

KS3 Assessment Model : Year 7

Year 7	Number	Algebra	Ratio, Proportion and Rates of Change	Geometry and Measure	Probability	Statistics
Fluency Reasoning Problem solving	Consolidate numerical and mathematical capability from key stage 2 and extend understanding of the number system and place value to include decimals.	Use algebra to generalize the structure of arithmetic Look for proofs and counter examples	Extend and formalize knowledge of ratio and proportion Begin to reason deductively about proportionality	Use language and properties precisely to analyse 2-D and 3-D shapes Begin to reason deductively about geometric	Explore inferences in the context of experimental probability	Identify variables and express relationships between variables in real life situations Make and test conjectures
Year 6	Compare and order fractions, including fractions >1 . Add and subtract fractions with different denominators and mixed numbers. Multiply simple pairs of proper fractions, writing the answer in its simplest form. Accolate a fraction with division and calculate decimal fraction equivalents. Identify the value of each digit to 3 decimal places and multiply and divide numbers by 10, 100 and 1000. Multiply one-digit numbers with up to two decimal places by whole numbers.					
Phase 1 inc. Y.6	Accolate a fraction with division and calculate decimal fraction equivalents (e.g., 0.375 Use the four operations, including formal written methods, applied to integers, decimals. Understand and use place value for decimals 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 Recognize and use relationships between operations, including inverse operations Use the symbols =, \neq , $<$, $>$, \leq , \geq Use conventional notation for the priority of operations, including brackets Use a calculator and other technologies to calculate results accurately and then interpret them appropriately	Use and interpret algebraic notation, including: ab in place of $a \times b$, $3y$ in place of $y + y + y$ and $3 \times y$, a^2 in place of $a \times a$, a^3 in place of $a \times a \times a$, $a2b$ in place of $axaxb$, ab in place of $a + b$, brackets Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors Simplify and manipulate algebraic expressions to maintain equivalence by collecting like terms and multiplying a single term over a bracket Understand and use standard mathematical formulae	Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1	Calculate and solve problems involving perimeters of 2D shapes Derive and apply formulae to calculate and solve problems involving perimeter and area of triangles, parallelograms, trapezia		
Phase 2	Use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor and lowest common multiple Use integer powers and associated real roots (square, cube and higher), recognize powers of 2, 3, 4, 5 Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers Order positive and negative integers, decimals and fractions Use the number line as a model for ordering of the real numbers	Generate terms of a sequence from a term-to-term rule Recognize arithmetic sequences Recognize geometric sequences and identify other sequences that arise Substitute numerical values into formulae and expressions Use algebraic methods to solve linear equations in one variable	Change freely between related standard units (for example time, length, area, and volume/capacity, mass)	Use the properties of the faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres Volume of cuboids (including cubes) Describe , sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric Use the standard conventions for labelling the sides and angles of triangle ABC Identify and construct congruent triangles	Record , describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally likely outcomes, using appropriate language and the 0 – 1 probability scale	
Phase 3	Define percentage as number of parts per hundred Interpret percentages and percentage changes as a fraction or a decimal, and interpret these multiplicatively Express one quantity as a percentage of another Compare two quantities using percentages Use standard units of mass, length, time, money and other measures, including with decimal quantities	Work with coordinates in all four quadrants Recognise, sketch and produce graphs of linear functions of one variable, using equations in x and y and the Cartesian plane	Use ratio notation, including reduction to simplest form Divide a given quantity into two parts in a given ratio or part:whole ratio	Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles Identify properties of, and describe the results of translations, rotations and reflections applied to given figures		Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts and pictograms for categorical data, and vertical line (or bar) charts for ungrouped numerical data Describe, interpret and compare observed distributions of a single variable through data sets from univariate empirical distributions through appropriate measures of central tendency (mean, mode, median) and spread (range)

HIAS Maths Team

Jo.lees@hants.gov.uk

For further details on the full range of services available please contact us using the following email:

htlcdev@hants.gov.uk

Upcoming Courses

Keep up-to-date with our learning opportunities for each subject through our Upcoming Course pages linked below. To browse the full catalogue of learning offers, visit our new Learning Zone. Full details of how to access the site to make a booking are provided [here](#).

- [English](#)
- [Maths](#)
- [Science](#)
- [Geography](#)
- [RE](#)
- [History](#)
- [Leadership](#)
- [Computing](#)
- [Art](#)
- [D&T](#)
- [Assessment](#)
- [Support Staff](#)
- [SEN](#)