

Number

Age-Related Assessment Criteria

	Y5	Y6	Y7	Y8
Number and place value	<ul style="list-style-type: none"> • Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals • Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • Solve number problems and practical problems that involve all of the above 	<ul style="list-style-type: none"> • Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit • Use negative numbers in context, and calculate intervals across zero • Round any whole number to a required degree of accuracy • Solve number and practical problems that involve all of the above 	<ul style="list-style-type: none"> • Understand and use place value (e.g. when working with very large or very small numbers, and when calculating with decimals) • Order positive and negative integers, decimals and fractions • Round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures) 	<ul style="list-style-type: none"> • Interpret standard form $A \times 10^n$, where $1 \leq A < 10$ and n is an integer • Round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures)
Calculation	<ul style="list-style-type: none"> • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • 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) • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	<ul style="list-style-type: none"> • Perform mental calculations, including with mixed operations and large numbers • Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • 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 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 	<ul style="list-style-type: none"> • Use the symbols =, \neq, <, >, \leq, \geq • Apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers • Apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers • Use conventional notation for priority of operations, including brackets • Use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor and lowest common multiple 	<ul style="list-style-type: none"> • Apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers – all both positive and negative • Use the concepts and vocabulary of prime numbers, highest common factor, lowest common multiple, prime factorisation • Calculate exactly with fractions • Calculate with standard form $A \times 10^n$, where $1 \leq A < 10$ and n is an integer

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Calculation</p>	<ul style="list-style-type: none"> • 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 using their knowledge of factors and multiples, squares and cubes • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy 	<ul style="list-style-type: none"> • Use their knowledge of the order of operations to carry out calculations involving the four operations • Identify common factors, common multiples and prime numbers • Solve problems involving addition, subtraction, multiplication and division • 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, an appropriate degree of accuracy 	<ul style="list-style-type: none"> • Use positive integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 • Recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions) • Estimate answers; check calculations using approximation and estimation, including answers obtained using technology 	
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Fractions, decimals & percentages

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| <ul style="list-style-type: none"> • Compare and order fractions whose denominators are all multiples of the same number • Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}$] • Add and subtract fractions with the same denominator and denominators that are multiples of the same number • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • Round decimals with two decimal places to the nearest whole number and to one decimal place • Read, write, order and compare numbers with up to three decimal places • Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • Read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • Write percentages as a fraction with denominator 100, and as a decimal • 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 fractions with a denominator of a multiple of 10 or 25. • Solve problems involving number up to three decimal places | <ul style="list-style-type: none"> • Compare and order fractions, including fractions > 1 • Use common factors to simplify fractions; use common multiples to express fractions in the same denomination • 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 [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] • Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] • Solve problems which require answers to be rounded to specified degrees of accuracy • Identify the value of each digit in numbers given to three decimal places • Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places • Multiply one-digit numbers with up to two decimal places by whole numbers • Use written division methods in cases where the answer has up to two decimal places • Use common factors to simplify fractions; use common multiples to express fractions in the same denomination • Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts | <ul style="list-style-type: none"> • Order positive and negative integers, decimals and fractions • Express one quantity as a fraction of another, where the fraction is less than 1 or greater than 1 | <ul style="list-style-type: none"> • Identify and work with fractions in ratio problems • Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $\frac{7}{2}$ or 0.375 or $\frac{3}{8}$) • Interpret fractions and percentages as operators |
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