





Maths Curriculum

2014

Contents



This document contains details breakdown comparisons of the new curriculum against the old national strategies and curriculum documentation. Rather than directly comparing against the 1999 curriculum, subjects are compared to the more detailed provisions that were made in more recent documents:

Maths Curriculum 2014 Primary Framework 2006

Year 1 Changes	page 2
Year 2 Changes	page 5
Year 3 Changes	page 8
Year 4 Changes	page 11
Year 5 Changes	page 15
Year 6 Changes	page 19



Changes to the Maths Curriculum: Year 1

At a glance

How does the new curriculum compare to the primary framework for Mathematics (2006)?

What's gone?

- Data handling/Statistics is removed from Y1
- No specific requirement to describe patterns
- No specific requirements to describe ways of solving problems or explain choices

What's been added?

- Counting & writing numerals to 100
- Write numbers in words up to 20
- Number bonds secured to 20
- Use of vocabulary such as equal, more than, less than, fewer, etc.

In detail

A direct reference to the former objectives of the primary framework. Where an objective was covered in more than one block, it is only recorded once.

Red indicates no longer required in Year 1 Green content is new to Year 1

Use and apply mathematics	
Outgoing National Curriculum (QCA units)	New National Curriculum
Solve problems involving counting, adding, subtracting, doubling or halving in the context of numbers, measures or money; recognise the value of coins	“Solve one-step problems that involve addition & subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ ” “Recognise and know the value of different denominations of coins and notes”
Describe a problem using numbers, practical materials and diagrams; use these to solve the problem and set the solution back in the original context	See above
Answer a question by selecting and using suitable equipment, and sorting information, shapes or objects; display results using tables and pictures	See above
Describe simple patterns and relationships involving numbers or shapes; decide whether examples satisfy given conditions	Not explicitly required in new Programme of Study
Describe ways of solving problems and explain choices and decisions orally or using pictures	

Counting & Number Relationships	
Outgoing National Curriculum (QCA units)	New National Curriculum
Count reliably at least 20 objects recognising that when rearranged the number of objects stays the same; relate addition to counting on and count on or back in ones, twos, fives and tens; estimate a number of objects that can be checked by counting	Extended to counting to 100 Similar



Compare and order numbers, using the related vocabulary; use the equals (=) sign	Use + - and =
Read and write numerals from 0 to 20, then beyond; use knowledge of place value to position these numbers on a number track and number line	Extended to numerals to 100; words to 20
Say the number that is one more or less than any given number, and ten more or less for multiples of ten	Similar Use the language of: equal to, more than, less than (fewer), most, least
Use the vocabulary of halves and quarters in context	“Recognise, find and name a half as one of two equal parts of an object, shape or quantity” “Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity”

Number Facts	
Outgoing National Curriculum (QCA units)	New National Curriculum
Derive and recall all pairs of numbers with a total of 10 and addition facts for totals to at least 5; work out the corresponding subtraction facts	“Represent and use number bonds and related subtraction facts within 20”
Use knowledge of counting in twos, fives and tens to derive the multiples of 2, 5 and 10 to the tenth multiple	Count in multiples of twos, fives and tens
Recall the doubles of all numbers to at least 10	“Represent and use number bonds and related subtraction facts within 20”

Calculations	
Outgoing National Curriculum (QCA units)	New National Curriculum
Recognise that addition can be done in any order and use this to add mentally a one-digit number or a multiple of 10 to a one-digit or two-digit number	“Add and subtract one-digit and two-digit numbers to 20, including zero”
Subtract one-digit numbers from one-digit and two-digit numbers and a multiple of 10 from a two-digit number; apply addition and subtraction strategies, e.g. counting on to find the difference	“Add and subtract one-digit and two-digit numbers to 20, including zero”
Understand subtraction as both 'taking away' and 'difference' and use the related vocabulary and symbols to describe and record addition and subtraction number sentences	“Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs”
Solve practical problems that involve combining groups of 2, 5 or 10, or sharing into equal groups	“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”

Position & Transformation	
Outgoing National Curriculum (QCA units)	New National Curriculum
Visualise and name common 2-D shapes and 3-D solids and describe their features; use them to make patterns	“Recognise and name common 2-D and 3-D shapes”



Identify objects that rotate; recognise and make whole	“Describe position, directions and movements, including half, quarter and three-quarter turn”
Visualise and describe the position of objects and direction and distance when moving them	

Measure

Outgoing National Curriculum (QCA units)	New National Curriculum
Estimate, measure, weigh and compare objects, choosing and using suitable uniform non-standard or standard units and measuring instruments, e.g. a lever balance, metre stick or measuring jug	Compare, describe, measure and begin to record and solve practical problems for length/height/capacity/time
Use vocabulary related to time; order days of the week and months; read the time to the hour and half hour	“Recognise and use language relating to dates, including days of the week, weeks, months and years” “Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.”

Data handling

Outgoing National Curriculum (QCA units)	New National Curriculum
Answer a question by recording information in lists and tables; present outcomes using practical resources, pictures, block graphs or pictograms	No statistics work is included in the Year 1 programme of study
Use diagrams to sort objects into groups according to a given criterion; suggest a different criterion for grouping the same objects	



Changes to the Maths Curriculum: Year 2

At a glance

How does the new curriculum compare to the primary framework for Mathematics (2006)?

What's gone?

- Rounding two-digit numbers to the nearest 10
- Halving/doubling no longer explicitly required
- Using lists/tables/diagrams to sort objects

What's been added?

- Solving problems with subtraction
- Finding/writing fractions of quantities (and lengths)
- Adding two 2-digit numbers
- Adding three 1-digit numbers
- Demonstrating commutativity of addition & multiplication
- Describing properties of shape (e.g. edges, vertices)
- Measuring temperature in °C
- Tell time to nearest 5 minutes
- Make comparisons using $<$ $>$ $=$ symbols
- Recognise £ p symbols and solve simple money problems*

*Was required in 2000 Programme of Study for KS1

In detail

A direct reference to the former objectives of the primary framework. Where an objective was covered in more than one block, it is only recorded once.

Red indicates no longer required in Year 2 **Blue** content has been moved to Year 1 **Green** content is new to Year 2

Use and apply mathematics	
Outgoing National Curriculum (QCA units)	New National Curriculum
Solve problems involving addition	Solve problems with addition & subtraction
Identify and record the number sentences involved in a problem	Moved to Y1
Follow a line of enquiry and answer questions by selecting and using suitable equipment and information and organising and presenting the information in lists	
Describe patterns and relationships involving numbers or shapes	"Order and arrange combinations of mathematical objects in patterns"
Present solutions to problems in an organised way; explain decisions	

Counting & Number Relationships	
Outgoing National Curriculum (QCA units)	New National Curriculum
Read and write two- and three-digit numbers in figures and words; describe and extend number sequences and recognise odd and even numbers	"Read and write numbers to at least 100 in numerals and in words" "Recognising odd and even numbers"
Count up to 100 objects by grouping them and counting in tens, fives or twos; explain what each digit in a two-digit number represents, including numbers where 0 is a place holder; partition two-digit numbers in different ways, including into multiples of ten and one	"Count in steps of 2, 3, and 5 from 0" "Recognise the place value of each digit in a two-digit number" "Use place value and number facts to solve problems."



Order two-digit numbers and position them on a number line; use the greater than (>), less than (<) signs	Compare and order numbers from 0 up to 100; use <, > and = signs
Estimate a number of objects and round two-digit numbers to the nearest 10	Not explicitly mentioned
Find one half, one quarter and three quarters of shapes and sets of objects	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
	Adds "write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$."

Number Facts

Outgoing National Curriculum (QCA units)	New National Curriculum
Derive and recall all addition and subtraction facts for each number to at least 10, all pairs with totals to 20 and all pairs of multiples of 10 with totals up to 100	Moves to Y1 "recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100"
Understand that halving is the inverse of doubling and derive and recall doubles of all numbers to 20, and the corresponding halves	<ul style="list-style-type: none"> Not explicitly mentioned
Derive and recall multiplication facts for the 2, 5 and 10 times-tables and the related division facts; recognise multiples of 2, 5 and 10	"Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables"
Use knowledge of number facts and operations to check answers to calculations	"Use...number facts to solve problems"

Calculations

Outgoing National Curriculum (QCA units)	New National Curriculum
Add or subtract mentally a single-digit number or a multiple of 10 to or from any two-digit number; use practical and informal written methods to support addition and subtraction of two-digit numbers	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
Understand that subtraction reverses addition and vice versa and use this to derive and record related addition and subtraction number sentences	"Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems"
Represent repeated addition and arrays as multiplication, and sharing and repeated subtraction (grouping) as division; use practical and informal written methods and related vocabulary to support multiplication and division calculations, including those with remainders	"Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts"
Use the symbols +, −, ×, ÷ and = to record and interpret number sentences involving all four operations; calculate the value of an unknown in a number sentence, e.g. $30 - \square = 24$, $\square \div 2 = 6$	"Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs"
	Adds "show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot"; and "show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot"



Position & Transformation	
Outgoing National Curriculum (QCA units)	New National Curriculum
Visualise common 2-D shapes and 3-D solids and identify them from pictures of them in different positions and orientations; sort, make and describe shapes, referring to their properties	"Identify 2-D shapes on the surface of 3-D shapes" "Compare and sort common 2-D and 3-D shapes and everyday objects."
Identify reflective symmetry in patterns and 2-D shapes and draw lines of symmetry in shapes	"Describe the properties of 2-D shapes, including ... symmetry in a vertical line"
	Adds "describe the properties of 2-D shapes, including the number of sides"; and "describe the properties of 3-D shapes, including the number of edges, vertices and faces"
Follow and give instructions involving position, direction and movement	"Use mathematical vocabulary to describe position, direction and movement"
Recognise and use whole, half and quarter turns, both clockwise and anti-clockwise; know that a right angle represents a quarter turn	"Distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)"

Measure	
Outgoing National Curriculum (QCA units)	New National Curriculum
Estimate, compare and measure lengths, masses and capacities using standard units (m, cm, kg, litre) and suitable measuring instruments	"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)"
Read the numbered divisions on a scale, and interpret the divisions between them, e.g. on a scale from 0 to 25 with intervals of 1 shown but only the divisions 0, 5, 10, 15 and 20 numbered; use a ruler to draw and measure lines to the nearest centimetre	"To the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels"
Use units of time (seconds, minutes, hours, days) and know the relationships between them; read the time to the quarter hour and identify time intervals, including those that cross the hour boundary	"Compare and sequence intervals of time" "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"
	Adds "compare and order [measurements] using >, < and ="; and "recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value"; and "solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change"

Data handling	
Outgoing National Curriculum (QCA units)	New National Curriculum
Answer a question by recording data in lists and tables; represent the data as block graphs or pictograms to show results; use ICT to organise and present data	"interpret and construct simple pictograms, tally charts, block diagrams and simple tables" "ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity"
Use lists, tables and diagrams to sort objects against one or two criteria; explain choices using appropriate language, including not	Not explicitly required in Programme of Study



Changes to the Maths Curriculum: Year 3

At a glance

How does the new curriculum compare to the primary framework for Mathematics (2006)?

What's gone?

- Specific detail of problem-solving strategies (although the requirement to solve problems remains)
- Rounding to nearest 10/100 moves to Year 4
- Reflective symmetry moves to Year 4
- Converting between metric units moves to Year 4
- No requirement to use Carroll/Venn diagrams

What's been added?

- Adding tens or hundreds to 3-digit numbers
- Formal written methods for addition/subtraction
- 8 times table replaces 6 times tables (!)
- Counting in tenths
- Comparing, ordering, adding & subtracting fractions with common denominators
- Identifying angles larger than/smaller than right angles
- Identify horizontal, vertical, parallel and perpendicular lines
- Tell time to the nearest minute, including 24-hour clock and using Roman numerals
- Know the number of seconds in a minute and the number of days in each month, year and leap year

In detail

A direct reference to the former objectives of the primary framework. Where an objective was covered in more than one block, it is only recorded once.

Red indicates no longer required in Year 3 **Blue** content has been moved to Year KS1 **Green** content is new to Year 3

Use and apply mathematics	
Outgoing National Curriculum (QCA units)	New National Curriculum
Solve one- and two-step problems involving numbers, money or measures, including time, choosing and carrying out appropriate calculations	Becomes "solve number problems and practical problems"
Represent the information in a problem using numbers and images; use these to find a solution and present it in context, where appropriate using £.p notation or units of measure	No longer explicit in the Programme of Study Moved to Year 2
Follow a line of enquiry by deciding what information is important; make and use lists, tables and graphs to organise and interpret the information	Becomes broader " <i>interpret and present data using bar charts, pictograms and tables</i> " Line of enquiry no longer required
Use patterns, properties of and relationships between numbers or shapes to identify similarities and differences, and to solve puzzles	No longer explicit in the Programme of Study
Describe and explain methods, choices and solutions to problems, orally and in writing, using pictures and diagrams	No longer explicit in the Programme of Study

Counting & Number Relationships	
Outgoing National Curriculum (QCA units)	New National Curriculum
Order whole numbers to at least 1000 and position them on a number line	Becomes " <i>compare and order numbers up to 1000</i> " and " <i>read and write numbers up to 1000 in numerals and in words</i> " Becomes "count from 0 in multiples of 4, 8, 50 and 100" Building on counting in multiples of 2, 3, 5 & 10 in KS1.



Partition three-digit numbers in different ways, including into multiples of one hundred, ten and one	Becomes “recognise the place value of each digit in a three-digit number (hundreds, tens, ones)”
Round two- or three-digit numbers to the nearest 10 or 100 and give estimates and approximations to their sums and differences	Moves to Year 4
Read and write proper fractions, e.g. $\frac{3}{7}$, $\frac{9}{10}$, interpreting the denominator as the parts of a whole and the numerator as the number of parts; identify fractions of shapes and use diagrams to compare fractions and establish equivalents	Children are expected to: <ul style="list-style-type: none"> Understand and count in tenths Recognise & find fractions of sets of objects Recognise & use fractions Show equivalent fractions using diagrams Add & subtract fractions with common denominators Compare & order unit fractions & those with common denominators

Number Facts

Outgoing National Curriculum (QCA units)	New National Curriculum
Derive and recall all addition and subtraction facts for each number to 20, sums and differences of multiples of 10 and number pairs that total 100	Moves to Year 2
Derive and recall multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables and the corresponding division facts	2, 5 and 10 times-tables moved to Year 2 3, 4 and 8 required in Year 3
Use knowledge of number operations and corresponding inverses to check calculations	Becomes “estimate the answer to a calculation and use inverse operations to check answers”

Calculations

Outgoing National Curriculum (QCA units)	New National Curriculum
Add or subtract mentally combinations of one-digit and two-digit numbers	Moves to Year 2 Adds “add units, tens or hundreds to 3-digit numbers mentally”
Develop and refine written methods to support, record or explain the addition and subtraction of two-digit and three-digit numbers	Becomes more explicit “add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction”
Multiply one- and two-digit numbers by 10 or 100, and describe the effect	Multiplying by 10 covered in Year 2; further scale left to upper KS2
Use practical and informal written methods to support multiplication and division of two-digit numbers (e.g. 13×3 , $30 \div 4$); round remainders up or down, depending on the context	Becomes “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”
Understand that division reverses multiplication and vice versa and use to derive and record related multiplication and division number sentences	Narrowed to “write and calculate mathematical statements for multiplication and division using the multiplication tables that they know”
Find unit fractions of numbers and quantities, e.g. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ and $\frac{1}{6}$ of 12 litres	Begins in Y2 as “write simple fractions e.g. $\frac{1}{2}$ of 6 = 3”



Position & Transformation	
Outgoing National Curriculum (QCA units)	New National Curriculum
Relate 2-D shapes and 3-D solids to drawings of them, and describe, classify, draw and make the shapes	Becomes “draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them”
Draw and complete shapes with reflective symmetry and draw the reflection of a shape in a mirror line along one side	Moves to Year 4
Read and record the vocabulary of position, direction and movement, using the four compass directions to describe movement about a grid	Moves to Year 4
Use a set-square to draw right angles and to identify right angles in 2-D shapes; compare angles with a right angle; recognise that two right angles can form a straight line	Becomes more detailed “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”
	Adds “identify horizontal and vertical lines and pairs of perpendicular and parallel lines”

Measure	
Outgoing National Curriculum (QCA units)	New National Curriculum
Know the relationships between kilometres and metres, metres and centimetres, kilograms and grams, litres and millilitres; choose and use appropriate units to estimate, measure, and record measurements	Moves to Year 4 Moves to Year 2
Read, to the nearest division and half-division, scales that are numbered or partially numbered; use the information to measure and draw to a suitable degree of accuracy	Reading to nearest whole unit moves to Year 2 Students measure, compare, add & subtract using common metric measures
Read the time on a 12-hour digital clock and to the nearest five minutes on an analogue clock; calculate time intervals and find start or end times for a given time interval	Moves to year 2; Y3 must tell time to nearest minute and use specific vocab, inc. seconds, a.m., p.m., etc. Students must also use Roman numerals and 24-hour clock.
	Adds: “know the number of seconds in a minute and the number of days in each month, year and leap year”

Data handling	
Outgoing National Curriculum (QCA units)	New National Curriculum
Answer a question by organising, representing and interpreting data; use tally charts, frequency tables, pictograms and bar charts to highlight results and observations; use ICT to create a simple bar chart	Becomes narrower: “solve one-step and two-step using information presented in scaled bar charts and pictograms and tables”
Use Venn diagrams or Carroll diagrams to sort data and objects using more than one criterion	No longer explicit in Programme of Study



Changes to the Maths Curriculum: Year 4

At a glance

How does the new curriculum compare to the primary framework for Mathematics (2006)?

What's gone?

- Specific detail on lines of enquiry, representing problems and find strategies to solve problems and explaining methods (i.e. largely from old Ma1)
- Using mixed numbers (moved to Y5)
- Most ratio work moved to Y6
- Written division methods (moved to Y5)
- All calculator skills removed from KS2 PoS
- Measuring angles in degrees (moved to Y5)

What's been added?

- Solving problems with fractions and decimals to two decimal places
- Rounding decimals to whole numbers
- Roman numerals to 100
- Recognising equivalent fractions
- Knowing equivalent decimals to common fractions
- Dividing by 10 and 100 (incl. with decimal answers)
- Using factor pairs
- Translation of shapes
- Finding perimeter/area of compound shapes
- Solve time conversion problems

In detail

A direct reference to the former objectives of the primary framework. Where an objective was covered in more than one block, it is only recorded once.

Red indicates no longer required in Year 4 **Blue** content has been moved to Year 3 **Green** content is new to Year 4

Use and apply mathematics	
Outgoing National Curriculum (QCA units)	New National Curriculum
Solve one- and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate	<p>"Solve addition and subtraction two-step problems in contexts" and "solve problems involving multiplying and adding"</p> <p>"Solve simple measure and money problems <i>involving fractions and decimals to two decimal places</i>"</p>
Represent a problem using number sentences and diagrams, use these to find a strategy to solve the problem and present the solution in the context of the problem	No longer explicitly in Programme of Study
Suggest a line of enquiry and the strategy needed to pursue it; collect, organise and interpret selected information to find answers	No longer explicitly in Programme of Study
Use knowledge of numbers and shapes to identify patterns, properties and relationships, and apply them to unfamiliar situations; investigate a statement involving numbers and test it with examples	No longer explicitly in Programme of Study
Report solutions to problems, explanations and reasoning orally and in writing	No longer explicitly in Programme of Study

Counting & Number Relationships	
Outgoing National Curriculum (QCA units)	New National Curriculum
Use positive and negative numbers in context; position them on a number line and state inequalities using the symbols < and >, e.g. $-3 > -5$, $-1 > +1$	<p>"Count backwards through zero to include negative numbers"</p> <p>(< > Symbols are used from Y2)</p>



Use decimal notation for tenths and hundredths, relating the notation to money and measurement; position one- and two-place decimals on a number line	<i>"Compare numbers with the same number of decimal places up to two decimal places"</i>
Recognise the equivalence between decimal and fraction forms of tenths and hundredths	<i>"Recognise and write decimal equivalents of any number of tenths or hundredths"</i>
Use fractions to identify subsets of a set of objects use diagrams to identify equivalent fractions, e.g. $\frac{6}{8}$ and $\frac{3}{4}$, or $\frac{70}{100}$ and $\frac{7}{10}$; interpret mixed numbers and position them on a number line, e.g. $3\frac{1}{2}$	Becomes more challenging <i>"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"</i> Moves to Year 5
Use the vocabulary of ratio and proportion to describe the relationship between two quantities, e.g. 2 to every 3, and between part and whole, e.g. 2 in every 5; estimate proportion, e.g. 'for every 1 red car there are about 4 silver cars', or 'I'm asleep for about $\frac{1}{3}$ of the day'	Solve problems relating to "harder correspondence problems such as n objects are connected to m objects" Most ratio work moves to Year 6
	Adds <i>"round decimals with one decimal place to the nearest whole number"; and</i> <i>"read Roman numerals to 100"; "understand the introduction of zero"</i>

Number Facts

Outgoing National Curriculum (QCA units)	New National Curriculum
Use knowledge of addition and subtraction facts and place value to derive sums and differences of pairs of multiples of 10, 100 or 1000	Largely moved to Y2
Identify the doubles of two-digit numbers; use to calculate doubles of multiples of 10 and 100 and derive the corresponding halves	Doubling is only mentioned in Y1; not otherwise recorded explicitly in Programme of Study
Derive and recall multiplication facts up to 10×10 , the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	Recall multiplication and division facts for multiplication tables up to 12×12
Use knowledge of rounding, number operations and inverses to check calculations	<i>"Round any number to the nearest 10, 100 or 1000" and "use inverse operations to check answers to a calculation"</i>
Identify pairs of fractions that total 1	Adds <i>"Recognise and show families of common equivalent fractions"; and</i> <i>"Recognise/write decimal equivalent to $\frac{1}{4}$, $\frac{1}{2}$, & $\frac{3}{4}$."</i>

Calculations

Outgoing National Curriculum (QCA units)	New National Curriculum
Add or subtract mentally pairs of two-digit whole numbers, e.g. $47 + 58$, $91 - 35$	Moves to Year 2
Use the standard written methods for addition and subtraction of two-digit and three-digit whole numbers and calculations with £.p	Becomes <i>"add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate" and "use the distributive law to multiply two digit numbers by one digit"</i>
Multiply or divide numbers to 1000 by 10 and then 100 (whole number answers), understanding the effect; relate to scaling up or down	<i>"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"</i>



Develop and refine written methods for multiplying and dividing a two-digit number by a one-digit number, to include division with remainders, e.g. 15×9 , $98 \div 6$	<p><i>"Multiply two-digit and three-digit numbers by a one-digit number using formal written layout"</i></p> <p>Written methods for division move to Y5</p>
Find fractions of numbers, quantities or shapes, e.g. $\frac{1}{5}$ of 30 plums, $\frac{3}{8}$ of a 6 by 4 rectangle	Moves to Year 3
Use a calculator to carry out one- and two-step calculations involving all four operations; recognise negative numbers in the display, correct mistaken entries and interpret the display correctly in the context of money	All calculator skills move to KS3 Programme of Study (guidance says some potential calculator use in upper KS2)
	<p>Adds "multiply & divide mentally, including multiplying by 0 and 1; dividing by 1; multiplying together three numbers"; and</p> <p>"recognise and use factor pairs and commutativity in mental calculations"</p>

Position & Transformation	
Outgoing National Curriculum (QCA units)	New National Curriculum
Draw polygons and classify them by identifying their properties	<i>"Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes"</i>
Visualise 3-D objects from 2-D drawings and make nets of common solids	Not explicitly required in Programme of Study
Recognise horizontal and vertical lines; use the eight compass points to describe direction; describe and identify the position of a square on a grid of squares	<p>Moves to Year 3</p> <p>Required in KS2 Geography</p> <p><i>"Describe positions on a 2-D grid as coordinates in the first quadrant"</i></p>
Know that angles are measured in degrees and that one whole turn is 360° compare and order angles less than 180°	<p>Moves to Year 5</p> <p><i>"Identify acute and obtuse angles and compare and order angles up to two right angles by size"</i></p>
	<p>Adds "describe movements as translations"; and</p> <p>"plot points and draw sides to complete a given polygon"</p>

Measure	
Outgoing National Curriculum (QCA units)	New National Curriculum
Use standard metric units and their abbreviations when estimating, measuring and recording length, mass and capacity; know the meaning of kilo, centi and milli and, where appropriate, use decimal notation to record measurements, e.g. 1.3 m or 0.6 kg	<p>Moves to Year 3</p> <p><i>"Estimate, compare and calculate different measures, including money in pounds and pence"</i></p> <p><i>"Convert between different units of measure (e.g. kilometre to metre; hour to minute)"</i></p>
Interpret intervals and divisions on partially numbered scales and record readings accurately, where appropriate to the nearest tenth of a unit	Scale-reading begins in Y2; there are no further specific mentions
Draw rectangles and measure and calculate their perimeters, find the area of rectilinear shapes drawn on a square grid by counting squares	<i>"Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres" and "find the area of rectilinear shapes by counting squares"</i>
Read time to the nearest minute; use am, pm and 12-hour clock notation; calculate time intervals from clocks and timetables	<p>Moves to Year 3</p> <p>Adds "read, write and convert time between analogue and digital 12 and 24-hour clocks"; and</p> <p>"solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days"</p>



Data handling	
Outgoing National Curriculum (QCA units)	New National Curriculum
Determine the data needed to answer a specific question; organise, present, analyse and interpret the data in tables, diagrams, tally charts, pictograms and bar charts, using ICT where appropriate	<p>“Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs”</p> <p>No need for specific questions, presentation, etc.</p>
Compare the impact of representations where scales have intervals of differing step size	No longer mentioned in Programme of Study



Changes to the Maths Curriculum: Year 5

At a glance

How does the new curriculum compare to the primary framework for Mathematics (2006)?

What's gone?

- Detail of problem-solving process and data handling cycle no longer required
- Calculator skills moved to KS3
- Probability moves to KS3

Several elements are now expected to be covered in lower KS2, e.g. decimals/fractions knowledge, points in the first quadrant; parallel/perpendicular lines

What's been added?

- Understand & use decimals to 3dp
- Solve problems using up to 3dp, and fractions
- Write %ages as fractions; fractions as decimals
- Use vocabulary of primes, prime factors, composite numbers, etc.
- Know prime numbers to 20
- Understand square and cube numbers
- Use standard multiplication & division methods for up to 4 digits
- Add and subtract fractions with the same denominator
- Multiply proper fractions and mixed numbers by whole numbers
- Deduce facts based on shape knowledge
- Distinguish regular and irregular polygons
- Calculate the mean average

In detail

A direct reference to the former objectives of the primary framework. Where an objective was covered in more than one block, it is only recorded once.

Red indicates no longer required in Year 5 **Blue** content has been moved to lower KS2 **Green** content is new to Year 5

Use and apply mathematics	
Outgoing National Curriculum (QCA units)	New National Curriculum
Solve one and two-step problems involving whole numbers and decimals and all four operations, choosing and using appropriate methods, including calculator use	<p><i>"Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why"; and</i></p> <p><i>"solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign"; and</i></p> <p><i>"solve problems involving number up to three decimal places"; and</i></p> <p><i>"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"</i></p>
Represent a problem by identifying and recording the calculations needed to solve it; find possible solutions and confirm them in the context of the problem	Not explicitly mentioned in Programme of Study
Plan and pursue an enquiry; present evidence by collecting, organising and interpreting information; suggest extensions to the enquiry	Not explicitly mentioned in Programme of Study
Explore patterns, properties and relationships and propose a general statement involving numbers or shapes; identify examples for which the statement is true or false	Not explicitly mentioned in Programme of Study
Explain reasoning using diagrams, graphs and text	Not explicitly mentioned in Programme of Study



Counting & Number Relationships	
Outgoing National Curriculum (QCA units)	New National Curriculum
Count from any given number in whole number steps and decimal number steps, extending beyond zero when counting backwards; relate the numbers to their position on a number line	"Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000"
Explain what each digit represents in whole numbers and numbers with up to two decimal places, and partition these numbers	Decimals to 2dp covered in Year 4; Year 5 adds "recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents"; and "read, write, order and compare numbers with up to three decimal places"
Use sequences to scale numbers up or down; solve problems involving proportions of quantities and measurements, e.g. decrease quantities in a recipe designed to feed six people	"scaling by simple fractions and problems involving simple rates"
Express a smaller whole number as a fraction of a larger one; find equivalent fractions, including equivalent improper fractions and mixed numbers; relate fractions to their decimal representations	Expected in lower KS2 "Recognise mixed numbers and improper fractions and convert from one form to the other"; and "identify, name and write equivalent fractions of a given fraction" Becomes "read and write decimal numbers as fractions (e.g. $0.71 = 71/100$)"
Understand percentage as the number of parts in every 100 and express tenths and hundredths as percentages	"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 hundred, and as a decimal fraction"
	Adds: "compare and order fractions whose denominators are all multiples of the same number"; and "know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers"; and "establish whether a number up to 100 is prime and recall prime numbers up to 19"

Number Facts	
Outgoing National Curriculum (QCA units)	New National Curriculum
Use knowledge of place value and addition and subtraction of two-digit numbers to derive sums and differences, doubles and halves of decimals, e.g. 6.5 ± 2.7 , halve 5.6, double 0.34	Moves to lower KS2
Recall quickly multiplication facts up to 10×10 , use to multiply pairs of multiples of 10 and 100 and derive quickly corresponding division facts	Table knowledge expected by Y4 to 12×12 "Multiply and divide numbers mentally drawing upon known facts"
Identify pairs of factors of two-digit whole numbers and find common multiples, e.g. for 6 and 9	"Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers."
Use knowledge of number facts, place value and rounding to estimate and to check calculations	"Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy"; and "round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000"; and "round decimals with two decimal places to the nearest whole number and to one decimal place"
	Adds: "recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)"



Calculations	
Outgoing National Curriculum (QCA units)	New National Curriculum
Multiply mentally $TU \times U$; use mental methods in special cases, e.g. to subtract 1995 from 6007, to multiply 18 by 25	"Multiply and divide numbers mentally drawing upon known facts"
Use the standard written methods for addition and subtraction of whole numbers and decimals with one or two places	Moves to Year 4
Use understanding of place value to multiply and divide whole numbers and decimals by 10, 100 or 1000	"Multiply and divide whole numbers <i>and those involving decimals</i> by 10, 100 and 1000"
Use the standard written methods for multiplication and division calculations of $HTU \times U$, $U.t \times U$, $TU \times TU$ and $HTU \div U$	"Multiply numbers up to <i>4 digits</i> by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers"; and "divide numbers up to <i>4 digits</i> by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context"
Find fractions using division, e.g. $1/100$ of 5 kg, and percentages of numbers and quantities, e.g. 10%, 5% and 15% of £80	Moves to lower KS2; Year 5 adds: "add and subtract fractions with the same denominator and multiples of the same number"; and "multiply proper fractions and mixed numbers by whole numbers"
Use a calculator to solve problems, including those involving decimals or fractions, e.g. to find $3/4$ of 150 g; interpret the display correctly in the context of measurement	Calculator skills are all moved to KS3 Programme of Study
	Adds: "solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors"

Position & Transformation	
Outgoing National Curriculum (QCA units)	New National Curriculum
Identify, visualise and describe properties of rectangles, triangles, regular polygons and 3-D solids; use knowledge of properties to draw 2-D shapes and identify and draw nets of 3-D shapes	"Identify 3-D shapes, including cubes and other cuboids, from 2-D representations"
Read and plot co-ordinates in the first quadrant and recognise parallel and perpendicular lines in grids and shapes; use a set-square and ruler to draw perpendicular and parallel lines	Plotting points moves to Year 4 Parallel & Perpendicular lines moves to Year 3
Complete patterns with up to two lines of symmetry and draw the position of a shape after a reflection or translation	Translation moved to Year 4; Symmetry introduced in Y4; "identify, describe and represent the position of a shape following a reflection or translation"
Estimate, draw and measure acute and obtuse angles using an angle measurer or protractor to a suitable degree of accuracy; calculate angles in a straight line	"Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles"; "draw given angles, and measure them in degrees (o)" & "identify angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°)"



Measure	
Outgoing National Curriculum (QCA units)	New National Curriculum
Read, use and record standard metric units to estimate and measure length, mass and capacity; convert larger to smaller units using decimals to one place, e.g. change 2.6 kg to 2600 g	<p>“Convert between different units of metric measure”; and</p> <p>“estimate volume and capacity”</p>
Estimate measurements of length, mass and capacity to a required degree of accuracy, e.g. the nearest centimetre; interpret a reading that lies between two unnumbered divisions on a scale	<p>“estimate volume and capacity”</p> <p>Not explicitly mentioned in Programme of Study</p>
Draw and measure lines to the nearest millimetre; measure and calculate the perimeter of regular and irregular polygons; use the formula for the area of a rectangle to calculate its area	<p>“Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres”; and “calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes”</p> <p>Adds: “use the properties of rectangles to deduce related facts and find missing lengths and angles”; and</p> <p>“distinguish between regular and irregular polygons based on reasoning about equal sides and angles”</p>
Read timetables and time using 24-hour clock notation; use a calendar to calculate time intervals	<p>24-hour clock used in lower KS2</p> <p>“Complete, read and interpret information in tables, including timetables”</p> <p>“Solve problems involving converting between units of time”</p>

Data handling	
Outgoing National Curriculum (QCA units)	New National Curriculum
Describe the occurrence of familiar events using the language of chance or likelihood	Probability moves to KS3 Programme of Study
Determine the data needed to answer a set of related questions; select and organise relevant data using frequency tables; construct pictograms and bar graphs, and line graphs that represent the frequencies of events and changes over time; use ICT to present and highlight features that lead to further questions	<p>Narrows to “solve comparison, sum and difference problems using information presented in a line graph”</p> <p>(i.e. removes need for ICT, data process, selecting/organising data, etc.)</p>
Find and interpret the mode of a set of data	Not explicitly mentioned in Programme of Study



Changes to the Maths Curriculum: Year 6

At a glance

How does the new curriculum compare to the primary framework for Mathematics (2006)?

What's gone?

- Detail of problem-solving processes no longer explicit
- Divisibility tests
- Calculator skills move to KS3 PoS
- Rotation moves to KS3
- Probability moves to KS3
- Median/Mode/Range no longer required

What's been added?

- Compare and ordering fractions greater than 1
- Long division
- 4 operations with fractions
- Calculate decimal equivalent of fractions
- Understand & use order of operations
- Plot points in all 4 quadrants
- Convert between miles and kilometres
- Name radius/diameter and know relationship
- Use formulae for area/volume of shapes
- Calculate area of triangles & parallelograms
- Calculate volume of 3-d shapes
- Use letters to represent unknowns (algebra)
- Generate and describe linear sequences
- Find solutions to unknowns in problems

In detail

A direct reference to the former objectives of the primary framework. Where an objective was covered in more than one block, it is only recorded once.

Red indicates no longer required in Year 6 **Blue** content has been moved to Year 5 **Green** content is new to Year 6

Use and apply mathematics	
Outgoing National Curriculum (QCA units)	New National Curriculum
Solve multi-step problems, and problems involving fractions, decimals and percentages, choosing and using appropriate and efficient methods at each stage, including calculator use	<i>"Solve problems involving addition, subtraction, multiplication and division"; "solve problems which require answers to be rounded to specified degrees of accuracy"; and "solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate"</i>
Represent a problem by identifying and recording the calculations needed to solve it, using symbols for unknown quantities where appropriate; set solutions in the original context and check their accuracy	<i>"Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why"</i> <i>"Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy."</i> <i>(See also algebra notes at foot of page)</i>
Suggest, plan and develop lines of enquiry; collect, organise and represent information, interpret results and review methods; identify and answer related questions	Not explicitly in Programme of Study
Recognise and use sequences, patterns and relationships involving numbers and shapes; suggest hypotheses and test them systematically	Not explicitly in Programme of Study
Explain reasoning and conclusions, using symbols where appropriate	Not explicitly in Programme of Study



Counting & Number Relationships	
Outgoing National Curriculum (QCA units)	New National Curriculum
Find the difference between a positive and a negative integer, or two negative integers, in context	<i>"use negative numbers in context, and calculate intervals across zero"</i>
Use decimal notation for tenths, hundredths and thousandths, partition and order numbers with up to three decimal places, and position them on the number line	Moves to Year 5
Round numbers, including those with up to three decimal places	Becomes <i>"round any whole number to a required degree of accuracy"</i> and <i>"solve problems which require answers to be rounded to specified degrees of accuracy"</i>
Use fractions, percentages and the vocabulary of ratio and proportion to describe the relationships between two quantities and solve problems, e.g. identify the quantities needed to make a fruit drink by mixing water and juice in a given ratio	<i>"Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts"</i>
Express a larger whole number as a fraction of a smaller one; simplify fractions; order a set of fractions by converting them to fractions with a common denominator	Expected lower in KS2 <i>"Use common factors to simplify fractions; use common multiples to express fractions in the same denomination"</i>
Express one quantity as a percentage of another, e.g. express £400 as a percentage of £1000; find equivalent percentages, decimals and fractions	<i>"Solve problems involving the calculation of percentages (e.g. of measures) such as 15% of 360 and the use of percentages for comparison"</i>
	Adds: <i>"compare and order fractions, including fractions > 1"</i>

Number Facts	
Outgoing National Curriculum (QCA units)	New National Curriculum
Use knowledge of place value and multiplication facts to 10×10 to derive related multiplication and division facts involving decimal numbers, e.g. 0.8×7 , $4.8 \div 6$	<i>"Multiply one-digit numbers with up to two decimal places by whole numbers"</i>
Use knowledge of multiplication facts to derive quickly squares of numbers to 12×12 The corresponding squares of multiples of 10	Expected from lower KS2 Not explicitly mentioned in Programme of Study
Recognise that prime numbers have only two factors and identify prime numbers less than 100; find the prime factors of two-digit whole numbers	Moves to Year 5 <i>"Identify common factors, common multiples and prime numbers"</i>
Use approximations and apply tests of divisibility to check results	Not explicitly mentioned in Programme of Study

Calculations	
Outgoing National Curriculum (QCA units)	New National Curriculum
Calculate mentally with whole numbers and decimals, e.g. $U.t \pm U.t$, $TU \times U$, $U.t \times U$, $TU \div U$, $U.t \div U$	<i>"Perform mental calculations, including with mixed operations and large numbers"</i>
Consolidate the use of standard written methods to add, subtract, multiply and divide integers and decimal numbers; calculate the answer to $HTU \div U$ and $U.t \div U$ to one or two decimal places	<i>"Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication"</i> <i>"Use written division methods in cases where the answer has up to two decimal places"</i> <i>"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"</i>



Find fractions and percentages of whole-number quantities, e.g. $\frac{5}{8}$ of 96, 65% of £260	Expected lower in KS2
Use a calculator to solve problems involving multi-step calculations; carry out calculations involving time by converting hours and minutes to minutes	Calculator skills move to KS3 Programme of Study
	Adds: "use their knowledge of the order of operations to carry out calculations involving the four operations"
	Adds: "add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions"; "multiply simple pairs of proper fractions, writing the answer in its simplest form"; "divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$)"; "associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (eg. $\frac{3}{8}$)"

Measure	
Outgoing National Curriculum (QCA units)	New National Curriculum
Use standard metric units of measure and convert between units using decimals to two places notation, e.g. change 2.75 litres to 2750 ml, or vice versa	"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"
Measure and calculate using imperial units still in everyday use; know their approximate equivalent metric values	Common conversions included in Year 5 Adds "convert between miles and kilometres"
Read scales and record results to a required degree of accuracy, recognising that the measurement made is approximate	"Use, read, write and convert between standard units, [...], using decimal notation to up to three decimal places"
Calculate the perimeter and area of rectilinear shapes; estimate the area of an irregular shape by counting squares	Moves to Year 4/5 Adds: "recognise that shapes with the same areas can have different perimeters and vice versa"; "recognise when it is possible to use formulae for area and volume of shapes"; "calculate the area of parallelograms and triangles"; and "calculate, estimate and compare volume of cubes and cuboids using standard units"

Data handling	
Outgoing National Curriculum (QCA units)	New National Curriculum
Describe and predict outcomes from data using the language of chance or likelihood	Probability moves to KS3 Programme of Study
Solve problems involving selecting, processing, presenting and interpreting data, using ICT where appropriate; construct and interpret frequency tables, bar charts with grouped discrete data, and line graphs; interpret pie charts; draw conclusions and identify further questions to ask	"Interpret and construct pie charts and line graphs and use these to solve problems" No detail about data handling process is included
Describe and interpret results and solutions to problems using the mode, range, median and mean	"calculate and interpret the mean as an average." (Other averages are not explicitly mentioned)



Algebra	
Outgoing National Curriculum (QCA units)	New National Curriculum
Using symbols for unknown quantities where appropriate	<ul style="list-style-type: none">Express missing number problems algebraicallyUse simple formulae expressed in wordsGenerate and describe linear number sequencesFind pairs of numbers that satisfy number sentences involving two unknownsEnumerate all possibilities of combinations of two variables.