| Year Group | Pre - Year 1 (page 1 of 2) | | |
|---|---|---|---|
| Point | 1 | 3 | 5 |
| Grade | Emerging | Developing | Secure |
| Assessment Milestone | **Autumn** | **Spring** | **Summer** |
| Number and Place Value | • Knows that numbers identify how many objects are in a set.<br>• Count from 0-5 forwards and backwards within a play situation.<br>• Recognises numbers of personal significance.<br>• Recognises numerals 0 to 5 but recites numbers in order to 10.<br>• Counts up to five objects by saying one number name for each item.<br>• Counts an irregular arrangement of up to ten objects. | • Count from 0-10 forwards and backwards beginning with 0 or 1 from any given number.<br>• Recognises numerals 0 to 10 and begins to order them.<br>• Estimates how many objects they can see and checks by counting them.<br>• Uses the language of 'more' and 'fewer' to compare two sets of objects.<br>• Says the number that is one more than a given number and begin to say one less to 10. | • Counts reliably with numbers from one to 20<br>• Can place 0-20 in order and say which number is one more or one less than a given number.<br>• Count to and cross 20, forwards and backwards beginning with 0 or 1 from any given number.<br>• Write numerals to 10 with some reversal. |
| Addition and Subtraction | • Sings action songs and rhyme related to addition and subtraction. | • Finds the total number of items in two groups by counting all of them.<br>• Subtracts practically by removing objects (e.g. taking away).<br>• Records, using marks that they can interpret and explain.<br>• In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting. | • Using quantities and objects add and subtract two single-digit numbers and count on or back to find the answer.<br>• Beginning to have an awareness of the addition and subtraction sign<br>• In practical situations, begin to know their addition number facts to 10.<br>• In practical activities and discussion, use the vocabulary involved in adding and subtracting. |
| Multiplication, Division and Fractions | | | • In practical situations they solve problems, including doubling, halving and sharing. |

**\*Key**
P= Pre-level

| Year Group | Pre-Year 1 (page 2 of 2) | | |
|---|---|---|---|
| Point | 1 | 3 | 5 |
| Grade | Emerging | Developing | Secure |
| Assessment Milestone | Autumn | Spring | Summer |
| Measurement | • Shows interest in practical activities related to length, capacity and weight | • Uses everyday language related to time<br>• Orders two or three items by length or height.<br>• Uses familiar objects and common shapes to create and recreate patterns and build models<br>• Orders two items by weight or capacity. | • Uses everyday language to talk about size, weight, capacity, time and money to compare quantities and objects and to solve problems |
| Properties of Shapes | • Shows an interest in shape and space by playing with shapes or making arrangements with objects.<br>• Shows awareness of similarities of shapes in the environment.<br>• Shows interest in shape by sustained construction activity or by talking about shapes or arrangements.<br>• Shows interest in shapes in the environment.<br>• Uses shapes appropriately for tasks.<br>• Beginning to talk about the shapes of everyday objects, e.g. 'round' and 'tall'. | •<br>• Beginning to use mathematical names for 'solid' 3D shapes (including cube, cuboid, sphere, cylinder, cone, pyramid) and 'flat' 2D shapes (including circle, triangle, square, oblong, oval) and mathematical terms to describe shapes.<br>• Selects a particular named shape. | • Explores characteristics of everyday objects and shapes and use mathematical language to describe them.<br>• Recognises, creates and describes pattern. |
| Position and Direction | • Uses positional language, | • Describes their relative position such as 'behind' or 'next to'. | • Uses everyday language to talk about position and distance. |

**\*Key**
P= Pre-level

| Year Group | Year 1 (page 1 of 2) | | |
|---|---|---|---|
| **Point** | 7 | 9 | 11 |
| **Grade** | Emerging | Developing | Secure |
| **Assessment Milestone** | **Autumn** | **Spring** | **Summer** |
| Number and Place Value | • count to and across 50, forwards and backwards, beginning with 0 or 1, or from any given number.<br>• write numbers to 20 in numerals;<br>• order numbers up to 50 and say one more and one less<br>• using quantities or objects, count in multiples of 2<br>• identify and represent numbers using objects and pictorial representations<br>• use language one more and one less | • count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number<br>• count, read and write numbers to 100 in numerals; count in multiples of twos and tens<br>• given a 2 digit number, identify one more and one less<br>• identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least<br>• read and write numbers from 1 to 20 in numerals<br>• begin to recognise odd and even numbers | • count beyond 100, forwards and backwards, beginning with 0 or 1, or from any given number<br>• able to say one more or one less than a number beyond 100<br>• count in multiples of 2s, 5s and 10s<br>• given a number, say one more and one less<br>• write numbers 1-20 in numerals and words |
| Addition and Subtraction | • start to read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs within 10<br>• know number bonds to 10<br>• solve one-step problems that involve addition and subtraction using concrete objects<br>• use the vocabulary associated with + and - | • read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs within 20 [e.g. 7+6=13, 5-3=2, and 13 = 7+6, 2=5-3]<br>• know bonds of all numbers to 10<br>• represent and use number bonds<br>• add and subtract one-digit and two-digit numbers to 20, including zero<br>• solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as  7 = [ ] – 9.<br>• understand the vocabulary associated with problem solving | • represent and use number bonds and related subtraction facts within 20<br>• begin to know bonds of all numbers to 20 |
| Multiplication and Division | • know doubles up to double 5<br>• know halves up to 10<br>• solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, with the support of the teacher.<br>• recognise patterns of numbers in 2x table | • know corresponding halves<br>• know doubles to double 10<br>• solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations with the support of the teacher.<br>• recognise patterns of numbers in X2, X10<br>• recognise odd and even numbers | • group objects into 2,5,or 10 to aid counting<br>• 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.<br>• recognise patterns of numbers in x2, x10, x5<br>• |
| Fractions | • recognise, find and name a half as one of two equal parts of a shape<br>• find half of a quantity less than 10 | • recognise, find and name a half as one of two equal parts of an object, shape or quantity<br>• recognise, find and name a quarter as one of four equal parts of an object, shape. | • recognise, find and name a quarter as one of four equal parts of an object, shape or a quantity |

| Year Group | Year 1 (page 2 of 2) | | |
|---|---|---|---|
| Point | 7 | 9 | 11 |
| Grade | Emerging | Developing | Secure |
| Assessment Milestone | **Autumn** | **Spring** | **Summer** |
| Measurement | • recognise terms mass/weight and volume/capacity<br>• compare, describe and solve practical problems for:<br>• lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]<br>• mass/weight [for example, heavy/light, heavier than, lighter than]<br>• capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]<br>• measure and begin to record the following using non-standard measures<br>• lengths and heights<br>• mass/weight<br>• capacity and volume<br>• recognise different denominations of coins and notes<br>• sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]<br>• recognise and use language relating to including days of the week and be able to sequence these<br>• tell the time to the hour and draw the hands on a clock face to show these times. | • Pupils:<br>• measure and begin to record the following using standard units of measurement and equipment e.g. rulers<br>• lengths and heights<br>• mass/weight<br>• capacity and volume<br>• know the value of different denominations of coins and notes<br>• sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]<br>• recognise and use language relating to dates, including days of the week, weeks, months and years<br>• tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. | • compare, describe and solve practical problems for time for example, quicker, slower, earlier and later<br>• measure and begin to record time (hours, minutes, seconds)<br>• know the names of the seasons<br>• know the names and sequence of the months |
| Properties of Shapes | • recognise and name common 2-D and 3-D shapes, including:<br>• 2-D shapes [for example, rectangles (including squares), circles and triangles | • recognise and name common 2-D and 3-D shapes, including:<br>• 2-D shapes [for example, rectangles (including squares), circles and triangles]<br>• 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. | • recognise and name common 2-D shapes in different orientations and sizes.<br>• recognise and name cuboids and pyramids. |
| Position and Direction | • know the vocabulary 'left' and 'right.' | • describe position, direction and movement, using the terms 'whole' and 'half' turns. | • describe position, direction and movement using the terms 'quarter' and 'three-quarter' turns. |
| Statistics | | | • Refer to Year 2 Statistics Milestones |

| Year Group | Year 2 (page 1 of 2) | | |
|---|---|---|---|
| Point | 13 | 15 | 17 |
| Grade | Emerging | Developing | Secure |
| Assessment Milestone | Autumn | Spring | Summer |
| Number and Place Value | • count in steps of 2 and 5 from 0, and g0 backwards. Use term 'multiple'<br>• identify and represent numbers using different representations<br>• estimate number of objects up to 20<br>• compare and order numbers of objects up to 20<br>• compare and order numbers up to 100<br>• use number facts to solve problems<br>• read and write numbers up to 50 in words and numerals | • count in steps of ten from any number, forward and backward<br>• recognise the place value of each digit in a two-digit number (tens, ones)<br>• identify, represent and estimate numbers using different representations, including the number line<br>• partition numbers into tens and units<br>• compare and order numbers from 0 up to 100; use <, > and = signs<br>• read and write numbers to at least 100 in numerals and in words<br>• identify odd and even numbers<br>• use place value and number facts to solve problems. | • count in steps of 3 from 0<br>• understand the importance of 0 as a place holder in 2 and 3 digit numbers<br>• partition numbers in different ways e.g. 23 as 20+3 or 10+13<br>• estimate numbers on an empty number line<br>• round numbers to the nearest 10<br>• compare and order numbers beyond 100<br>• solve problems and explain reasoning<br>• read and write numbers beyond 100 in numerals and words |
| Addition and Subtraction | • solve problems with addition and subtraction:<br>• using concrete objects and pictorial representations, including those involving numbers, quantities and measures<br>• understand and use 'sum' and 'difference'<br>• add and subtract numbers using concrete objects<br>• show that addition of two numbers can be done in any order (commutative<br>• recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. | • solve problems with addition and subtraction:<br>•   using concrete objects and pictorial representations, including those involving numbers, quantities and measures<br>• recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100<br>• add and subtract numbers using concrete objects, pictorial representations, and mentally, including:<br>• a two-digit number and ones<br>• a two-digit number and tens<br>• two two-digit numbers<br>• adding three one-digit numbers<br>• show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot<br>• recognise and use the inverse relationship between addition and subtraction and solve missing number problems. | • solve problems with addition and subtraction:<br>• using concrete objects and pictorial representations<br>• including those involving numbers, quantities and measures<br>• applying their increasing knowledge of mental and written methods<br>• recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100<br>• begin to solve + and – in columns without crossing boundaries<br>• recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. |
| Multiplication and Division | • learn X facts for 2's, 5's, 10's<br>• derive double multiples of 10 and know inverse<br>• read and interpret  ÷ = signs<br>• solve 1 step problems involving multiplication and division, using materials, arrays, repeated addition, , including problems in contexts. | • recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers<br>• know doubles of multiples of 5 and 10 <double 50 and know inverse<br>• calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs<br>• show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot<br>• solve 1 step problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. | • know doubles of multiples of 5 and 10 <double 100 and know inverse<br>• recall X facts for X2,5,10 and their inverse<br>• solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.<br>• relate fractions and measures e.g. 40÷2=20, and 20 is half of 40 |

| Year Group | Year 2 (page 2 of 2) | | |
|---|---|---|---|
| **Point** | 13 | 15 | 17 |
| **Grade** | Emerging | Developing | Secure |
| **Assessment Milestone** | **Autumn** | **Spring** | **Summer** |
| Fractions | • recognise, , name and fractions 1/3 and ¼ of a shape, set of objects or quantity<br>• count in halves from 0 to 10 | • recognise, find, name and write fractions 1/3, ¼ of a , shape, set of objects or quantity<br>• write simple fractions for example, ½ of 6 = 3 and recognise the equivalence of 2/4 and ½.<br>• count in halves up to 10 from any number | • recognise, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects or quantity<br>• count in quarters up to 10 from any number<br>• |
| Measurement | • choose and use appropriate standard units to 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<br>• recognise and use symbols for pounds (£) and pence (p)<br>• solve simple problems in a practical context involving addition and subtraction of money of the same unit, using appropriate amounts<br>• tell and write the time to quarter past the hour and draw the hands on a clock face to show these times | • choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, and measuring vessels<br>• compare and order lengths, mass, volume/capacity and record the results using >, < and =<br>• combine amounts of money to make a particular value<br>• solve simple problems in a practical context involving addition and subtraction of money of the same unit using appropriate amounts<br>• tell and write the time to quarter to the hour and draw the hands on a clock face to show these times<br>• know the number of minutes in an hour and the number of hours in a day. | • 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<br>• use standard abbreviations and record the results using >, < and =<br>• find different combinations of coins that equal the same amounts of money<br>• solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change with appropriate amounts<br>• compare and sequence intervals of time<br>• tell and write the time to five minutes and draw the hands on a clock face to show these times |
| Properties of Shapes | • recognise and name common 2-D shapes in different orientations and sizes for example hexagons and pentagons.<br>• recognise and name 3-D shapes for example cylinder | • identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces<br>• identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid] | • identify line symmetry in a vertical line when exploring 2-D shapes.<br>• compare and sort common 2-D and 3-D shapes and everyday objects.<br>• |
| Position and Direction | • order and arrange combinations of mathematical objects in patterns and sequences | • 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 | • explore, describe and explain patterns.<br>• use the terms clockwise and anti-clockwise to describe position, direction and movement. |
| Statistics | • interpret and construct simple pictograms, tally charts and block diagrams. | • interpret and construct simple tables<br>• 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 |

| Year Group | Year 3 (page 1 of 2) | | |
|---|---|---|---|
| Point | 19 | 21 | 23 |
| Grade | Emerging | Developing | Secure |
| Assessment Milestone | Autumn | Spring | Summer |
| Number and Place Value | • count from 0 in multiples of 50 and 100; find 10 or 100 more or less than a given number<br>• recognise the place value of each digit in a three-digit number (hundreds, tens, ones)<br>• round numbers to the nearest 100<br>• understand importance of 0 as a place holder in numbers up to 1000<br>• identify and represent numbers using different representations<br>• read and write numbers up to 1000 in numerals<br>• partition 3 digit numbers into hundreds, tens and units | • count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number<br>• compare and order numbers up to 1000, using >, < and =<br>• identify, represent and estimate numbers using different representations<br>• read and write numbers up to 1000 in numerals and in words<br>• round numbers to nearest 10 or 100<br>• partition numbers in different ways eg 342 becomes 300 +20 +22<br>• solve number problems and practical problems involving these ideas.<br>• read Roman numerals up to 12 | • use multiples of 2, 3, 4, 5, 8, 10, 50 and 100<br>• compare and order numbers beyond 1000, using >, < and =<br>• identify, represent and estimate numbers using different representations including measures<br>• read and write numbers beyond 1000 in numerals and in words<br>• use partitioning to solve problems<br>• solve number problems and practical problems involving these ideas and explain reasoning<br>• read Roman numerals up to 12 |
| Addition and Subtraction | • add or subtract two 2-digit numbers where answers may exceed 100<br>• use columnar method for + and – with 2-digit numbers, crossing tens boundaries<br>• begin to use estimates e.g. rounding<br>• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. With numbers as appropriate | • add and subtract numbers mentally, including:<br>• a three-digit number and ones<br>• a three-digit number and tens<br>• a three-digit number and hundreds<br>• add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction with 2 or more 2-digit numbers<br>• estimate the answer to a calculation<br>• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. With numbers as appropriate | • add and subtract numbers mentally, including:<br>• 4 digit numbers and ones<br>• 4 digit numbers and tens<br>• With different numbers of digits e.g. 3-digit +/- 2-digit<br>• add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction with answers exceeding 999<br>• estimate the answer to a calculation and use inverse operations to check answers |
| Multiplication and Division | • learn facts for 3 times tables and inverse<br>• learn multiplication facts up to 12x3<br>• derive facts for x4, x8 by doubling<br>• solve mathematical statements for multiplication and division using known tables<br>• solve missing number problems involving multiplication and division | • recall and use multiplication and division facts for the 3, 4 and 8 times tables<br>• 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 using partitioning<br>• solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems | • know facts for 2,3,4,5,8,10 times tables up to x12<br>• 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, partitioning and progressing to formal written methods<br>• 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. |

| Year Group | Year 3 (page 2 of 2) | | |
|---|---|---|---|
| **Point** | 19 | 21 | 23 |
| **Grade** | Emerging | Developing | Secure |
| **Assessment Milestone** | Autumn | Spring | Summer |
| Fractions | • place fraction on a number line<br>• count up in tenths<br>• recognise, find and write fractions of a discrete set of objects: unit fractions with small denominators<br>• add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] with appropriate fractions<br>• solve problems that involve all of the above, with appropriate fractions | • count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts<br>• recognise, find and write fractions of a discrete set of objects: non-unit fractions with small denominators<br>• recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators<br>• recognise and show, using diagrams, equivalent fractions with small denominators<br>• add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] with appropriate fractions<br>• compare and order unit fractions, and fractions with the same denominators<br>• solve problems that involve all of the above, with appropriate fractions | • count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10<br>• add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] with appropriate fractions<br>• compare and order unit fractions, and fractions with the same denominators using <,> =<br>• solve problems that involve all of the above, with appropriate fractions, including measures |
| Measurement | • measure, compare: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)<br>• add and subtract amounts of money to give change, using both £ and p in practical contexts using appropriate amounts<br>• tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks<br>• estimate and read time with increasing accuracy to the nearest minute<br>• know the number of seconds in a minute | • add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)<br>• measure the perimeter of simple 2-D shapes<br>• add and subtract amounts of money to give change, using both £ and p in practical contexts using appropriate amounts<br>• tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour clock<br>• estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, morning, afternoon, noon and midnight<br>• compare durations of events [for example to calculate the time taken by particular events or tasks] | • measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)<br>• add and subtract amounts of money to give change, using both £ and p in practical contexts<br>• tell and write the time from an analogue clock, including using 12-hour and 24-hour clocks<br>• estimate and read time with increasing accuracy to the nearest minute using vocabulary of am/pm<br>• know the number of days in each month, year and leap year<br>• |
| Properties of Shapes | • recognise and name prisms<br>• draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them<br>• identify right angles (as a quarter turn) | • recognise angles as a property of shape or a description of a turn.<br>• identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn.<br>• identify horizontal and vertical lines. | • identify vertical and horizontal lines of symmetry in common 2-D shapes.<br>• identify whether angles are greater than or less than a right angle.<br>• identify pairs of perpendicular and parallel lines. |
| Position and Direction | • know and use the terms 'North,' 'South,' 'East' and 'West.' | • know and use the terms 'North,' 'North-East,' 'East,' 'South-East,' 'South,' 'South-West,' 'West' and 'North-West.' | • know and use all terms relating to compass directions<br>• be able to move between compass directions in half and quarter turns |
| Statistics | • understand and use simple scales (e.g. divisions 2, 5 and 10) | • interpret and present data using bar charts, pictograms and tables<br>• solve one-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. | • solve two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. |

| Year Group | Year 4 (page 1 of 2) | | |
|---|---|---|---|
| Point | 25 | 27 | 29 |
| Grade | Emerging | Developing | Secure |
| Assessment Milestone | Autumn | Spring | Summer |
| Number and Place Value | • count in multiples of 25 and 1000<br>• find 1000 more or less than a given number<br>• recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)<br>• identify, represent and estimate numbers using different representations<br>• round any number to the nearest 1000<br>• solve number and practical problems that involve all of the above<br>• read Roman numerals to 50 (I to L) | • count in multiples of 6, 9, 25 and 1000<br>• find 1000 more or less than a given number<br>• count backwards through zero to include negative numbers<br>• recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)<br>• order and compare numbers beyond 1000<br>• identify, represent and estimate numbers using different representations<br>• round any number to the nearest 10, 100 or 1000<br>• solve number and practical problems that involve all of the above and with increasingly large positive numbers<br>• 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. | • count in multiples of 7<br>• read, write and order numbers to 10 000<br>• count forwards through zero from a negative number<br>• order and compare numbers beyond 1000 and negative numbers using >, < and =<br>• identify, represent and estimate numbers using different representations<br>• solve number and practical problems that involve all of the above and with increasingly large positive numbers and begin to solve problems with negative numbers in context e.g. temperature |
| Addition and Subtraction | • add and subtract numbers mentally, including:<br>• 4-digit numbers and hundreds<br>• 4-digit numbers and thousands<br>• estimate and use inverse operations to check answers to a calculation with appropriate numbers<br>• solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why; with appropriate numbers | • add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate<br>• estimate and use inverse operations to check answers to a calculation with appropriate numbers<br>• solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why; with appropriate numbers | • add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate, crossing the thousands barriers<br>• with different numbers of digits e.g. 4-digit =?-3-digit<br>• estimate and use inverse operations to check answers to a calculation with appropriate numbers<br>• solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why; with appropriate numbers<br>• begin to ensure solutions make sense in the context of a problem |
| Multiplication and Division | • know multiplication and division facts for 6 and 9 times tables<br>• introduce the term 'factor'<br>• use place value, known and derived facts to multiply and divide mentally, including:<br>• multiplying by 0 and 1<br>• dividing by 1<br>• e.g. 2x3=6 so 600÷3=200<br>• 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 (using appropriate x tables) | • know 7 and 11 times tables<br>• recall multiplication and division facts for all multiplication tables up to 12 x12<br>• use place value, known and derived facts to multiply and divide mentally, including:<br>• multiplying by 0 and 1; dividing by 1<br>• recognise and use factor pairs and commutativity in mental calculations<br>• multiply two-digit and three-digit numbers by a one-digit number using formal written layout<br>• 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 (using appropriate x tables) | • instantly recall all facts for tables to 12x12<br>• 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<br>• begin to use formal method of short multiplication<br>• begin to use formal method of short division<br>• 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 (using appropriate times tables) |

| Year Group | Year 4 (page 2 of 2) | | |
|---|---|---|---|
| **Point** | 25 | 27 | 29 |
| **Grade** | Emerging | Developing | Secure |
| **Assessment Milestone** | Autumn | Spring | Summer |
| Fractions (incl. Decimals) | • recognise and show, using diagrams, families of common equivalent fractions, ½, ¼, 1/3<br>• count up in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.<br>• solve problems with simple non-unit fractions [3/4 , 2/3, ] to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number<br>• add and subtract fractions with the same denominator, within one.<br>• round decimals with one decimal place to the nearest whole number<br>• solve simple measure and money problems involving fractions and decimals to one decimal place | • recognise and show, using diagrams, families of common equivalent fractions<br>• count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten, including use of number line<br>• 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<br>• add and subtract fractions with the same denominator<br>• recognise and write decimal equivalents to ¼, ½, ¾<br>• compare numbers with the same number of decimal places up to two decimal places<br>• solve simple measure and money problems involving fractions and decimals to two decimal places. | • connect hundredths to tenths and place value and decimal measures<br>• recognise and write decimal equivalents of any number of tenths or hundredths, including use of number line<br>• 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<br>• solve simple measure and money problems involving fractions and decimals to two decimal places, with mixed number of decimal places |
| Measurement | • convert between different units of measure [for example, kilometre to metre<br>• measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m<br>• use decimal notation to record money<br>• read, write and convert time between analogue and digital 12- and 24-hour clocks | • find the area of rectilinear shapes by counting squares<br>• compare and calculate different measures, including money in pounds and pence<br>• solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days using appropriate amounts | • convert between different units of measure for example hour to minute]<br>• estimate, compare and calculate different measures, including money in pounds and pence<br>• solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days using appropriate amounts |
| Properties of Shapes | • know names of common quadrilaterals.<br>•  know and name common triangles.<br>• identify all lines of symmetry in common 2-D shapes.<br>• complete a simple symmetric figure with respect to a specific line of symmetry. | • compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes<br>• identify acute and obtuse angles<br>• identify lines of symmetry in 2-D shapes presented in different orientations | • compare and order angles up to two right angles by size |
| Position and Direction | • use coordinates to describe position on a 2D grid. | • describe positions on a 2-D grid as coordinates in the first quadrant<br>• describe movements between positions as translations of a given unit to the left/right and up/down | • read, write and use pairs of co-ordinates (2,5)<br>• plot specified points and draw sides to complete a given polygon. |
| Statistics | • draw and read line graphs. | • interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. | • solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. |

| Year Group | Year 5 (page 1 of 2) | | |
|---|---|---|---|
| Point | 31 | 33 | 35 |
| Grade | Emerging | Developing | Secure |
| Assessment Milestone | **Autumn** | **Spring** | **Summer** |
| Number and Place Value | • read, write, order and compare numbers to at least 100 000 and determine the value of each digit<br>• count forwards or backwards in steps of powers of 10 for any given number up to 100 000<br>• recognise and describe linear number sequences<br>• interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero<br>• round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000<br>• solve number problems and practical problems that involve all of the above<br>• read Roman numerals to 1000 (M) | • read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit using >,< and =<br>• count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000<br>• recognise and describe linear number sequences including fractions and decimals<br>• interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero<br>• round any number up to 100 000 to the nearest 10, 100, 1000, 10 000 and 100 000<br>• solve number problems and practical problems that involve all of the above | • read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit using >,< and =<br>• count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000<br>• recognise and describe linear number sequences including fractions and decimals and find term to term rule in words<br>• round any number up to 1000 000 to the nearest 10, 100, 1000, 10 000 and 1000 000<br>• solve number problems and practical problems that involve all of the above<br>• recognise years written in Roman numerals |
| Addition and Subtraction | • (with numbers up to 10,000 and/or mixed numbers of digits)<br>• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)<br>• add and subtract numbers mentally with increasingly large numbers<br>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy<br>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. | • (with numbers up to 100,000 and/or mixed numbers of digits<br>• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)<br>• add and subtract numbers mentally with increasingly large numbers<br>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy<br>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.<br>• use calculators to explore more complex number problems | • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)<br>• add and subtract numbers mentally with increasingly large numbers<br>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy<br>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. |
| Multiplication and Division | • identify multiples and factors, including finding all factor pairs of a number,<br>• know and use the vocabulary of prime numbers,<br>• establish whether a number up to 100 is prime<br>• use formal methods of short multiplication<br>• multiply and divide numbers mentally drawing upon known facts<br>• divide numbers up to 4 digits by a one-digit number using the formal written method of short division without remainders in the context<br>• multiply and divide whole numbers by 10, 100<br>• recognise and use square numbers, and the notation for squared (2) | • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers<br>• know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers<br>• establish whether a number up to 100 is prime and recall prime numbers up to 19<br>• 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<br>• 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<br>• multiply and divide whole numbers and those involving decimals by 10, 100<br>• recognise and use square numbers and cube numbers, and the notation for squared (2)<br>• solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes, using above knowledge<br>• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign<br>• solve problems involving multiplication and division, including scaling [multiplicative reasoning] by simple fractions and problems involving simple rates. | • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000<br>• recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)<br>• 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 and express remainders as a fraction or decimal e.g. 98÷4=98/4 see guidance notes<br>• |

| Year Group | Year 5 (page 2 of 2) | | |
|---|---|---|---|
| Point | 31 | 33 | 35 |
| Grade | Emerging | Developing | Secure |
| Assessment Milestone | **Autumn** | **Spring** | **Summer** |
| Fractions (incl. Decimals and Percentages) | • compare and order fractions whose denominators are all multiples of the same number<br>• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths<br>• add and subtract fractions with the same denominator<br>• read and write decimal numbers as fractions [for example, 0.71 = 71/100]<br>• recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents<br>• round decimals with two decimal places to the nearest whole number<br>• read, write, order and compare numbers with up to two decimal places | • 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 = 1 1/5]<br>• add and subtract fractions with the same denominator and denominators that are multiples of the same number<br>• multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams<br>• round decimals with two decimal places to the nearest whole number and to one decimal place<br>• read, write, order and compare numbers with up to three decimal places | • solve problems involving number up to three decimal places<br>• 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, and as a decimal<br>• solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25 |
| Measurement | • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres<br>• use all four operations to solve problems involving measure [for example, length, mass, money] using decimal notation, including scaling with appropriate numbers. | • convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)<br>• calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes<br>• solve problems involving converting between units of time<br>• use all four operations to solve problems involving measure [for example, length, mass, money] using decimal notation, including scaling with appropriate numbers. | • understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints<br>• estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]<br>• use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling with appropriate numbers |
| Properties of Shapes | • Pupils:<br>• identify 3-D shapes, including cubes and other cuboids, from 2-D representations<br>• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles<br>• draw given angles, and measure them to the nearest 10o.<br>• distinguish between regular and irregular polygons based on reasoning about equal sides and angles. | • Pupils:<br>• draw given angles, and measure them to the nearest 5o.<br>• identify:<br>• angles at a point and one whole turn (total 360o)<br>• angles at a point on a straight line and ½ a turn (total 180o) | • Pupils:<br>• draw given angles, and measure them to the nearest o.<br>• use the properties of rectangles to deduce related facts and find missing lengths and angles. |
| Position and Direction | | • describe positions on a 2-D grid as coordinates in the first quadrant<br>• 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. | |
| Statistics | • solve comparison, sum and difference problems using information presented in a line graph | • complete, read and interpret information in tables, including timetables. | |

| Year Group | Year 6 (page 1 of 2) | | |
|---|---|---|---|
| **Point** | 37 | 39 | 41 |
| **Grade** | Emerging | Developing | Secure |
| **Assessment Milestone** | Autumn | Spring | Summer |
| Number and Place Value | • read and write numbers up to 10 000 000 in numerals and words and determine the value of each digit<br>• round any whole number to a required degree of accuracy<br>• use negative numbers in context<br>• solve number and practical problems that involve all of the above. | • read, write, order and compare numbers up to 10 000 000 and determine the value of each digit<br>• round any whole number to a required degree of accuracy<br>• use negative numbers in context, and calculate intervals across zero<br>• solve number and practical problems that involve all of the above. | • read, write, order and compare numbers up to 10 000 000 and beyond and determine the value of each digit<br>• solve number and practical problems that involve all of the above. |
| Addition and Subtraction | • start to understand the use of brackets<br>• use calculators to develop and investigate patterns and sequences | • perform mental calculations, including with mixed operations and large numbers<br>• use their knowledge of the order of operations to carry out calculations involving the four operations<br>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why<br>• solve problems involving addition, subtraction, multiplication and division<br>• use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.<br>• explore the order of operations using brackets e.g. 2+1x3=5; [2+1]x3=9 | |
| Multiplication and Division | • divide numbers up to 4 digits by a two-digit number using the formal written method of short division | • multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication<br>• 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<br>• divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context<br>• perform mental calculations, including with mixed operations and large numbers<br>• identify common factors, common multiples and prime numbers<br>• use their knowledge of the order of operations to carry out calculations involving the four operations<br>• solve problems involving addition, subtraction, multiplication and division<br>• use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. | • check with a calculator |

SYMPHONY
Symphony Assessment System
PRIMARY SCHOOLS PARTNERSHIP

| Year Group | Year 6 (page 2 of 2) | | |
|---|---|---|---|
| **Point** | 37 | 39 | 41 |
| **Grade** | Emerging | Developing | Secure |
| **Assessment Milestone** | **Autumn** | **Spring** | **Summer** |
| Fractions (including Decimals and Percentages) | • compare and order fractions, including fractions > 1<br>• multiply simple pairs of proper fractions<br>• divide proper fractions by whole numbers [e.g. 1/3÷2=1/6]<br>• associate a fraction with division and calculate decimal fraction equivalents [e.g. 0.375] for a simple fraction [e.g. 3/8]<br>• identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places<br>• multiply one-digit numbers with up to two decimal places by whole numbers<br>• recall and use equivalences between simple fractions, decimals and percentages,<br>• round decimals for simple fractions with recurring decimal equivalents | • use common factors to simplify fractions; use common multiples to express fractions in the same denomination<br>• multiply simple pairs of proper fractions, writing the answer in its simplest form [e.g. 1/4x1/2=1/8]<br>• solve problems which require answers to be rounded to specified degrees of accuracy<br>• recall and use equivalences between simple fractions, decimals and percentages, including in different contexts | • add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions<br>• use written division methods in cases where the answer has up to two decimal places<br>• understand the relationship between unit fractions and division to work backwards e.g. ¼ of a length is 36cm, then whole length is 36x4 |
| Measurement | • 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<br>• convert between miles and kilometres<br>• recognise that shapes with the same areas can have different perimeters and vice versa | • solve problems involving the calculation and conversion of units of measure, using decimal notation<br>• 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<br>• recognise when it is possible to use formulae for area and volume of shapes | • solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate<br>• calculate the area of parallelograms and triangles<br>• calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]. |
| Properties of Shapes | • draw 2-D shapes using given dimensions and angles.<br>• recognise, describe and build simple 3-D shapes, including making nets | • compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals.<br>• recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. | • Pupils:<br>• compare and classify regular polygons.<br>• illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius |
| Position and Direction | • describe positions on the full coordinate grid (all four quadrants | • draw and translate simple shapes on the coordinate plane, and reflect them in the axes | |
| Statistics | • interpret pie charts and line graphs and use these to solve problems | • calculate and interpret the mean as an average. | • construct pie charts and line graphs and use these to solve problems. |
| Ratio and Proportion | • solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison, multiples of 5 and 10.<br>• solve problems involving similar shapes where the scale factor is known or can be found | • solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison, single digit percentages e.g. 7%, 22%<br>• 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 unequal sharing and grouping using knowledge of fractions and multiples. |
| Algebra | • use simple formulae<br>• generate and describe linear number sequences<br>• express missing number problems algebraically | • find pairs of numbers that satisfy an equation with two unknowns | • enumerate possibilities of combinations of two variables. |

| Year Group | Beyond Year 6 (page 1 of 2) | | |
|---|---|---|---|
| **Point** | 49 | 57 | 65 |
| **Grade** | Emerging | Developing | Secure |
| **Assessment Milestone** | **Autumn** | **Spring** | **Summer** |
| Number and Place Value | • make generalisations about<br>• properties of number e.g.<br>• prime numbers, square or<br>• cube numbers<br>• round large numbers to a<br>• given power of 10 and to<br>• one significant figure | • understand and use<br>• negative numbers as<br>• translations on a number<br>• line e.g.<br>• know the direction of travel when subtracting a negative number | • use concepts and<br>• vocabulary of highest<br>• common factor (HCF) and<br>• lowest common |
| Addition and Subtraction | | • add and subtract fractions by writing<br>• them with a common denominator | |
| Multiplication and Division | • understand and use<br>• square root symbol √ | • use prime factor decomposition<br>• of positive integers e.g.<br>• understand that 120 can be<br>• expressed as 2 × 2 × 2 × 3 × 5 or<br>• 23 × 3 × 5 | • estimate using known facts, e.g.<br>• use √81 = 9 and √100 = 10 to estimate √85 |
| Fractions (including Decimals and Percentages) | • use a calculator<br>• where appropriate to<br>• calculate<br>• fractions/ percentages<br>• of quantities and or<br>• measurements<br>• understand and use common denominators to add and subtract fractions<br>• order and approximate<br>• decimals | • evaluate one number as a<br>• fraction or percentage of another<br>• understand and use equivalences between fractions, decimals and<br>• percentages e.g.<br>• 7/8, 1/6<br>• solve problems that involve<br>• percentage increase or<br>• decrease<br>• know which number to consider<br>• as 100 per cent, or a whole, in<br>• problems involving comparisons | • use trial and improvement<br>• methods when solving numerical problems that<br>• involve ordering and<br>• approximating decimals<br>• calculate fractions of quantities<br>• with fractional answers |
| Measurement | • use a straight edge and compasses to carry out standard construction | • calculate lengths, areas and volumes in plane shapes and right<br>• prisms e.g.<br>• calculate volumes and surface areas of cuboids | • understand and use appropriate formulae for finding circumferences<br>• and areas of circles, areas of plane rectilinear figures and volumes of<br>• cuboids when solving problems, e.g.<br>• - deduce and use formulae for the area of a triangle and parallelogram |
| Properties of Shapes | • given the coordinates of 3 vertices of a parallelogram, find the fourth<br>• recognise and use common 2-D representations of 3-D objects e.g.<br>• interpret diagrams on isometric paper | • know and use the properties of quadrilaterals to classify different<br>• types of quadrilateral e.g.<br>• - sort using criteria such as 'diagonals bisect each other' and' diagonals intersect at right angles' and identify a shape for each region of their Venn diagram<br>• solve problems using angle and symmetry properties of<br>• polygons, and explain these properties | • solve problems using angle properties of intersecting and<br>• parallel lines, and explain these properties<br>• identify alternate and corresponding angles<br>• understand a proof that the<br>• sum of angles in a triangle is<br>• 180° and in quadrilaterals is<br>• 360° |

| Year Group | Beyond Year 6 (page 2 of 2) | | |
|---|---|---|---|
| **Point** | 49 | 57 | 65 |
| **Grade** | Emerging | Developing | Secure |
| **Assessment Milestone** | **Autumn** | **Spring** | **Summer** |
| Position and Direction | • reflect shapes in oblique (45°) mirror lines where the shape either does not touch the mirror line or where the shape crosses the mirror line<br>• reflect shapes not presented on grids by measuring perpendicular distances to or from the mirror | • reflect shapes in two mirror lines where the shape is not parallel or perpendicular to either mirror<br>• devise instructions for a computer to generate and transform<br>• shapes and paths<br>• enlarge 2-D shapes by a positive whole-number scale factor, when<br>• given a centre of enlargement | • begin to understand properties of translations, reflections and rotations e.g.<br>• - understand that translations, reflections and rotations preserve length and angle<br>• map objects onto congruent images and describe the transformation |
| Statistics | • construct pie charts using ICT and on paper<br>• construct frequency diagrams using ICT and on paper, e.g.<br>• - construct simple time graphs for time series interpret frequency diagrams<br>• understand and use the mode and range to describe sets of data<br>• understand that the median represents the middle value of a set of data<br>• understand the language of probability such as more likely, equally likely, fair, unfair and certain in the context of everyday situations | • design a survey or experiment to capture necessary data from one or more sources e.g.<br>• - design, trial and, if necessary, refine data collection sheets<br>• - design and use two-way tables<br>• collect and record continuous data, choosing appropriate equal class intervals over a sensible range to create frequency tables e.g.<br>• - choose suitable class intervals when constructing tables<br>• for large sets of raw (discrete or<br>• continuous) data, when dealing with a<br>• combination of two experiments,<br>• identify all the outcomes, using diagrammatic, tabular or<br>• other forms of communication<br>• communicate the outcomes of a statistical survey<br>• select appropriate tables, graphs<br>• and diagrams to support | • draw conclusions from scatter diagrams<br>• have a basic understanding of correlation to compare two simple distributions, using the range and one of mode, median or mean<br>• understand and use the probability scale from 0 to 1<br>• use methods based on equally likely outcomes and experimental evidence, as appropriate to find and justify probabilities, and approximations to these |
| Ratio and Proportion | | • calculate using ratio in appropriate situations<br>• divide a quantity into two or more parts in a given ratio | |
| Algebra | • construct, express in symbolic form, and use simple formulae involving one or two operations<br>• eg understand simple expressions using symbols 2 less than n can be written as n – 2.<br>• evaluate expressions by substituting numbers into them and use symbols to represent an unknown number or a variable<br>• use and interpret coordinates in all four quadrants | • find and describe in words the rule for the next term or nth term of a sequence where the rule is linear<br>• formulate and solve linear equations with whole number coefficients | • use trial and improvement methods and ICT tools when solving equations such as e.g.<br>• x3 + x = 20<br>• represent mappings expressed algebraically, and use Cartesian coordinates for graphical representation |