND REASONING  pattern, puzzle calculate, calculation mental calculation method jotting answer right, correct, wrong what could we try next? how did you work it out? number sentence sign, operation, symbol, equation  MONEY  money coin, note penny, pence, pound (£) price, cost buy, bought, sell, sold spend, spent pay change dear, costs more, more/most expensive cheap, costs less, cheaper, less/least expensive how much…? how many…? total, amount value, worth | | **Handling data** | | count, tally, sort, vote survey, questionnaire, data graph, block graph, pictogram represent group, set list, chart, bar chart, tally chart table, frequency table Carroll diagram, Venn diagram label, title, axis, axes diagram most popular, most common least popular, least common | | **Measures, shape and space** | | MEASURES (GENERAL)  measure, measurement size compare unit, standard unit metric unit, imperial unit measuring scale, division guess, estimate enough, not enough too much, too little too many, too few nearly, roughly, about, close to about the same as, approximately just over, just under  LENGTH  length, width, height, depth, breadth long, short, tall, high, low wide, narrow, deep, shallow, thick, thin longer, shorter, taller, higher… and so on longest, shortest, tallest, highest… and so on far, further, furthest, near, close distance apart/between, distance to… from… edge, perimeter kilometre (km), metre (m) centimetre (cm), millimetre (mm) mile ruler, metre stick, tape measure  MASS  mass: big, bigger, small, smaller, balances weight: heavy/light, heavier/lighter, heaviest/lightest weigh, weighs kilogram (kg), half-kilogram, gram (g) balance, scales  CAPACITY  capacity full, half full empty holds, contains litre (l), half-litre, millilitre (ml) pint container, measuring cylinder  AREA  area, covers, surface square centimetre (cm2)  TIME  time days of the week: Monday, Tuesday… months of the year: January, February… seasons: spring, summer, autumn, winter day, week, fortnight, month year, leap year, century, millennium weekend, birthday, holiday calendar, date, date of birth morning, afternoon, evening, night, am, pm, noon, midnight today, yesterday, tomorrow before, after, next, last now, soon, early, late, earliest, latest quick, quicker, quickest, quickly fast, faster, fastest, slow, slower, slowest, slowly old, older, oldest, new, newer, newest takes longer, takes less time how long ago? how long will it be to…? how long will it take to…? timetable, arrive, depart hour, minute, second o’clock, half past, quarter to, quarter past clock, watch, hands digital/analogue clock/watch, timer how often? always, never, often, sometimes, usually  SHAPE AND SPACE  shape, pattern flat, line curved, straight round hollow, solid corner point, pointed face, side, edge, end sort make, build, construct, draw, sketch centre, radius, diameter net surface angle, right-angled base, square-based vertex, vertices layer, diagram regular, irregular concave, convex open, closed  3D SHAPES  3D, three-dimensional cube cuboid pyramid sphere, hemi-sphere, spherical cone cylinder, cylindrical prism tetrahedron, polyhedron  2D SHAPES  2D, two-dimensional circle, circular, semi-circle triangle, triangular equilateral triangle, isosceles triangle square rectangle, rectangular, oblong pentagon, pentagonal hexagon, hexagonal heptagon octagon, octagonal polygon quadrilateral  PATTERNS AND SYMMETRY  size bigger, larger, smaller symmetrical line of symmetry, line symmetry fold match mirror line, reflection, reflect pattern, repeating pattern, translation  POSITION, DIRECTION AND MOVEMENT  position over, under, underneath above, below, top, bottom, side on, in, outside, inside, around in front, behind, front, back before, after, beside, next to opposite, apart between, middle, edge, centre corner direction journey, route, map, plan left, right up, down, higher, lower forwards, backwards, sideways, across close, far, near along, through, to, from, towards, away from ascend, descend grid row, column origin, coordinates clockwise, anti-clockwise compass point, north, south, east, west (N, S, E, W) north-east, north-west, south-east, south-west (NE, NW, SE, SW) horizontal, vertical, diagonal movement slide, roll whole turn, half turn, quarter turn, rotate angle, …is a greater/smaller angle than right angle degree straight line stretch, bend ruler, set square angle measurer, compasses | | **General** | | same, different missing number/s number facts, number pairs, number bonds greatest value, least value number line, number track number square, hundred square number cards, number grid abacus counters, cubes, blocks, rods die, dice dominoes pegs, peg board, pin board geo-strips same way, different way best way, another way in order, in a different order not all, every, each | | **Instructions** | | listen, join in, say, recite think, imagine, remember start from, start with, start at look at, point to, show me put, place arrange, rearrange change, change over split, separate carry on, continue, repeat what comes next? predict describe the pattern, describe the rule find, find all, find different investigate choose, decide collect use, make, build, construct tell me, describe, name, pick out discuss, talk about explain explain your method explain how you got your answer give an example of… show how you… show your working justify make a statement read, write, record write in figures present, represent interpret trace, copy complete, finish, end fill in, shade, colour label, plot tick, cross draw, sketch draw a line between, join (up), ring, arrow cost, count, tally calculate, work out, solve investigate, question answer check | | **Year 5** | | | | **Numbers and the number system** | **Measures, shape and space** | **Calculations** | | PLACE VALUE, ORDERING AND ROUNDING  units, ones tens, hundreds, thousands ten thousand, hundred thousand, million digit, one-, two-, three- or four-digit number numeral ‘teens’ number place, place value stands for, represents exchange the same number as, as many as equal to  Of two objects/amounts:  >, greater than, more than, larger than, bigger than  < less than, fewer than, smaller than  ≥, greater than or equal to  ≤, less than or equal to  Of three or more objects/amounts: greatest, most, largest, biggest least, fewest, smallest one… ten… one hundred… one thousand more/less compare, order, size ascending/descending order first… tenth… twentieth last, last but one before, after, next between, half-way between guess how many, estimate nearly, roughly, close to, about the same as approximate, approximately ≈, is approximately equal to just over, just under exact, exactly too many, too few, enough, not enough round (up or down), nearest round to the nearest ten/hundred round to the nearest thousand integer positive, negative above/below zero, minus  PROPERTIES OF NUMBERS AND NUMBER SEQUENCES number, count, how many…? odd, even every other how many times? multiple of digit next, consecutive sequence continue predict pattern, pair, rule relationship sort, classify, property formula divisible (by), divisibility, factor square number one squared, two squared… (12 , 22 …)  FRACTIONS, DECIMALS, PERCENTAGES, RATIO AND PROPORTION  part, equal parts fraction, proper/improper fraction mixed number numerator, denominator equivalent, reduced to, cancel one whole half, quarter, eighth third, sixth, ninth, twelfth fifth, tenth, twentieth, hundredth proportion, ratio in every, for every to every, as many as decimal, decimal fraction decimal point, decimal place percentage, per cent, % | MEASURES (GENERAL)  measure, measurement size compare unit, standard unit metric unit, imperial unit measuring scale, division guess, estimate enough, not enough too much, too little too many, too few nearly, roughly, about, close to about the same as, approximately just over, just under  LENGTH length, width, height, depth, breadth long, short, tall, high, low wide, narrow, deep, shallow, thick, thin longer, shorter, taller, higher… and so on longest, shortest, tallest, highest… and so on far, further, furthest, near, close distance apart/between, distance to… from… edge, perimeter kilometre (km), metre (m) centimetre (cm), millimetre (mm) mile ruler, metre stick, tape measure  MASS mass: big, bigger, small, smaller, balances weight: heavy/light, heavier/lighter, heaviest/lightest weigh, weighs kilogram (kg), half-kilogram, gram (g) balance, scales  CAPACITY  capacity full, half full empty holds, contains litre (l), half-litre, millilitre (ml) pint, gallon container, measuring cylinder  AREA  area, covers, surface square centimetre (cm2), square metre (m2) square millimetre (mm2)  TIME  time days of the week: Monday, Tuesday… months of the year: January, February… seasons: spring, summer, autumn, winter day, week, fortnight, month year, leap year, century, millennium weekend, birthday, holiday calendar, date, date of birth morning, afternoon, evening, night am, pm, noon, midnight today, yesterday, tomorrow before, after, next, last now, soon, early, late, earliest, latest quick, quicker, quickest, quickly fast, faster, fastest, slow, slower, slowest, slowly old, older, oldest, new, newer, newest takes longer, takes less time how long ago? how long will it be to…? how long will it take to…? timetable, arrive, depart hour, minute, second o’clock, half past, quarter to, quarter past clock, watch, hands digital/analogue clock/watch, timer 24-hour clock, 12-hour clock how often? always, never, often, sometimes, usually  SHAPE AND SPACE  shape, pattern flat, line curved, straight round hollow, solid corner point, pointed face, side, edge, end sort make, build, construct, draw, sketch centre, radius, diameter net surface angle, right-angled congruent base, square-based vertex, vertices layer, diagram regular, irregular concave, convex open, closed  3D SHAPES  3D, three-dimensional cube, cuboid pyramid sphere, hemi-sphere, spherical cone cylinder, cylindrical prism tetrahedron, polyhedron, octahedron  2D SHAPES  2D, two-dimensional circle, circular, semi-circle triangle, triangular equilateral triangle, isosceles triangle, scalene triangle square rectangle, rectangular, oblong pentagon, pentagonal hexagon, hexagonal heptagon octagon, octagonal polygon quadrilateral  PATTERNS AND SYMMETRY size bigger, larger, smaller symmetrical line of symmetry, axis of symmetry line symmetry, reflective symmetry fold match mirror line, reflection, reflect pattern, repeating pattern, translation  POSITION, DIRECTION AND MOVEMENT  position over, under, underneath above, below, top, bottom, side on, in, outside, inside, around in front, behind, front, back before, after, beside, next to opposite, apart between, middle, edge, centre corner direction journey, route, map, plan left, right up, down, higher, lower forwards, backwards, sideways, across close, far, near along, through, to, from, towards, away from ascend, descend grid, row, column origin, coordinates clockwise, anti-clockwise compass point, north, south, east, west (N, S, E, W) north-east, north-west, south-east, south-west (NE, NW, SE, SW) horizontal, vertical, diagonal parallel, perpendicular x-axis, y-axis quadrant movement slide, roll whole turn, half turn, quarter turn rotate, rotation angle, …is a greater/smaller angle than right angle, acute, obtuse degree straight line stretch, bend ruler, set square angle measurer, compasses, protractor | ADDITION AND SUBTRACTION  add, addition, more, plus, increase sum, total, altogether score double, near double how many more to make…? subtract, subtraction, take (away), minus, decrease leave, how many are left/left over? difference between half, halve how many more/fewer is… than…? how much more/less is…? equals, sign, is the same as tens boundary, hundreds boundary units boundary, tenths boundary inverse  MULTIPLICATION AND DIVISION lots of, groups of times, multiply, multiplication, multiplied by multiple of, product once, twice, three times… ten times… times as (big, long, wide… and so on) repeated addition array row, column double, halve share, share equally, one each, two each, three each… group in pairs, threes… tens equal groups of divide, division, divided by, divided into remainder factor, quotient, divisible by inverse | | **Solving problems** | | MAKING DECISIONS AND REASONING  pattern, puzzle calculate, calculation mental calculation method, strategy jotting answer right, correct, wrong what could we try next? how did you work it out? number sentence sign, operation, symbol, equation  MONEY  money coin, note penny, pence, pound (£) price, cost buy, bought, sell, sold spend, spent pay change dear, costs more, more/most expensive cheap, costs less, cheaper, less/least expensive how much…? how many…? total, amount, value, worth discount currency | | **Handling Data** | | count, tally, sort, vote survey, questionnaire data, database graph, block graph, line graph pictogram, represent group, set list, chart, bar chart, bar line chart tally chart table, frequency table Carroll diagram, Venn diagram label, title, axis, axes diagram most popular, most common least popular, least common mode, range maximum/minimum value classify, outcome PROBABILITY fair, unfair likely, unlikely, likelihood certain, uncertain probable, possible, impossible chance, good chance poor chance, no chance risk, doubt | | **Instructions** | | listen, join in, say, recite think, imagine, remember start from, start with, start at look at, point to, show me put, place arrange, rearrange change, change over split, separate carry on, continue, repeat what comes next? predict describe the pattern, describe the rule find, find all, find different investigate choose, decide collect use, make, build, construct, bisect tell me, describe, name, pick out, identify discuss, talk about explain explain your method/answer/reasoning give an example of… show how you… show your working justify make a statement read, write, record write in figures present, represent interpret trace, copy complete, finish, end fill in, shade, colour label, plot tick, cross draw, sketch draw a line between, join (up), ring, arrow cost, count, tally calculate, work out, solve, convert investigate, question answer check | | **General** | | same, different missing number/s number facts, number pairs, number bonds greatest value, least value number line, number track number square, hundred square number cards, number grid abacus counters, cubes, blocks, rods die, dice, spinner dominoes pegs, peg board, pin board geo-strips same way, different way best way, another way in order, in a different order not all, every, each | | **Year 6** | | | | **Numbers and the number system** | **Solving problems** | **Calculations** | | PLACE VALUE, ORDERING AND ROUNDING units, ones tens, hundreds, thousands ten thousand, hundred thousand, million digit, one-, two-, three- or four-digit number numeral ‘teens’ number place, place value stands for, represents exchange the same number as, as many as equal to Of two objects/amounts:  >, greater than, more than, larger than, bigger than  < less than, fewer than, smaller than  ≥, greater than or equal to  ≤, less than or equal to  Of three or more objects/amounts: greatest, most, largest, biggest least, fewest, smallest one… ten… one hundred… one thousand more/less compare, order, size ascending/descending order first… tenth… twentieth last, last but one before, after next between, half-way between guess how many, estimate nearly, roughly, close to, about the same as approximate, approximately ≈, is approximately equal to just over, just under exact, exactly too many, too few, enough, not enough round (up or down), nearest round to the nearest ten/hundred/thousand integer, positive, negative above/below zero, minus PROPERTIES OF NUMBERS AND NUMBER SEQUENCES number, count, how many…? odd, even every other how many times? multiple of digit next, consecutive sequence continue predict pattern, pair, rule relationship sort, classify, property formula divisible (by), divisibility, factor, factorise square number one squared, two squared… (12 , 22 …) prime, prime factor FRACTIONS, DECIMALS, PERCENTAGES, RATIO AND PROPORTION part, equal parts fraction, proper/improper fraction mixed number numerator, denominator equivalent, reduced to, cancel one whole half, quarter, eighth third, sixth, ninth, twelfth fifth, tenth, twentieth hundredth, thousandth proportion, ratio in every, for every to every, as many as decimal, decimal fraction decimal point, decimal place percentage, per cent, % | MAKING DECISIONS AND REASONING  pattern, puzzle calculate, calculation mental calculation method, strategy jotting answer right, correct, wrong what could we try next? how did you work it out? number sentence sign, operation, symbol, equation  MONEY  money coin, note penny, pence, pound (£) price, cost buy, bought, sell, sold spend, spent pay change dear, costs more, more/most expensive cheap, costs less, cheaper, less/least expensive how much…? how many…? total, amount, value, worth discount, profit, loss currency | ADDITION AND SUBTRACTION  add, addition, more, plus, increase sum, total, altogether score double, near double how many more to make…? subtract, subtraction, take (away), minus, decrease leave, how many are left/left over? difference between half, halve how many more/fewer is… than…? how much more/less is…? equals, sign, is the same as tens boundary, hundreds boundary units boundary, tenths boundary inverse  MULTIPLICATION AND DIVISION  lots of, groups of times, multiply, multiplication, multiplied by multiple of, product once, twice, three times… ten times… times as (big, long, wide… and so on) repeated addition array, row, column double, halve 33 Words new to Year 6 are in red YEAR 6 share, share equally one each, two each, three each… group in pairs, threes… tens equal groups of divide, division, divided by, divided into remainder factor, quotient, divisible by inverse | | **Handling data** | | count, tally, sort, vote survey, questionnaire data, database graph, block graph, line graph pictogram, represent group, set list, chart, bar chart, bar line chart tally chart table, frequency table Carroll diagram, Venn diagram label, title, axis, axes diagram most popular, most common least popular, least common mode, range, mean, average, median statistics, distribution maximum/minimum value classify, outcome PROBABILITY fair, unfair likely, unlikely, likelihood, equally likely certain, uncertain probable, possible, impossible chance, good chance, poor chance, no chance equal chance, even chance, fifty-fifty chance risk, doubt biased, random | | **General** | | same, identical, different missing number/s number facts, number pairs, number bonds greatest value, least value number line, number track number square, hundred square number cards, number grid abacus counters, cubes, blocks, rods die, dice, spinner dominoes pegs, peg board, pin board geo-strips same way, different way best way, another way in order, in a different order not all, every, each | | **Instructions** | | listen, join in, say, recite think, imagine, remember start from, start with, start at look at, point to, show me put, place arrange, rearrange change, change over adjusting, adjust split, separate carry on, continue, repeat what comes next? predict describe the pattern, describe the rule find, find all, find different investigate choose, decide collect use, make, build, construct, bisect tell me, define, describe, name, pick out, identify discuss, talk about explain explain your method/answer/reasoning give an example of… show how you… show your working justify make a statement read, write, record write in figures present, represent interpret trace, copy complete, finish, end fill in, shade, colour label, plot tick, cross draw, sketch draw a line between, join (up), ring, arrow cost, count, tally calculate, work out, solve, convert investigate, interrogate (data), question, prove answer check | | **Measures, shape and space** | | | | MEASURES (GENERAL) measure, measurement size compare unit, standard unit metric unit, imperial unit measuring scale, division guess, estimate enough, not enough too much, too little too many, too few nearly, roughly, about, close to about the same as, approximately just over, just under  LENGTH length, width, height, depth, breadth long, short, tall, high, low wide, narrow, deep, shallow, thick, thin longer, shorter, taller, higher… and so on longest, shortest, tallest, highest… and so on far, further, furthest, near, close distance apart/between, distance to… from… edge, perimeter, circumference kilometre (km), metre (m) centimetre (cm), millimetre (mm) mile, yard, feet, foot, inches, inch ruler, metre stick, tape measure, compasses  MASS  mass: big, bigger, small, smaller, balances weight: heavy/light, heavier/lighter, heaviest/lightest weigh, weighs tonne, kilogram (kg), half-kilogram, gram (g) pound (lb), ounce (oz) balance, scales  CAPACITY capacity full, half full, empty holds, contains litre (l), half-litre, centilitre (cl), millilitre (ml) pint, gallon container, measuring cylinder AREA area, covers, surface square centimetre (cm2), square metre (m2) square millimetre (mm2)  TIME  time days of the week: Monday, Tuesday… months of the year: January, February… seasons: spring, summer, autumn, winter day, week, fortnight, month year, leap year, century, millennium weekend, birthday, holiday calendar, date, date of birth morning, afternoon, evening, night am, pm, noon, midnight today, yesterday, tomorrow before, after, next, last now, soon, early, late, earliest, latest quick, quicker, quickest, quickly fast, faster, fastest, slow, slower, slowest, slowly old, older, oldest, new, newer, newest takes longer, takes less time how long ago? how long will it be to…? how long will it take to…? timetable, arrive, depart hour, minute, second o’clock, half past, quarter to, quarter past clock, watch, hands digital/analogue clock/watch, timer 24-hour clock, 12-hour clock Greenwich Mean Time, British Summer Time International Date Line how often? always, never, often, sometimes, usually  SHAPE AND SPACE  shape, pattern flat, line curved, straight round hollow, solid corner point, pointed face, side, edge, end sort make, build, construct, draw, sketch centre, radius, diameter circumference, concentric, arc net surface angle, right-angled congruent intersecting, intersection plane base, square-based vertex, vertices layer, diagram regular, irregular concave, convex open, closed tangram  3D SHAPES  3D, three-dimensional cube, cuboid pyramid sphere, hemi-sphere, spherical cone cylinder, cylindrical prism tetrahedron, polyhedron, octahedron, dodecahedron  2D SHAPES  2D, two-dimensional circle, circular, semi-circle triangle, triangular equilateral triangle, isosceles triangle, scalene triangle square, rhombus rectangle, rectangular, oblong pentagon, pentagonal hexagon, hexagonal heptagon octagon, octagonal polygon quadrilateral kite parallelogram, trapezium  PATTERNS AND SYMMETRY  size bigger, larger, smaller symmetrical line of symmetry, axis of symmetry line symmetry, reflective symmetry fold match mirror line, reflection, reflect pattern, repeating pattern, translation  POSITION, DIRECTION AND MOVEMENT  position over, under, underneath above, below, top, bottom, side on, in, outside, inside, around in front, behind, front, back before, after, beside, next to opposite, apart between, middle, edge, centre corner direction journey, route, map, plan left, right up, down, higher, lower forwards, backwards, sideways, across close, far, near along, through, to, from, towards, away from ascend, descend grid, row, column origin, coordinates clockwise, anti-clockwise compass point, north, south, east, west (N, S, E, W) north-east, north-west, south-east, south-west (NE, NW, SE, SW) horizontal, vertical, diagonal parallel, perpendicular x-axis, y-axis quadrant movement slide, roll whole turn, half turn, quarter turn, rotate, rotation angle, …is a greater/smaller angle than right angle, acute, obtuse, reflex degree straight line stretch, bend ruler, set square angle measurer, compasses, protractor | | | |
| **Progressive Curriculum Plan** |
| |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Number and place value/ Counting** | | | | | | | | | | | | | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | | **Year 6** | | | count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number | |  | |  | | count backwards through zero to include negative numbers | | interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero | | use negative numbers in context, and calculate intervals across zero | | | count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens | | count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward | | count from 0 in multiples of 4, 8, 50 and 100; | | count in multiples of 6, 7, 9, 25 and 1 000 | | count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 | |  | | | given a number, identify one more and one less | |  | | find 10 or 100 more or less than a given number | | find 1 000 more or less than a given number | |  | |  | | | **Comparing numbers** | | | | | | | | | | | | | use the language of: equal to, more than, less than (fewer), most, least | | compare and order numbers from 0 up to 100; use <, > and = signs | | compare and order numbers up to 1 000 | | order and compare numbers beyond 1 000 | | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit *(appears also in Reading and Writing Numbers)* | | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) | | | *compare numbers with the same number of decimal places up to two decimal places* *(copied from Fractions)* | | | **Identifying, representing and estimating numbers** | | | | | | | | | | | | | identify and represent numbers using objects and pictorial representations including the number line | | identify, represent and estimate numbers using different representations, including the number line | | identify, represent and estimate numbers using different representations | | identify, represent and estimate numbers using different representations | |  | |  | | | **Reading and writing numbers (including Roman numerals)** | | | | | | | | | | | | | read and write numbers from 1 to 20 in numerals and words. | | read and write numbers to at least 100 in numerals and in words | | read and write numbers up to 1 000 in numerals and in words | |  | | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit *(appears also in Comparing Numbers)* | | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit *(appears also in Understanding Place Value)* | | | *tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks*  *(copied from Measurement)* | | 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. | | read Roman numerals to 1 000 (M) and recognise years written in Roman numerals. | | | **Understanding place value** | | | | | | | | | | | | |  | | recognise the place value of each digit in a two-digit number (tens, ones) | | recognise the place value of each digit in a three-digit number (hundreds, tens, ones) | | recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) | | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit *(appears also in Reading and Writing Numbers)*  *recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (copied from Fractions)* | | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit *(appears also in Reading and Writing Numbers)* | | | *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 units, tenths and hundredths (copied from Fractions)* | | *identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1 000 where the answers are up to three decimal places (copied from Fractions)* | | | **Rounding** | | | | | | | | | | | | |  | |  | |  | | round any number to the nearest 10, 100 or 1 000 | | round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000 | | round any whole number to a required degree of accuracy | | |  | |  | |  | | *round decimals with one decimal place to the nearest whole number (copied from Fractions)* | | *round decimals with two decimal places to the nearest whole number and to one decimal place (copied from Fractions)* | | *solve problems which require answers to be rounded to specified degrees of accuracy (copied from Fractions)* | | | **Problem solving** | | | | | | | | | | | | |  | | use place value and number facts to solve problems | | solve number problems and practical problems involving these ideas. | | solve number and practical problems that involve all of the above and with increasingly large positive numbers | | solve number problems and practical problems that involve all of the above | | solve number and practical problems that involve all of the above | | | **Addition and subtraction** | | | | | | | | | | | | **Number bonds** | | | | | | | | | | | | **Year 1** | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | | **Year 6** | | | represent and use number bonds and related subtraction facts within 20 | recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 | |  | |  | |  | |  | | | **Addition and subtraction**  **Mental calculation** | | | | | | | | | | | | add and subtract one-digit and two-digit numbers to 20, including zero | add and subtract numbers using concrete objects, pictorial representations, and mentally, including:   * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers | | 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 mentally with increasingly large numbers | | perform mental calculations, including with mixed operations and large numbers | | | read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs *(appears also in Written Methods)* | show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot | |  | |  | |  | | use their knowledge of the order of operations to carry out calculations involving the four operations | | | **Written methods** | | | | | | | | | | | | read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs *(appears also in Mental Calculation)* |  | | add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction | | add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate | | add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) | |  | | | **Inverse operations, estimating and checking answers** | | | | | | | | | | | |  | recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. | | estimate the answer to a calculation and use inverse operations to check answers | | estimate and use inverse operations to check answers to a calculation | | use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy | | use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. | | | **Problem solving** | | | | | | | | | | | | solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as  7 = \* - 9 | solve problems with addition and subtraction:   * using concrete objects and pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods | | solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction | | solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why | | solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why | | solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why | | | Solve problems involving addition, subtraction, multiplication and division | |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Multiplication and division** | | | | | | | | | | | **Multiplication and division facts** | | | | | | | | | | | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | **Year 6** | | *count in multiples of twos, fives and tens (copied from Number and Place Value)* | *count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value)* | | *count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value)* | | *count in multiples of 6, 7, 9, 25 and 1 000 (copied from Number and Place Value)* | | *count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (copied from Number and Place Value)* | |  | |  | recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers | | recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables | | recall multiplication and division facts for multiplication tables up to 12 × 12 | |  | |  | | **Mental calculation** | | | | | | | | | | |  |  | | 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 *(appears also in Written Methods)* | | 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 | | multiply and divide numbers mentally drawing upon known facts | | perform mental calculations, including with mixed operations and large numbers | |  | show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot | |  | | recognise and use factor pairs and commutativity in mental calculations *(appears also in Properties of Numbers)* | | multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 | | *associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) (copied from Fractions)* | | **Written calculation** | | | | | | | | | | |  | calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs | | 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 *(appears also in Mental Methods)* | | multiply two-digit and three-digit numbers by a one-digit number using formal written layout | | 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 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 one-digit number using the formal written method of short division and interpret remainders appropriately for the context | | divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context 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 | |  |  | |  | |  | |  | | *use written division methods in cases where the answer has up to two decimal places (copied from Fractions)* | | **Properties of numbers: multiples, factors, primes, square and cube numbers** | | | | | | | | | | |  |  | |  | | recognise and use factor pairs and commutativity in mental calculations (repeated) | | identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. | | identify common factors, common multiples and prime numbers  *use common factors to simplify fractions; use common multiples to express fractions in the same denomination (copied from Fractions)* | | 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 | | |  |  | |  | |  | | recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) | | *calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3) and cubic metres (m3), and extending to other units such as mm3 and km3 (copied from Measures)* | | **Order of operations** | | | | | | | | | | |  |  | |  | |  | |  | | use their knowledge of the order of operations to carry out calculations involving the four operations | | **Inverse operations, estimating and checking answers** | | | | | | | | | | |  |  | | *estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction)* | | *estimate and use inverse operations to check answers to a calculation (copied from Addition and Subtraction)* | |  | | use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy | | **Problem solving** | | | | | | | | | | | solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher | solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts | | 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 | | 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 | | 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 | | 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 | | *solve problems involving similar shapes where the scale factor is known or can be found*  *(copied from Ratio and Proportion)* | | **Fractions, decimals and percentages** | | | | | | | | | | | **Counting in fractional steps** | | | | | | | | | | | **Year 1** | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | | **Year 6** | |  | *Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)* | | count up and down in tenths | | count up and down in hundredths | |  | |  | | **Recognising fractions** | | | | | | | | | | | recognise, find and name a half as one of two equal parts of an object, shape or quantity | recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity | | recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators | | recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten | | recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents *(appears also in Equivalence)* | |  | | 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 name a quarter as one of four equal parts of an object, shape or quantity | recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators | | | **Comparing fractions** | | | | | | | | | | |  |  | | compare and order unit fractions, and fractions with the same denominators | |  | | compare and order fractions whose denominators are all multiples of the same number | | compare and order fractions, including fractions >1 | | **Comparing decimals** | | | | | | | | | | |  |  | |  | | compare numbers with the same number of decimal places up to two decimal places | | read, write, order and compare numbers with up to three decimal places | | identify the value of each digit in numbers given to three decimal places | | **Rounding including decimals** | | | | | | | | | | |  |  | |  | | round decimals with one decimal place to the nearest whole number | | round decimals with two decimal places to the nearest whole number and to one decimal place | | solve problems which require answers to be rounded to specified degrees of accuracy | | **Equivalence** | | | | | | | | | | |  | write simple fractions e.g. 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2. | | recognise and show, using diagrams, equivalent fractions with small denominators | | recognise and show, using diagrams, families of common equivalent fractions | | identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths | | use common factors to simplify fractions; use common multiples to express fractions in the same denomination | |  |  | |  | | recognise and write decimal equivalents of any number of tenths or hundredths | | read and write decimal numbers as fractions (e.g. 0.71 = 71/100) | | associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) | | recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents | | |  |  | |  | | recognise and write decimal equivalents to 1/4; 1/2; 3/4 | | recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator 100 as a decimal fraction | | recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. | | **Addition and subtraction of fractions** | | | | | | | | | | |  |  | | add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7) | | add and subtract fractions with the same denominator | | add and subtract fractions with the same denominator and multiples of the same number | | add and subtract fractions with different denominators and mixed numbers, using the  concept of equivalent fractions | | recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 11/5) | | | **Multiplication and division of fractions** | | | | | | | | | | |  |  | |  | |  | | multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams | | multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. 1/4 × 1/2 = 1/8) | | multiply one-digit numbers with up to two decimal places by whole numbers | |  |  | |  | |  | |  | | divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6) | | **Multiplication and division of decimals** | | | | | | | | | | |  |  | |  | |  | |  | | multiply one-digit numbers with up to two decimal places by whole numbers | |  |  | |  | | 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 | |  | | multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places | |  |  | |  | |  | |  | | identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places | |  |  | |  | |  | |  | | associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) | |  |  | |  | |  | |  | | use written division methods in cases where the answer has up to two decimal places | | **Problem solving** | | | | | | | | | | |  |  | | solve problems that involve all of the above | | 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 | | solve problems involving numbers up to three decimal places | |  | |  |  | |  | | solve simple measure and money problems involving fractions and decimals to two decimal places. | | solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25. | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Ratio and proportion** | | | | | | |  |  |  |  |  | **Year 6** | |  |  |  |  |  | solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts | |  |  |  |  |  | solve problems involving the calculation of percentages [for example 15% of 360] and the use of percentages for comparison | |  |  |  |  |  | solve problems involving similar shapes where the scale factor is known or can be found | |  |  |  |  |  | solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Algebra** | | | | | | | | **Equations** | | | | | | | | **Year 1** | **Year 2** | **Year 3** | | **Year 4** | **Year 5** | **Year 6** | | *solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = \* - 9 (copied from Addition and Subtraction)* | *recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. (copied from Addition and Subtraction)* | *solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. (copied from Addition and Subtraction)* | |  | *use the properties of rectangles to deduce related facts and find missing lengths and angles*  *(copied from Geometry: Properties of Shapes)* | express missing number problems algebraically | | *solve problems, including missing number problems, involving multiplication and division, including integer scaling*  *(copied from Multiplication and Division)* | | |  | *recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (copied from Addition and Subtraction)* |  | |  |  | find pairs of numbers that satisfy number sentences involving two unknowns | | *represent and use number bonds and related subtraction facts within 20 (copied from Addition and Subtraction)* |  |  | |  |  | enumerate all possibilities of combinations of two variables | | **Formulae** | | | | | | | |  |  |  | *Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit. (Copied from NSG measurement)* | |  | use simple formulae | | *recognise when it is possible to use formulae**for area and volume of shapes (copied from Measurement)* | | **Sequences** | | | | | | | | *sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening*  *(copied from Measurement)* | *compare and sequence intervals of time (copied from Measurement)* |  |  | |  | generate and describe linear number sequences | | *order and arrange combinations of mathematical objects in patterns (copied from Geometry: position and direction)* |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Measurement** | | | | | | | **Comparing and estimating** | | | | | | | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** | | compare, describe and solve practical problems for:   * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later] | compare and order lengths, mass, volume/capacity and record the results using >, < and = |  | estimate, compare and calculate different measures, including money in pounds and pence  *(also included in Measuring)* | calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes (also included in measuring) | calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3) and cubic metres (m3), and extending to other units such as mm3 and km3. | | estimate volume (e.g. using 1 cm3 blocks to build cubes and cuboids) and capacity (e.g. using water) | | sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] | compare and sequence intervals of time | compare durations of events, for example to calculate the time taken by particular events or tasks |  |  |  | |  |  | estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o’clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight *(appears also in Telling the Time)* |  |  |  | | **Measuring and calculating** | | | | | | | measure and begin to record the following:   * lengths and heights * mass/weight * capacity and volume * time (hours, minutes, seconds) | choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels | measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) | estimate, compare and calculate different measures, including money in pounds and pence  *(appears also in Comparing)* | use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling. | solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate  *(appears also in Converting)* | |  |  | measure the perimeter of simple 2-D shapes | measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres | measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres | recognise that shapes with the same areas can have different perimeters and vice versa | | recognise and know the value of different denominations of coins and notes | recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value | add and subtract amounts of money to give change, using both £ and p in practical contexts |  |  |  | | find different combinations of coins that equal the same amounts of money | | solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change | |  |  |  | find the area of rectilinear shapes by counting squares | calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes  *recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) (copied from Multiplication and Division)* | 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 [e.g. mm3 and km3]. | | recognise when it is possible to use formulae for area and volume of shapes | | **Telling the time** | | | | | | | tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. | tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. | tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks | read, write and convert time between analogue and digital 12 and 24-hour clocks *(appears also in Converting)* |  |  | | recognise and use language relating to dates, including days of the week, weeks, months and years | know the number of minutes in an hour and the number of hours in a day. *(appears also in Converting)* | estimate and read  time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o’clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight *(appears also in Comparing and Estimating)* |  |  |  | |  |  |  | solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days *(appears also in Converting)* | solve problems involving converting between units of time |  | | **Converting** | | | | | | |  | know the number of minutes in an hour and the number of hours in a day.  *(appears also in Telling the Time)* | know the number of seconds in a minute and the number of days in each month, year and leap year | convert between different units of measure (e.g. kilometre to metre; hour to minute) | convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) | use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places | |  |  |  | read, write and convert time between analogue and digital 12 and 24-hour clocks *(appears also in Converting)* | solve problems involving converting between units of time | solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate  *(appears also in Measuring and Calculating)* | |  |  |  | solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days *(appears also in Telling the Time)* | understand and use equivalences between metric units and common imperial units such as inches, pounds and pints | convert between miles and kilometres |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Geometry: Properties of shape** | | | | | | | **Identifying shapes and their properties** | | | | | | | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** | | Recognise and name common 2-D and 3-D shapes, including:   * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres]. | identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line |  | identify lines of symmetry in 2-D shapes presented in different orientations | identify 3-D shapes, including cubes and other cuboids, from 2-D representations | recognise, describe and build simple 3-D shapes, including making nets *(appears also in Drawing and Constructing)* | | identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces | illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius | | identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] | | **Drawing and constructing** | | | | | | |  |  | draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them | complete a simple symmetric figure with respect to a specific line of symmetry | draw given angles, and measure them in degrees (o) | draw 2-D shapes using given dimensions and angles | | recognise, describe and build simple 3-D shapes, including making nets *(appears also in Identifying Shapes and Their Properties)* | | **Comparing and classifying** | | | | | | |  | compare and sort common 2-D and 3-D shapes and everyday objects |  | compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes | use the properties of rectangles to deduce related facts and find missing lengths and angles | compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons | | distinguish between regular and irregular polygons based on reasoning about equal sides and angles | | **Angles** | | | | | | |  |  | recognise angles as a property of shape or a description of a turn |  | know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles |  | |  |  | 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 acute and obtuse angles and compare and order angles up to two right angles by size | identify:   * angles at a point and one whole turn (total 360o) * angles at a point on a straight line and ½ a turn (total 180o)   other multiples of 90o | recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles | |  |  | identify horizontal and vertical lines and pairs of perpendicular and parallel lines |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Geometry: Position and direction** | | | | | | | **Position, direction and movement** | | | | | | | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** | | describe position, direction and movement, including half, quarter and three-quarter turns. | use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) |  | describe positions on a  2-D grid as coordinates in the first quadrant | 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 | describe positions on the full coordinate grid (all four quadrants) | | describe movements between positions as translations of a given unit to the left/right and up/down | draw and translate simple shapes on the coordinate plane, and reflect them in the axes. | |  |  |  | plot specified points and draw sides to complete a given polygon |  |  | | **Pattern** | | | | | | |  | order and arrange combinations of mathematical objects in patterns and sequences |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Statistics** | | | | | | | **Interpreting, constructing and presenting data** | | | | | | | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** | |  | interpret and construct simple pictograms, tally charts, block diagrams and simple tables | interpret and present data using bar charts, pictograms and tables | interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs | complete, read and interpret information in tables, including timetables | interpret and construct pie charts and line graphs and use these to solve problems | |  | ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity |  |  |  |  | |  | ask and answer questions about totalling and comparing categorical data |  |  |  |  | | **Solving problems** | | | | | | |  |  | solve one-step and two-step questions [e.g. ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables. | solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. | solve comparison, sum and difference problems using information presented in a line graph | calculate and interpret the mean as an average | |
| **Maths organisation** |
| |  |  |  |  | | --- | --- | --- | --- | | **Maths specific vocabulary**  Rich maths vocabulary is modelled and discussed by class teachers and pupils in lessons. The expectations are high for children to consistently use accurate, concise and age-appropriate mathematical vocabulary during discussions and written reasoning. By the time Year 6 pupils undertake SATs, children should have a clear understanding of KS1 and KS2 maths vocabulary to eliminate potential barriers to understanding questions. Teachers use regular questioning and activities around maths vocabulary to address misconceptions and dual meanings. The vocabulary for the current topic is displayed in the classroom, alongside examples of children’s work, images, numbers and symbols for the children to refer to and to support their learning within a tiered target board. The focus on ‘maths talk’ is evident with talk partners, talk trios or whole-class discussions in response to frequent effective questioning throughout all maths lessons. By giving the children these opportunities to expand on their thinking and share their reasoning, they will develop their conceptual understanding and make connections between number facts. Children are encouraged to use subject-specific vocabulary within written reasoning responses, also. | **Planning**  White Roseis a core driver of our teaching and learning. This resource is complemented by fluency, problem-solving and reasoning tasks adapted from a variety of other sources, such as NRich, NCETM. The planning ensures that all learners are challenged at an appropriate level and support is allocated accordingly – This is informed by anchor tasks within lessons, elicitation tasks and AFL. Depending on class structure, as mixed-age classes dictate, some year groups may receive separate lesson inputs by the Teacher and/or HLTA and some will share lesson inputs. | **Lesson structure and class management**  The focus on ‘maths talk’ is evident with talk partners, talk trios or whole-class discussions in response to frequent questioning throughout all maths lessons. Teachers will challenge understanding through regular, investigative questioning throughout, for example: How do you know? Can you prove it? Are you sure? What’s the value? What’s the same/different about? Can you explain that? What does your partner think? Can you show me another way?  In KS2, units begin and end with an elicitation task to inform planning.  Lessons typically begin with independent fluency tasks to gauge understanding. The main body of the lesson will include concrete, pictorial and abstract forms of mathematical learning and opportunities to develop fluency, problem-solving and reasoning as well as a focus on addressing potential misconceptions throughout. | **Working walls and resources**  Each class has a mathematics working wall to support learning in mathematics. It is a board that provides models for the children and challenges their understanding through questioning. Children know where maths resources are kept and are encouraged to independently use them to assist their own learning. A range of maths scaffolding resources are used by individuals who require them. | | **AFL, Self-editing & feedback**  Children in KS2 will respond to marking using a blue pen usually linked to their ‘Can I’ statement or CAPED (**C**heck, **A**nother way, **P**rove it, **E**xplain, **D**raw) this provides teachers with further evidence of a child’s understanding and gives insight into a child’s confidence with a particular intention.  Children will respond/correct errors with a ‘purple polish’ pen post-marking. This can be done individually, with an adult or with a peer.  KS2 pupils may mark work together to provide opportunities to discuss understanding and instant feedback to assist in gauging understanding. | | **SEND, pre-teaching and post-teaching**  Some individuals are specifically supported by additional adults, resources or differentiated activities in maths. Learners who have not kept up with the rest of the class during the lesson also have an opportunity for pre-teaching/ post-teaching sessions with their teacher or TA later that day or the following morning. Intervention for pupils working significantly below age-related expectation is detailed in Class Provision Maps, such as number-focussed group work. | **Calculation policy**  The calculation policy (see separate document) is a guide for teaching the progression of calculation strategies throughout primary education. Whilst abstract strategies are predominantly used in UKS2, all children are encouraged to use concrete and pictorial representations to secure their understanding. | |
| **In order to assess impact - a guide** |
| Children will develop ‘maths capital’ - confidence, understanding and enjoyment in mathematics along with a comprehensive set of problem-solving skills and strategies to take with them to the next stage of their education. They will be engaged, resilient, challenged and able to quickly recall facts and techniques in order to maximise their depth of learning.  They will use mathematics effectively as a tool in a wide variety of situations and will be able to present a justification or argument relating to a problem using mathematical language. They will understand the relevance of what they are learning in relation to real world concepts and develop a sense of curiosity about the subject.  Our children will develop a confident recall of multiplication tables to 12x12 by the end of year 4 and our attainment data aspirations are to exceed the national average. |
| **Assessment - a guide** |
| |  |  |  | | --- | --- | --- | | **KS1**  Statutory tests for Year 2 (SATs)  SIMs – in-house data and progress tracking  Teacher assessment - observations of maths behaviour and discussion  Maths books  TTRS  Numbots | **Years 3-5**  Statutory Multiplication Check for Year 4  Non-statutory evidence gathering grids for moderation (Babcock)  SIMs – in-house data and progress tracking  Teacher assessment - observations of maths behaviour and discussion  Maths books  Elicitation tasks/ Pre unit assessments- White Rose  Post unit assessments- White rose  TTRS  Numbots | **Year 6**  Statutory tests for Year 6 (SATs)  SIMs – in-house data and progress tracking  Teacher assessment - observations of maths behaviour and discussion  Maths books  Elicitation tasks/ Pre unit assessments- White Rose  Post unit assessments- White rose  TTRS | |