**Shaping the Year 7 Curriculum:**

**Building on Year 6**

**Introduction**

At every key stage there are important conceptual and procedural milestones. These are concepts that pupils need to understand deeply and skills they are able to perform fluently so that future concepts and skills can be built on firm foundations.

In July 2020, the DfE published non-statutory guidance for the primary National Curriculum. This guidance summarises the most important elements of knowledge and understanding within each year group from Year 1 to Year 6.

There is a chapter for each year group and each chapter begins with a table that shows ready-to-progress criteria and how these link to pupils’ prior knowledge and future applications. The Year 6 table indicates aspects of the Key Stage 3 curriculum that build on these ideas.



p9 [DfE Teaching Mathematics in Primary Schools July 2020](https://www.gov.uk/government/publications/teaching-mathematics-in-primary-schools)

This document also provides a very useful resource for Key Stage 3 teachers (ideally, in collaboration with Year 6 teachers as part of transition work) to ensure that pupils are ‘secondary ready’ and able to make good progress in Year 7.

***We strongly recommend that you take a look at the*** [***Year 6 guidance***](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/897805/Maths_guidance_year_6.pdf) ***as well as*** [***this short video introduction***](https://www.youtube.com/watch?v=k0Q7Po_aRCo&list=PL6gGtLyXoeq-FMWk00AlcIPo3fhGmi03D&index=8&t=4s) ***that summarises the guidance.***

You may also be interested in this suite of PowerPoint slides offering [exemplification of the ready-to-progress criteria](https://www.ncetm.org.uk/classroom-resources/exemplification-of-ready-to-progress-criteria/) (particularly those for Year 6.)

The ready-to-progress criteria are organised into six strands:



p7 [DfE Teaching Mathematics in Primary Schools July 2020](https://www.gov.uk/government/publications/teaching-mathematics-in-primary-schools)

There are 12 ready-to-progress criteria for Year 6, each one linking to a key idea in the Key Stage 3 curriculum and these are listed in the appendix to this document.

These ready-to-progress criteria usefully cluster into four key ideas and this suite of documents outlines:

* what these key ideas are
* what pupils need to be able to understand and do
* why the ideas are important and how they are built on in Key Stage 3.

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**Appendix**

These tables group the DfE ready-to-progress criteria into four key ideas. Each key idea aligns with a document in this ‘Shaping the Year 7 curriculum’ suite of materials.

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|  | Year 6 ready-to-progress criteria | Key Stage 3 applications |
| Key Idea 1: A deep understanding of place value | 6NPV–1 Powers of 10 Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000). | Understand and use place value for decimals, measures, and integers of any size. Interpret and compare numbers in standard form A × 10n (1 ≤ A < 10), where n is a positive or negative integer or zero. |
| 6NPV–2 Place value in numbers up to 10,000,000 Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning. | Understand and use place value for decimals, measures, and integers of any size. Order positive and negative integers, decimals, and fractions. Use a calculator and other technologies to calculate results accurately and then interpret them appropriately. |
| 6NPV–3 Numbers up to 10 million in the linear number system Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts. | Order positive and negative integers, decimals, and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥ Round numbers and measures to an appropriate degree of accuracy (for example, to a number of decimal places or significant figures). Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation a < x ≤ b. |
| 6NPV–4 Reading scales with 2, 4, 5 or 10 intervals Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts. | Use standard units of mass length, time, money, and other measures, including with decimal quantities. Construct and interpret appropriate tables, charts, and diagrams. |

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|  | Year 6 ready-to-progress criteria | Key Stage 3 applications |
| Key Idea 2: Understanding additive and multiplicative structures and using them to solve problems | 6AS/MD–1 Quantify additive and multiplicative relationships Understand that 2 numbers can be related additively or multiplicatively and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number). | Understand that a multiplicative relationship between 2 quantities can be expressed as a ratio or a fraction. Express 1 quantity as a fraction of another, where the fraction is less than 1 and greater than 1. Interpret mathematical relationships both algebraically and geometrically. Interpret when the structure of a numerical problem requires additive, multiplicative, or proportional reasoning. |
| 6AS/MD–2 Derive related calculations Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding. | Recognise and use relationships between operations including inverse operations. Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships. Understand and use standard mathematical formulae; rearrange formulae to change the subject. |
| 6AS/MD–3 Solve problems involving ratio relationships Solve problems involving ratio relationships. | Use ratio notation, including reduction to simplest form. Divide a given quantity into 2 parts in a given part:part or part:whole ratio; express the division of a quantity into 2 parts as a ratio. |
| 6AS/MD–4 Solve problems with 2 unknowns Solve problems with 2 unknowns. | Reduce a give linear equation in two variables to the standard form y = mx + c; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically. Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations. |

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|  | Year 6 ready-to-progress criteria | Key Stage 3 applications |
| Key Idea 3: Understanding the relationship between the numerator and the denominator in a fraction | 6F–1 Simplify fractions Recognise when fractions can be simplified and use common factors to simplify fractions. | Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property. Simplify and manipulate algebraic expressions by taking out common factors. |
| 6F–2 Express fractions in a common denomination Express fractions in a common denomination and use this to compare fractions that are similar in value. | Order positive and negative integers, decimals, and fractions. Use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative. Use and interpret algebraic notation, including:* a/b in place of a:b
* coefficients written as fractions rather than as decimals.
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| 6F–3 Compare fractions with different denominators Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy. | Order positive and negative integers, decimals, and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥. |

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|  | Year 6 ready-to-progress criteria | Key Stage 3 applications |
| Key Idea 4: Thinking about properties of geometrical figures | 6G–1 Draw, compose and decompose shapes Draw, compose, and decompose shapes according to given properties, including dimensions, angles, and area, and solve related problems.Year 5 NC statementsPupils should be taught to* identify:
	+ angles at a point and one whole turn (total 360°)
	+ angles at a point on a straight line and  a turn (total 180°)
	+ other multiples of 90°
* use the properties of rectangles to deduce related facts and find missing lengths and angles
* distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

Notes and guidance (non-statutory)Pupils use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems.Year 6 NC statementsPupils should be taught to:* recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

Notes and guidance (non-statutory)Pupils describe the properties of shapes and explain how unknown angles and lengths can be derived from known measurements. | Draw shapes and solve more complex geometry problems (see Mathematics programmes of study: key stage 3 - Geometry and measures).Begin to reason deductively in geometry including using geometrical constructions.* apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles.
* understand and use the relationship between parallel lines and alternate and corresponding angles.
* derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons.
* derive and use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line.
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