

Year 8 Aspiring Higher (Set (9-8) (9-7), (9-6))



**CHESTERTON
COMMUNITY COLLEGE**

Assessment 1a – Middle of half term 1

This assessment is on fraction arithmetic and percentages

The assessment reviews the fraction arithmetic covered in Year 7, extending to algebraic fractions. It also looks at the equivalence of fractions, decimals and percentages and how to change a recurring decimal into a fraction.

Students take an in depth look at percentages and how amounts can be expressed as a percentage, as well as increasing and decreasing by a percentage using both calculator and non-calculator methods.

	😊	😐	😞	Maths Watch
Fractions				
I can find equivalent fractions				N23b
I can simplify fractions				N23c
I can convert between mixed numbers and top heavy fractions				N35
I can add and subtract fractions with the same denominator				N36
I can add and subtract fractions with different denominators (including cases with more than 2 fractions)				N36
I can multiply fractions				N42a
I can divide fractions				N42b
I can multiply or divide a whole number by a fraction				N37a/b
I can add, subtract, multiply and divide mixed numbers				N41,N42a/b
I can apply the rules of addition, subtraction, multiplication and division of fractions to simple algebraic fractions				
I can find the reciprocal of a whole number, a fraction and a mixed number				76
I can convert a recurring decimal into a fraction				177
Percentages				
I can convert a number between fractions, decimals and percentages				N32
I can describe/write an amount as a percentage				N39a
I can recognise when a fraction will produce a recurring decimal when written in that form				
I can find a percentage of an amount without a calculator by using 1%, 10% etc				87
I can find a percentage of an amount with a calculator using a decimal multiplier				86
I can increase or decrease an amount by a percentage without a calculator				R9a
I can use a decimal multiplier to increase or decrease an amount by a percentage				R9b
I can solve problems involving multiple increases or decreases using a decimal multiplier (Eg compound interest problems)				164
I can use percentages, fractions and decimals to compare real life situations to find the 'best buy'				41
I can solve reverse percentage problems				110

Year 8 Aspiring Higher (Set (9-8) (9-7), (9-6))



**CHESTERTON
COMMUNITY COLLEGE**

Assessment 1b - Middle of half term 2

This assessment is on geometry.

Students are assessed on the properties of polygons, including finding internal and external angles. This work is a continuation of the work in Year 7 on angles. They are also assessed on transforming a shape both formally and informally using rotations, reflections, translations and enlargements with a positive scale factor.

	😊	😐	😞	Maths Watch
Angle Properties of Shapes				
I can name all the polygons up to 10 sides				G11
I can define when a polygon is regular or irregular				G11
I can Identify interior and exterior angles in a shape				123
I can find the sum of all the internal angles in any regular shape (using the formula (number of sides – 2) × 180				123
I can calculate the interior angle of any regular polygon				123
I can calculate the exterior angle of any regular polygon				123
Given an internal or external angle of a regular polygon I can find the number of sides				123
I can solve angle problems involving several polygons				123
I can use the angle work from year 7 (angles round a point, angles on a straight line, corresponding angles, alternate angles and co-interior angles) to solve problems with polygons				45, G18
Transformations				
I can plot and read coordinates in all four quadrants				A1b
I can recognise congruent shapes				12b
I can recognise when two shapes are similar				R10
I can construct a triangle given three sides				147
I can find related side lengths in similar shapes				144
I can prove that two triangles are congruent using the criteria SSS, SAS, ASA, RHS				G31,166
I can draw and recognise vertical lines ($x = \text{a number}$) and horizontal lines ($y = \text{a number}$) and the main diagonal lines ($y = x$ and $y = -x$)				A5
I can reflect a shape informally on a grid				G4a/b
I can reflect a shape on a pair of coordinate axes in a specific line				48
I can translate a shape informally on a grid				G5
I can translate a shape on a coordinate grid using a vector				50
I can rotate a shape informally on a grid				G6
I can rotate a shape on a coordinate grid with a centre of rotation by 90° , 180° , 270° both clockwise and anticlockwise				49
I can combine two or more transformations involving translations, reflections and rotations				182
I can describe a transformation on a coordinate grid fully as either a translation, reflection or rotation				182
I can enlarge a shape informally on a grid				G28
I can enlarge a shape formally on a grid using a +ve scale factor				G28

Year 8 Aspiring Higher (Set (9-8) (9-7), (9-6))



**CHESTERTON
COMMUNITY COLLEGE**

Assessment 2a - Middle of half term 3

This assessment is on algebra, probability and representing data

Students recap their algebra skills from last year: Collecting like terms, simplifying terms using index algebra, and expanding and factorising single brackets and solving linear equations using the balancing method. They then extend this knowledge to expanding and factorising double brackets and solving equations that cannot easily be solved by balancing using trial and improvement or factorising instead.

Students then look at how two way tables and frequency trees can be used to organise data, linking this to the work from last year on probability.

	😊	😐	😞	Maths Watch
Expressions and Equations				
I can simplify linear expressions by collecting like terms Eg Simplify: $2a + 3 - 3b + 4a + b + 2$				A6
I can multiply together two simple expressions: Eg Simplify: $2a \times 3b$				A7a
I can use indices to simplify expressions involving repeated multiplication Eg Simplify: $a \times a \times a \times a$				
I can divide two simple expressions: Eg Simplify: $6a^3 \div 2a^2$				A7b
I can expand single brackets				A8
I can expand and simplify an expression containing several single brackets				A8
I can factorise an expression into a single bracket				A9
I can solve linear equations where the unknown appears on only one side of the equation				A12
I can solve linear equations where the unknown appears on both sides of the equations				A19b
I can solve linear equations that have brackets in them				A19a
I can solve a problem involving a linear equation by writing the equation first				A17
I can solve linear equations that have fractions in them				135
I can rearrange a formula to make a new letter the subject				A13a/b
I can solve a non-linear equation using trial and improvement				A16,A25
I can factorise a linear expression				A9
I can factorise a quadratic expression				157
I can solve a quadratic equation by factorising				157
Probability and Data				
I understand that probabilities are always given as a fraction, decimal or percentage				P1
I can calculate the probability of a single or combined event happening by listing equally likely events				P2a
I can calculate the probability of a single event happening by interpreting a frequency table				P2a
I can use the fact that probabilities sum to 1				P4,P5
I can draw and interpret a two way table to solve problems				P4
I can use a two way table to calculate probabilities				P5
I can draw a frequency tree to solve problems				57

Year 8 Aspiring Higher (Set (9-8) (9-7), (9-6))



**CHESTERTON
COMMUNITY COLLEGE**

Assessment 2b - End of half term 4

This assessment is on 3d shapes and direct and inverse proportion.

Students are assessed on how to represent 3d shapes, including constructing accurate nets and plans and elevations. They are also assessed on finding the surface area and volume of a 3d shape, both of these require knowledge about finding the area of shapes covered in previous years in particular areas of 2d shapes and conversion of metric units

Students also build on the work on ratio from Year 7 to explore situations that use direct and inverse proportion: Conversion rates between currencies and imperial units, the unitary method for recipes and best buys. Students are expected to be able to convert between all metric units from memory. They are also expected to be able to convert and compare other units where the conversion rate is given in the question, this includes currency conversions and imperial measures.

	😊	😐	☹️	Maths Watch
3D Shapes				
I can convert between standard metric units for length, weight and capacity				N7a
I can find the area of triangles, rectangles and compound shapes				G20a/c, G24
I can name the common 3d shapes: cube, cuboid, cone, sphere, triangular based pyramid (tetrahedron), square based pyramid, cone				G12a
I can identify which 3d shapes are prisms and which are not				G12a
I can identify the faces, edges and vertices in a 3d shape				G12a
I can identify the Net of a cube, cuboid, triangular based pyramid (tetrahedron), square based pyramid				G12c
Given the side lengths of a 3d shape with square, rectangular or triangular faces, I can construct an accurate Net				G12b
I can draw the plans and elevations of a simple 3d shape made from cubes				51
I know that volume is measured in cubed units and that surface area is measured in squared units				
I can calculate the surface area of a cube/cuboid				G21b
I can calculate the volume of cube/cuboid				115
I can calculate the surface area of a more complex 3d shape with sides made from squares, rectangles and triangles				G25b
I can calculate the volume of a prism using the formula: Volume = Area of cross section x depths				119
I can convert between metric units for area Eg m ² to cm ²				200
I can convert between metric units for volume Eg m ³ to cm ³				200
Direct and Inverse Proportion				
I can convert between metric units for metres, litres and grams				112
I know that 1 litre = 1000 cm ³ and can use this to convert between measures of				112
I can convert between non-metric units when given the conversion rate Eg £ to \$ or kg to lbs etc				105
I can solve problems involving direct proportion and ratio				R8
I can divide a quantity in a given ratio				R5b
I can convert between metric units for speed				R11a
I can recognise when problems are in inverse proportion and solve simple problems using inverse proportion				R13

Year 8 Aspiring Higher (Set (9-8) (9-7), (9-6))



**CHESTERTON
COMMUNITY COLLEGE**

Assessment 3a - End of half term 5

This assessment is on graphs and statistics

Students are also assessed on their ability to plot and interpret straight line graphs, again building on their work on linear graphs in year 7. The unit also assesses their understanding of the relationship between the equation and the graph itself with a special look at the gradient and its applications to real life graphs involving rates.

The statistics unit reviews the work on statistics from year 7. It extends the work with a greater focus on comparing data using average and the range. It also extends the use of graphs to look at stem-and-leaf diagrams and scatter graphs. There is also a look at different sampling techniques.

	😊	😐	😞	Maths Watch
Graphs				
I can read and plot coordinates in all four quadrants				8
I can complete a table of values for a linear equation and plot its graph				A14a
I can calculate the gradient of a straight line on a pair of coordinate axes				A14b
I understand how the gradient of a line relates to its equation				A14b
I can find the equation of a straight line from its graph				A14c
I can sketch a graph in the form $y = mx + c$ without plotting points				A14c
I can identify the equations of lines that will produce parallel graphs				159b
I can write down the equation of a line that is parallel to another line				159b
I understand the relationship between the graphs of $y = mx + c$ and $y = -mx + c$				
Statistics				
I can find the mean, mode and median for a list of data				62
I can find the mean, mode and median for data in a frequency table				S10a
I can find the range for a list of data				62
I can find the range for data in a frequency table				S10a
I can compare two sets of data using averages and the range				
I can draw an ordered stem-and-leaf diagram				128b
I can draw an ordered back to back stem-and-leaf diagram to compare two distributions				128b
I can find the median and range of a set of data from a stem-and-leaf diagram				128b
I understand the difference between primary and secondary sources of data				152
I understand how sources of data might be biased				152
I understand the concept of sampling and why it is sometimes necessary				152
I understand the difference between a sample and a population				152
I can draw scatter graphs of experimental data				129
I can draw a line of best fit on a scatter graph and use it to make predictions				129
I can identify positive, negative and absence of correlation				129

Year 8 Aspiring Higher (Set (9-8) (9-7), (9-6))

Assessment 3b - Middle of half term 6

This assessment is on statistics.

This unit looks extends he ideas of direct proportion from the last assessment, to look at distance, speed and time including distance speed and time calculations and graphs. It also looks at other compound units and their conversions.



	😊	😐	☹️	Maths Watch
Distance/Speed/Time and Compound Units				
I can draw and interpret distance/time and velocity/time graphs				143,216a
I can find the speed of a part of a journey by calculating the gradient of a distance time graph				143
I can interpret the gradient of a graph for other real life situations as a rate of change				216b
I can convert compound units Eg Pressure, Speed,				142