

Year 9 Aspiring Foundation (Set (7-5) 7(5))

Assessment 1a - End of September

This assessment is of number skills and rounding.

This work reviews and builds on the work on whole number and decimal arithmetic from Year 7 and Year 8.



	😊	😐	☹️	Maths Watch
Arithmetic				
I can put lists of positive and negative numbers in order of size				N2a
I can use the symbols = , ≠ , < , > , ≤ , ≥ to compare numbers				A20a
I can order decimal numbers up to 2 decimal places				N2b
I can round whole numbers to the nearest ten, hundred or thousand				N27a
I can round decimal numbers to the nearest whole number				N27b
I can round decimal numbers to 1 or 2 decimal places				N27b
I can use written methods to add and subtract whole and decimal numbers				N13a/b,N14a/b
I can use written methods to multiply whole and decimal numbers				N15a/b
I can use written methods to divide whole and decimal numbers				N16,N29a/b
I can add and subtract negative whole and decimal numbers				N19a
I can multiply and divide negative whole and decimal numbers				N19b

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Assessment 1b – Mid November



This assessment is on algebra, indices and standard form

Students look again at core algebra skills and then focus on solving *equations* extending their knowledge to include more challenging linear equations where the unknown appears on both sides of the equation.

Students also extend their knowledge of indices to learn how to write very large and very small numbers using standard form notation.

	😊	😐	😞	Maths Watch
Algebra and Equations				
I can substitute positive and negative numbers into a formula accurately				A10
I understand the terms: expression, term, equation, formula and identity				A2
I understand that $2 \times a$ can be written as $2a$				A2
I understand that $a \div 2$ can be written as $\frac{a}{2}$				A2
I understand the difference between $2a$ and a^2				A2
I can construct expressions from worded descriptions using addition, subtraction and multiplication and division, using brackets where appropriate				A4
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 single step equations Eg $x + 5 = 9$, $3x = 27$, $x - 3 = 8$, $\frac{x}{3} = 4$				A12
I can solve linear equations where the unknown is on one side Eg $3x + 2 = 14$				A12
I can write an equation to describe a 'think of a number' type problem Eg I think of a number, n , double it and subtract 3. Write an expression for the new answer				A17
I can solve linear equations where the unknown appears on both sides of the equation Eg $3x - 1 = x + 7$				A19b
Standard form				
I can use index notation for small powers				29
I can use square, cube and power functions on a calculator				
I can simplify expressions containing powers				34
I can use and interpret index notation with negative powers				154
I can convert whole numbers between standard form and ordinary form				83
I can convert decimal numbers between standard form and ordinary form				83
I can list numbers given in standard form in ascending order of size				83
I can multiply and divide numbers in standard form without a calculator				83
I can recognise the difficulty in adding and subtracting numbers in standard form without a calculator and overcome this				83

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Assessment 2a – Mid January

This assessment is on Geometry and on Probability



In geometry we assess the area work from Years 7 and 8, before looking at 3d shape, their names and how to calculate their surface areas and volumes. We focus on prisms.

In Probability students revise fraction arithmetic and finding the probability of single events by listing outcomes, before looking at more complex combined events using sample space diagrams.

	😊	😐	☹️	Maths Watch
Area and Volume				
I can find the area of a rectangle and square				
I can find the area of a triangle				
I can find the area of compound shapes				
I can name the main 3d shapes				
I can recognise and use the words vertex, edge and face when describing 3d shapes				
I can draw and use the Net of a cube or cuboid				
I can find the volume of a 3d shape by counting cubes				
I can find the volume of a cube or cuboid				
I can find the surface area of a cube or cuboid				
I can find the volume of a simple prism				
Probability				
I can find and use equivalent fractions				
I can add and subtract fractions with the same denominator				
I can add and subtract fractions with a different denominator				
I can find the probability of a single event by listing the outcomes				
I can find the probability of combined events by using a sample space diagram				
I can estimate the probability/find the relative frequency of a combined event by experiment				

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Assessment 2b - End of March

The assessment is on percentages and geometry.

Students need to be able to convert between fractions, decimals and percentages. Students need to be able to calculate percentage changes efficiently using multipliers. This work builds on the knowledge from year 8.

The assessment on geometry looks at constructing shapes using a ruler and compass and at Pythagoras' theorem.



	😊	😐	😞	Maths Watch
Percentages				
I can find 10%, 20%, 25% of a whole number or of money.				
I can convert between fractions and percentages				85
I can calculate the percentage of an amount				86,87
I can calculate the outcome of percentage increase or decrease				108
I can find and use multipliers in percentage increase calculations (eg 15% increase can be found by multiplying with 1.15)				R9b
I can find and use multipliers in percentage decrease calculations (eg 15% decrease can be found by multiplying with 0.85)				R9b
Loci and Constructions				
I can draw circles and arcs, including using compasses				
I can construct triangles, including equilateral triangles using compasses				147
I can construct the perpendicular bisector of a line				G26b
I can construct the bisector of an angle				G26c
I can describe the locus of a point or the loci of points from a diagram				165
I can recognise vertically opposite angles				
I can recognise alternate and corresponding angles				
Right angled triangles				
I can use Pythagoras to find the hypotenuse of a right angle triangle				150a,150b
I can use Pythagoras to find a shorter side of a right angle triangle				150a,150b
I can use Pythagoras to show that a triangle is right angled				

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Assessment 3a– Mid May



This assessment focuses on Statistics and Loci.

The assessment on statistics extends students' knowledge of mean, median, mode and range calculations with a focus on handling continuous data and data in tabulated form.

For geometry students look at how to find the area and perimeter of a circle.

	😊	😐	☹️	Maths Watch
Statistics				
I can calculate the mean, median, mode and range of a list of numbers				62
I can find the mean, median, mode and range from a frequency table				130a
I can estimate the mean and median from grouped frequency tables				130b
I can compare data sets using the mean, median, mode and range				
I can discuss the value of mean, median and mode in representing particular data sets.				
I can record data in tally charts, frequency tables and grouped frequency tables				15
I can draw and interpret a frequency polygon				65b
I can compare data sets from graphical representation such as pie charts, bar charts and frequency polygons				
Circles				
I can round numbers to 1, 2 or 3 decimal places				N27b
I know the names of parts of a circle				116,149
I can draw circles and arcs with a compass given the radius or diameter				
I recognise the symbol for pi				
I can use the formula for the circumference of a circle				118
I can use the formula for area of a circle				117
I can calculate with exact values (multiples of pi)				
I can find the perimeters and areas of semicircles and quarter circles				

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Assessment 3b– Mid May



This assessment looks at graphs, algebra and transformations

For algebra and graphs students' develop their understanding of linear graphs looking at the format of the equation of a straight line and especially the gradient. This is linked to work on speed, distance time graphs. Students also look at how inequalities can be represented on a number line.

The transformations work builds on the informal transformations taught in Year 7 and 8 to look at the formal method for translating, reflecting and rotating shapes on coordinate axes.

Inequalities				
I recognise the symbols for identify and inequalities				
I can show inequalities on a number line				138
Algebra and Graphs				
I can draw the line $y = 3$ or $x = -2$ and other lines parallel to these				A5
I can draw the lines $y = x$ and $y = -x$				
I can draw lines such as $y = 2x + 2$				96
I recognise the form of the equation of a line: $y = mx + c$				159a
I can interpret the meaning or significance of the gradient and y-intercept of a linear graph				
I find the gradient and y-intercept of a line from a graph and from a linear equation				97
I can find the equation of lines parallel or perpendicular to a given line				208
I can recognise graphs for linear, quadratic, exponential and reciprocal functions.				
I can use a table of values to produce a quadratic graph from an equation				98
Distance/Speed/Time				
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				216b
Transformations				
I can reflect a shape given a line of reflection on a pair of coordinate axes				48
I can describe a reflection presented on a pair of coordinate axes				48
I can translate a shape on a pair of coordinate axes				50
I can describe a translation presented on a pair of coordinate axes				50
I can rotate a shape about a point on a pair of coordinate axes				49
I can describe a rotation about a point on a pair of coordinate axes				49