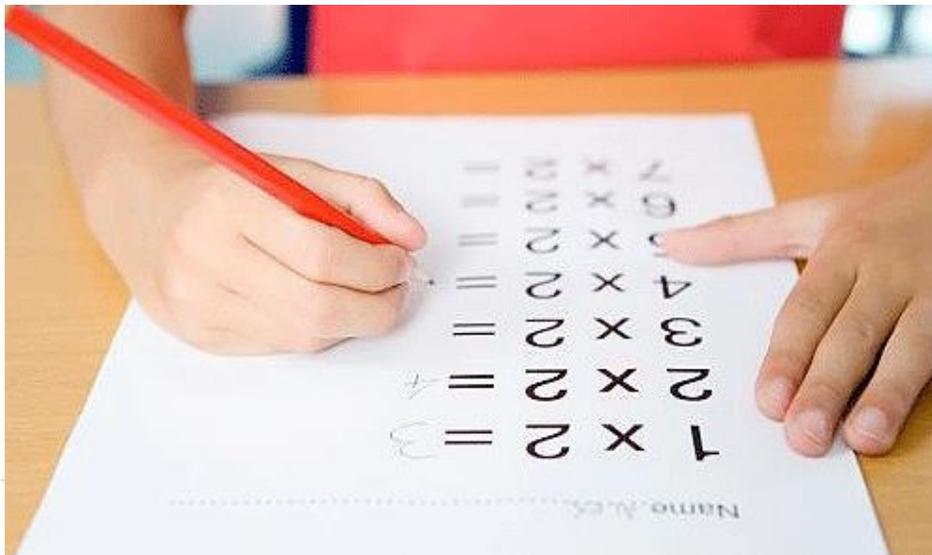# Progression In Mathematics

Progression In Mathematics

This document has been to designed to assist teachers and leaders ensure progression across the mathematics curriculum, from an exemplification of the Early Learning Goals from our 'Trust Ready' curriculum, through to year 6 expectations.

From Year 1 onwards, individual strands of national curriculum mathematics are mapped across the year groups, so teachers can see prior learning expectations and the foundations of their current curricula.

Mathematics

Early Years Expectations: *Trust Ready*

EYFS Educational Programme:

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

"The learning process is something you can incite, literally incite, like a riot."

Audre Lorde

Progression In Mathematics

Nursery Expectations

Area of Learning : Mathematics

Children at the expected level of development for the end of nursery will:

Understand the oneness of 1, twoness or 2 and threeness of 3.
Count 1 to 1 up to 3.
Recognise numbers, 1, 2 and 3 as numerals, in line with individual school's expectations.
Be able to subitise 1, 2 and 3.
Use the words full, half full and empty in a range situations, e.g., sand, water, role play etc.
Use the words more, less and fewer correctly in relation to number, numerical patterns and capacity.
Begin to solve mathematical problems and develop that curiosity to solve basic a problem.
Be able to name a circle, square, rectangle and triangle.
Recognise and create a repeating pattern, A, B, A, B, e.g., stone, stick, stone, stick.
Show an awareness of a sense of time, e.g., snack time, home time, seasons etc.

Progression towards the end of nursery expectation

Summer Term N2

By the end of the Summer term N2 children should be able to…

- Rote count to 10
- Recognise numbers which are familiar to themselves, e.g., their age
- Subitise one, two and three objects (without counting)
- Explore using a range of their own marks and signs to which they ascribe mathematical meanings
- Through play and exploration, begin to learn that numbers are made up (composed) of smaller numbers
- Recognise that each counting number is one more than the one before
- Use language of position, e.g., on, inside, next to, under, over, in front, behind
- Show an awareness of shape similarities and differences between objects
- Enjoy partitioning and combing shapes to make new shapes, e.g., circle, square, rectangle, triangle, heart, star, diamond
- Respond to some common shape names, e.g., circle, square, rectangle, heart, star, diamond
- Create their own spatial patterns showing some organisation or regularity
- Recognise patterns on clothes, in nature and in the environment, e.g., stripes, spots, checks, etc
- Create and extend **AB** patterns, e.g., stick, leaf, stick…
- In meaningful contexts, find the longer or shorter, heavier or lighter and more/less full of two items
- Recall a sequence of events in everyday life and stories
- Show an awareness of a sense of time, e.g., snack time, home time, seasons etc

Progression In Mathematics

Spring Term N2

By the end of the Spring term N2 children should be able to…

- Compare two small groups of up to five objects, saying when there are the same number of objects in each group, e.g., 'You've got two, I've got two. Same!'
- Enjoy counting verbally as far as they can go
- Point or touches each item, saying one number for each item, using the stable order of 1, 2, 3
- Use some number names and number language within play, and may show fascination with large numbers
- Respond to the language of position, e.g., in, on, inside, next to, over, under, in front, behind
- Respond to both informal and common shape names, e.g., pointy, twisty, wiggly, bumpy, heart, star, flower
- Attempt to create arches and enclosures when building, using trial and improvement to select blocks
- Join in with simple patters in sounds, objects, games, stories, dance and movements, predicting what comes next

Autumn Term N2

By the end of the Autumn Term N2 children should be able to…

- Begin to say the numbers, some of which are in the right order (ordinality)
- Begin to count on their fingers
- Explore how things look from different viewpoints including things that are near or far away
- Explore differences in size, length, weight and capacity
- Begin to understand some talk about immediate past and future
- Predict, move and rotate objects to fit the space or create the shape they would like

Summer Term N1

By the end of the Summer Term N1 children should be able to…

- Begin to compare and recognise changes in number of things, using words like more, lots of, same
- In everyday situations, take or give two or three objects from a group
- Respond to some spatial and positional language, e.g., in, on, over, under
- Recognise that two objects have the same shape
- Make simple constructions
- Anticipate what comes next in repeated sound and action patterns
- Be familiar with patterns in daily routines
- Show interest in what happens next using the pattern of everyday routines
- Predict what comes next in a story or rhyme
- Begin to anticipate times of the day, such as meal times or home time

Spring Term N1

Progression In Mathematics

- Say some counting words
- Engage in counting – like behaviour, making sounds and pointing or saying some numbers in sequence
- Use number words, like one or two and sometimes respond accurately when asked to give on or two things
- Begin to select a shape for a specific space
- Enjoy using blocks to create their own simple structures and arrangements
- Join in with a story or rhyme
- Show interest in size and weight
- Explore capacity by selecting, filling and emptying containers
- Begin to understand that things might happen now or at another time in routines
- Move their bodies and toys around objects and explore fitting into spaces
- Begin to remember their way around familiar environments
- Choose puzzle pieces and try to fit them in
- Join in with repeated sound and action patterns

Progression In Mathematics

Reception Expectations| Number and Numerical Patterns ELGs

Early Learning Goal: Mathematics | Number

Children at the expected level of development will:

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Progression towards the Early Learning Goal	Progress in other areas of mathematics curriculum – *Trust Ready*

R+ **By the end of the Summer term children should be able to…** *(Children who are achieving 'Above and Beyond' the summer term expectations would be recorded as RM)*

At all stages of EY development, planned opportunities for 'incidental' learning (deliberately 'dropping in' previous teaching and vocabulary) will support retention of facts and concepts. The focus should be on going wider and deeper (hence there is no 'exceeding' judgement) Where possible, links should be made (inc.through 'continuous provision to other prime and specific areas of the EYFS Framework – and to the environment and world in general (some - but not all – links are highlighted in grey below). Number lines/tracks, real-life objects and manipulatives should be used routinely to support scaffolding and modelling. Vocabulary should be consistent and reinforced.

- Recognise and read numbers to 10 – including when not in order and show that they understand the relationship between them
- Display a deep understanding of the composition of numbers to 10, (e.g make 10 in different ways and combinations using manipulatives/objects)
- Display accurate 1:1 correspondence to 10 using concrete apparatus - then visually
- Confidently count to 10
- Subitise to 10 (through the use of patterns such as numicom, ten frame, bar model))
- Match numeral to quantity up to 10 – inc. out of sequence

- Make sensible estimates within 20 using subitising (estimating number of pebbles, conkers, (link to UtW)
- Use the vocabulary (link to C&L) of addition and subtraction inc. comparison of quantities to 10 – ie. altogether, add, total, plus, more than, take away subtract, less than, fewer than, greater than, equals, the same as - (E) - in practical contexts ie. counting jumps, skips, hops, catches, turns, etc (link to PD)
- Recognise numerals of personal significance (ie. age, number in family, numerals on clocks,door numbers, etc),
- Order and compare sets of numbers up to 20 using '1 more than, less than, fewer' etc.(A) "Who did most hops/jumps/turns?– (link to PD) Also link to clock face – (1hr after/before) (links to 'Number Patterns – compare quantities up to 10
- Know which month/day comes before/ after a given month/day (F)
- Understand largest, most, smallest, least, fewest and number in-between up to 20 –'Order and compare 3 objects according to length, height, mass (G) link to SSM
- Say number sequences within 20 - both forwards and backwards from any number. eg 16,17,18, 13,12,11?
- Record their work using objects, pictures and/or diagrams
- Recognise the verbal abbreviation for ordinal numbers and relate

- To understand 1 more and 1 less for numbers to 10 **(A)**
- Mentally recall number bonds to 5 without apparatus and to 10 (with apparatus if needed)
- Calculate addition bonds and subtraction facts to/within 10 using apparatus and/or number line if needed (ie. by using 2 sets of objects) – link to 1:L1 correspondence
- Know that addition and subtraction are related (inverse operations to 10) **(D)**
- Mentally, quickly recall all doubles to 5 (ie. double 1, 2, 3, 4, 5) **(C)**
- Mentally, quickly recall half of 2,4,6, 8,and 10 **(B)**
- Know that doubling and halving are related (inverse operation)
- Subitise to 5 – dots on a dice, numicom piece, ten-frame, pebbles, etc,
- Know that = means must balance is worth the same as
- Solve addition and subtraction calculations when = is presented in different place (eg. 10 = 7+3)

- this to date of own birthday (e.g 9th of May), months of year 1st, 2nd- and finishing positions in a race. Link to SSM)
- Link ordinal numbers to months/days of week - 1st 2nd (K) …link to SSM
- Understand what makes a number odd or even using idea of one left over

R=	By the end of the Spring term children should be able to…

- Recognise and read numbers to **7** including when not in order with the aid of a number line, picture clues
- Accurate 1:1 correspondence concrete, visual to 7
- Know that anything can be counted eg. claps, drum beats… to 7
- Count an irregular arrangement to 7
- Match numeral to quantity to 7
- Display a deep understanding of the composition of numbers to 7 e.g make 7 in different ways (with concrete aids)
- Becoming more confident with the part whole model for numbers to 7
- Solve addition and subtraction calculations to 10 practically and visually
- Find 1 more and 1 less using numbers to 7 **(A)** – compare using manipulatives and number lines (links to 'Number Patterns – compare quantities up to 10) **(E)**
- Quick mental recall - addition facts to 7 (fingers to help)
- Quick mental recall - subtraction facts within 7 (fingers to help)
- Number bonds to 5, 6 and 7(using concrete aids to help)
- Know that addition and subtraction are related (inverse operations to 7) **(D)**
- Half of numbers 2,4,6, 8, and 10 concrete aid **(B)**
- Doubles to 5 (double 1, 2, 3, 4, 5) concrete aid or fingers **(C)**
   Subitise to 5 - dots on a die, numicom piece, ten-frame, cubes, etc.

- Make sensible estimates using subitising within estimating number of pebbles, conkers, (link to UtW), etc.)
- Begin to use the vocabulary (link to C&L) of addition and subtraction in practical contexts and in discussion – altogether, add, more than, take away, subtract, more than, less than to 7 inc. comparison of quantities **(E)**
- Begin to use ordinal numbers first, second … tenth in real life situations (eg. race results/ days of the month) (K) **(SSM)**
- Count in 2s within 10 – pairs of matching objects knowing when you have one left over – practical
- Understand largest, smallest & number in-between up to 7
- Form the digits 0-7 accurately (link to 7 days in a week SSM)
- Say number sequences within 10 - forwards and backwards eg 4,5,6,??   7,6,5 ??

R-	By the end of the Autumn Term children should be able to…

- Begin to understand and use ordinal numbers first, second -- in real life situations (eg. race results/position in queue) **(K)**

- Recognise and name numbers 0 to 5 – when not in order
- Counting,1:1 correspondence to 5 - how many?
- Counting,1:1 correspondence to 5 – give me?
- Know that anything can be counted (to 5) claps, drum beats…
- Count an irregular arrangement to 5
- Understand that zero means nothing
- Match numeral to quantity to 5 – concrete and visual
- Display a deep understanding of the composition of numbers to 5
- Solve addition and subtraction calculations to 5 - practically and visually
- Find 1 more and 1 less numbers to 5 **(A)** – using concrete and number line
- Addition facts to 5 (fingers to help)
- Subtraction facts to 5 (fingers to help)
- Number bonds to 2, 3 and 4 (using concrete aids to help)
- Subitise to 5 - dots on a die, numicom piece, ten-frame,
- Experiment with their own symbols and marks as well as numerals
- Understand double 1,2,3 and halving even numbers to 6

- Know that a pair means two
- Understand and find pairs of socks, gloves, legs … (practical) and then count up in 2's with support UtW
- Order and compare sets of numbers and quantities/objects up to 5 (UtW)**(E)**
- Understand biggest and smallest numbers within 5 using pratical/visual aids
- Form the digits 0 to 5 accurately
- Written number sequences 0-5 forwards and backwards e.g 2,3,4,? 5,4,3, ??
- Understand and use directional language - forwards, backwards, turn around, on top, underneath, next to. Drip Feed

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Early Learning Goal: Mathematics | Numerical Patterns

Children at the expected level of development will:

- Be able to verbally count beyond 20, recognising the patterns of the counting system
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than, or the same as the other quantity
- Explore and represent patterns within numbers up to 10, including odd and even numbers, double facts and how quantities can be distributed equally

Progression towards the Early Learning Goal	Progress in other areas of mathematics curriculum – *Trust Ready*

R+ By the end of the Summer term children should be able to… *(Children who are achieving 'Above and Beyond' the summer term expectations would be recorded as RM)*

- Count by rote from 0 forwards to 20 and beyond
- Count by rote forwards in 1s from any number to 20 and beyond
- Compare and order a variety of quantities up to 10 recognising greater than, less than and the same as in practical context (inc.quantities) **(E)**
- Understand and use the vocabulary more, most, greater than, fewer, less than and equals, the same as with quantities up to 10 **(E)**
- Instant recognition of odd and even numbers to 10 represented by structures e.g dots, even numbers always have a

- Count to/back in 1s from 20 – count people onto/off a queue/ add/take away single objects
- Pronounce teen numbers correctly – sixteen not sixty
- Count by rote in 2s forwards past 10

SSM

- Chant the months of the year by heart **(J)**
- Begin to link ordinal numbers to each month **(K)**
- Know which day and month comes before/ after a given day and month **(F)**
- Name the four seasons

partner/pairs (made visible)

Both Number and Numerical Patterns ELG

- Know that addition and subtraction are related (inverse operation to 5 (4+1 =5 5-1=4))**(D)**
- Automatic recall of half of numbers 2,4,6, 8, and 10 **(B)**
- Automatic recall of doubles to 5 (double 1,2,3,4 & 5)**(C)**

- Becoming aware of the analogue clock counting around the clock to 12 and recognise and read o'clock times
- Becoming aware of the language associated with time (long hand, short hand, hour, minutes, clock, watch)
- Compose and decompose shapes. children recognise a shape can have other shapes within it, just as numbers can
- Classify and sort objects according to a criteria and begin to sort objects using own criteria **(H)**
- Continue given repeating patterns (sound, colour, shape, objects) link to UtW
- Create own repeating patterns using UtW
- Order and compare 3 objects according to length, mass, capacity **(G)**
- Understand and use the vocabulary longer, taller, wider, shorter, narrower, heavier, lighter, deep, shallow (UtW)
- Recognise and calculate using coins – 1p, 2p, 5p, 10p, 20p

R=	**By the end of the Spring term children should be able to…**

- Count in 1s forwards to 20 and beyond – visual aid
- Count forwards in 1s from any number (to 20) – visual aid
- Count back in 1s from 20– visual aid
- Say the number before and after to 10 - visual aid
- Compare a variety of quantities up to 5 recognising more/greater than, fewer/less than and the same as **(E)**
- Understand and use the vocabulary more, most, greater than, fewer, less than and equals, the same as with quantities up to 5 **(E)**
- Explore odd and even numbers to 10 (represented by structures) recognising and discussing the patterns e.g odd numbers there's always one left out and even numbers always have a partner

Both Number and Numerical Patterns ELG

- Know that addition and subtraction are related (inverse operations to 5) – using concrete aids or fingers **(D)**
- Doubles to 5 concrete aid or fingers **(C)**
- Half of numbers 2,4,6,8,10 - concrete **(B)**

- Count by rote in 2s to 10 - visual aid
- Count by rote in 10s to 50 - visual aid
- Instant recall +1 -1 numbers to 20 – visual aid **(A)**
- Pronounce numbers correctly with support – copy me

SSM

- Chant the days of the week
- Know there are 7 days in a week
- Know which day comes before/ after a given day
- Know which days are the weekend
- Know what day it is today, yesterday, tomorrow
- Chant the months of the year with support **(J)**
- Know which month your birthday is in
- Understand general time of day and chronology of day in school and at home (develop vocab: *morning, lunch, tea, hometime, bed etc*)

- Understand position through words – eg. "The bag is under the table," – with no pointing (under, on top, next to, behind, in front) (PDev – PE – move under)

- Name and describe common solid shapes cube, cuboid, Use the language solid, face, edges

- Sort objects using two criteria e.g Sort solid shapes straight edges, curved edges
- Find something bigger than, smaller than, taller than, shorter than, heavier, lighter, deeper…link to UtW
- Find something the same size, equal to (length, weight, capacity)link to UtW
- Continue a simple repeating pattern e.g red, blue, red … apple, banana, apple …
- Notice and correct an error in a repeating pattern
- To talk about money using the terms, pennies, pence, change, amount
- To read price tags in role play shop up 1p, 2p, 5p,10p

R-	By the end of the Autumn Term children should be able to…

- Count by rote forwards and backwards to 10 – visual aid
- Hold fingers up correctly for each number to 10
- Count on and back in 1s from *any number* to 10 – visual aid and fingers
- Know by heart the number before and after numbers to 5
- Chant rhymes involving numbers e.g 1,2 buckle my shoe…
- Chant a number song involving even/ odd numbers e.g Odd Bodd and Even Steven

SSM

- Chant the days of the week with support
- Begin to know what day it is today
- Begin to know what day it is tomorrow

- Sort objects using a given criteria e.g big, small, heavy, light (link to UtW)
- Name and describe common flat shapes circle, square, rectangle, triangle
- Use the language flat, sides and corners
- Classify and sort objects into sets according to given criteria, areas in classroom with labels, block area, pencils into colours, buttons e.g colour, shape, holes in centre,
- Copy a given pattern (sound, colour, shape, objects -)e.g clap, clap, click… red, blue, red … apple, grape, orange… square, triangle, square … (link to UtW)
- Use templates/ stencils as patterns to produce an identical image e.g draw around stencils and templates
- Copy given pictures/patterns from resources (both natural and manmade e.g conkers, twigs, leaves, inset shape patterns, block area make a model from given picture(link to UtW)
- Understand position through words and real scenarios, pictures – for example, "The bag is under the table," (under, on top, next to, behind, in front) link to PD (PE – 'under the bench/on top of the mat --)
- Discuss simple routes – forwards, backwards, turn, corner (outdoor provision)
- Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then..
- Pay for items in role play shop using pennies
- Know that coins are collectively called money and we spend them, save them

Progression In Mathematics

Number: 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 1000	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 1000 more or less than a given number		

COMPARING NUMBERS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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 1000	order and compare numbers beyond 1000	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

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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		

Progression In Mathematics

READING AND WRITING NUMBERS (including Roman Numerals)					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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 1000 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 1000 (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)	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)	*recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (copied from Fractions)*	*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 (copied from Fractions)*

Progression In Mathematics

ROUNDING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			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

Progression In Mathematics

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				
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

Progression In Mathematics

WRITTEN METHODS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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					
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	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 simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement)				Solve problems involving addition, subtraction, multiplication and division

Progression In Mathematics

Multiplication & Division

MULTIPLICATION & 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 – Multiplication & Division

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		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)

Progression In Mathematics

WRITTEN CALCULATION – Multiplication & Division					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	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 (including decimals)

Progression In Mathematics

PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			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
				know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	*use common factors to simplify fractions; use common multiples to express fractions in the same denomination (copied from Fractions)*
				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 (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3 (copied from Measures)*

Progression In Mathematics

ORDER OF OPERATIONS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					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

Progression In Mathematics

PROBLEM SOLVING – Multiplication & Division					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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 the 1/2 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

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
recognise, find and name a half as one of two equal parts of an object, shape or quantity	recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ 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

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		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

Progression In Mathematics

COMPARING DECIMALS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			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 (INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES)					
	write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.	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. $0.71 = \frac{71}{100}$)	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$)
				recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	
			recognise and write decimal equivalents to $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$	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.

Progression In Mathematics

ADDITION AND SUBTRACTION OF FRACTIONS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)	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. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$)	

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. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$)
					multiply one-digit numbers with up to two decimal places by whole numbers
					divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$)

Progression In Mathematics

MULTIPLICATION AND DIVISION OF DECIMALS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					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

Progression In Mathematics

			PROBLEM SOLVING		
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		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 $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those with a denominator of a multiple of 10 or 25.	

Ratio and Proportion

					Statements only appear in Year 6 but should be connected to previous learning, particularly fractions and multiplication and division
					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, of measures, and such as 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.

Progression In Mathematics

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) *solve problems, including* **missing number** *problems, involving multiplication and division, including integer scaling* (copied from Multiplication and Division)		*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
	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

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 (cm^2) and square metres (m^2) and estimate the area of irregular shapes (also included in measuring) estimate volume (e.g. using 1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water)	calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3.
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)			

Progression In Mathematics

MEASURING and CALCULATING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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

Progression In Mathematics

MEASURING and CALCULATING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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 (cm^2) and square metres (m^2) 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 (cm^3) and cubic metres (m^3), and extending to other units [e.g. mm^3 and km^3]. |
| | | | | | recognise when it is possible to use formulae for area and volume of shapes |

Progression In Mathematics

TELLING THE TIME					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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	

Progression In Mathematics

CONVERTING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	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

Progression In Mathematics

Geometry – Properties of Shapes

IDENTIFYING SHAPES AND THIER 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

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		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 ($^{\circ}$)	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)

Progression In Mathematics

COMPARING AND CLASSIFYING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	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 360°) * angles at a point on a straight line and ½ a turn (total 180°) * other multiples of 90°	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, Direction and Movement

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				

Progression In Mathematics

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

The progression materials for Y1 to Y6 have been taken from the NCETM site, with more details found at: www.ncetm.org.uk