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?	What's been added?
• 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	• 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 Y6; purple content has moved to Y5; green content is new to Year 6

Use and apply mathematics	
Solve multi-step problems, and problems involving fractions, decimals and percentages, choosing and using appropriate and efficient methods at each stage, including calculator use	*"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"*
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	*"solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why"* *"use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy."* *(See also algebra notes at foot of page)*
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	
Find the difference between a positive and a negative integer, or two negative integers, in context	"*use negative numbers in context, and calculate intervals across zero*"
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 "*round any whole number to a required degree of accuracy*" and "*solve problems which require answers to be rounded to specified degrees of accuracy*"

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	"*solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts*"
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 "*use common factors to simplify fractions; use common multiples to express fractions in the same denomination*"
Express one quantity as a percentage of another, e.g. express £400 as a percentage of £1000; find equivalent percentages, decimals and fractions	"*solve problems involving the calculation of percentages (e.g. of measures) such as 15% of 360 and the use of percentages for comparison*"
	Adds: "*compare and order fractions, including fractions >1*"

Number Facts	
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 ÷ 6	"*multiply one-digit numbers with up to two decimal places by whole numbers*"
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 "*identify common factors, common multiples and prime numbers*"
Use approximations and apply tests of divisibility to check results	Not explicitly mentioned in Programme of Study

Calculations	
Calculate mentally with whole numbers and decimals, e.g. U.t ± U.t, TU × U, U.t × U, TU ÷ U, U.t ÷ U	"*perform mental calculations, including with mixed operations and large numbers*"
Consolidate the use of standard written methods to add, subtract, multiply and divide integers and decimal numbers; calculate the answer to HTU ÷ U and U.t ÷ U to one or two decimal places	"*multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication*" "*use written division methods in cases where the answer has up to two decimal places*" "*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*"
Find fractions and percentages of whole-number quantities, e.g. 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. 1/3 ÷ 2 = 1/6)*" "*associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (eg. 3/8)*"

Position & Transformation	
Describe, identify and visualise parallel and perpendicular edges or faces and use these properties to classify 2-D shapes and 3-D solids	*" recognise, describe and build simple 3-D shapes, including making nets"*
Make and draw shapes with increasing accuracy and apply knowledge of their properties	*"draw 2-D shapes using given dimensions and angles"*
Visualise and draw on grids of different types where a shape will be after reflection, after translations or after rotation through 90º or 180º about its centre or one of its vertices; transform images using ICT	*"draw and translate simple shapes on the coordinate plane, and reflect them in the axes."* *Rotation moved to KS3 Programme of Study*
Use coordinates in the first quadrant to draw and locate shapes	Moves to Year 4 Becomes *"describe positions on the full coordinate grid (all four quadrants)"*
Use a protractor to estimate, measure and draw angles, on their own and in shapes; calculate angles in a triangle or around a point	*"recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles."*
	Adds: "solve problems involving similar shapes where the scale factor is known or can be found"
	Adds: "compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons"
	Adds: "illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius"

Measure	
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 imperials 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	
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	
using symbols for unknown quantities where appropriate	• express missing number problems algebraically • use simple formulae expressed in words • generate and describe linear number sequences • find pairs of numbers that satisfy number sentences involving two unknowns • enumerate all possibilities of combinations of two variables.