

# Year 7 Aspiring Foundation (sets 7-5, 7(5))



**CHESTERTON  
COMMUNITY COLLEGE**

Assessment 1a – End of half term 1

This assessment is on number skills.

Students are assessed on their basic arithmetic skills using the four operations of addition, subtraction, multiplication and division on both positive and negative whole numbers. Students are assessed on their ability to order numbers, both positive and negative, up to two decimal places and their ability to round numbers.

Students look at the properties of numbers including their factors and multiples, with a special focus on prime numbers. In addition students are required to understand how to evaluate a mathematical expression by doing the calculations in the correct order.

	😊	😐	😞	Maths Watch
<b>Calculations with Positive and Negative Numbers</b>				
I can use written methods to add and subtract positive whole numbers				N19a
I can use written methods to multiply two or three digit whole numbers				N19a
I understand the rules for adding and subtracting negative numbers				N15a, N19b
I understand the rules for multiplying and dividing negative numbers				N6, N16, N19b
I can multiply and divide whole numbers and decimal numbers by 10, 100, 1000				N27a, N17b
I can evaluate expressions using the laws of BIDMAS				N20
<b>Understanding the Properties of Numbers</b>				
I can find the multiples of a number				N11
I can find all the factors of a number				N10
I can find the highest common factor of two numbers				N31a
I can find the lowest common multiple of two numbers				N31b
I can identify prime numbers (numbers with exactly 2 factors)				N30a
I can write numbers as prime numbers multiplied together (the product of its prime factors)				N30b
I know the square numbers up to 100 and can use them to estimate square roots				N25
I know the cube numbers up to 100 and can use them to estimate cube roots				N25
I can find the multiples of a number				N11
I can find all the factors of a number				N10
I can find the highest common factor of two numbers				N31a
I can find the lowest common multiple of two numbers				N31b
<b>Ordering Numbers</b>				
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
<b>Rounding</b>				
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 round numbers to assist in approximating a calculation				N34a, N34b

# Year 7 Aspiring Foundation (sets 7-5, 7(5))



Assessment 1b – End of half term 2

**CHESTERTON  
COMMUNITY COLLEGE**

This assessment is on simplifying and manipulating algebraic expressions and on fractions.

Students are taught the difference between a term, expression and formula and are shown how to simplify expressions by collecting terms and expressions by using index laws. Students are also shown how to expand and factorise single brackets and how to write and evaluate expressions using the correct order of operations (BIDMAS).

For fractions, students look at how to carry out arithmetic with all 4 maths operations and the relationship between fractions and decimals. They will work with mixed numbers and use equivalent fractions to compare and order fractions.

	😊	😐	😞	Maths Watch
<b>Using and writing formulae</b>				
I can use a number machine to find outputs for specific inputs				N26
I can use inverse operations to find the input of a number machine from the output				N26
I can identify the variables in a formula				A2
I can substitute numbers into a two-step formula expressed in words				A10
I can substitute numbers into a two-step formula expressed in symbols				A10
<b>Simplifying algebraic expressions</b>				
I understand the terms: expression, term, equation, formula and identity				A2
I understand the difference between an equation, a formula and an 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 understand that $2(3 + 4) = 2 \times 3 + 2 \times 4$				A8
I can expand single brackets				A8
<b>Fractions</b>				
I can use fraction notation to describe parts of shapes or wholes				N23a
I can find equivalent fractions				N23b
I can use equivalent fractions to compare and order fractions				N23b
I can describe amounts using fraction notation				R3



**CHESTERTON  
COMMUNITY COLLEGE**

I can find a fractional amount				N33
I can simplify fractions				N23b/c
I can recognise fractions bigger than one and write them as a mixed-number				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 a whole number by a fraction				N37a
I can multiply fractions				N42a
I can divide a whole number by a fraction				N37b
I can add and subtract mixed numbers				N41

# Year 7 Aspiring Foundation (sets 7-5, 7(5))



**CHESTERTON  
COMMUNITY COLLEGE**

## Assessment 2a – End of half term 3

This assessment is on calculations, sequences and plotting graphs.

A sequence in mathematics is a number pattern. Students need to be able to recognise different kinds of sequences; in particular Arithmetic sequences. They will be assessed on their ability to describe sequences using a term-to-term rule and a position-to-term ('n'th term rule), with a particular focus on finding and using the position-to-term rule for Arithmetic Sequences.

Students will then learn to plot sequences on coordinate axes involving with a focus on plotting linear sequences and the formal notation connected with linear equations.

The calculations part of the assessment reviews the work from term 1a: basic arithmetic skills involving all four operations and is extended to include arithmetic with decimal numbers.

	😊	😐	😞	Maths Watch
I can describe how a single step sequence is created in words Eg Goes up 3 each time, Doubles				A11a
I can find the next term in a sequence by recognising the pattern so far Eg 10, 7, 4, 1, .....				A11a
I can create a sequence using a simple rule described in words or using a number machine				N26
I can find the first few terms of a linear sequence using a formula for the position to term ('n'th term) rule Eg Find the first 5 numbers in the sequence $2n + 3$				A11b
I can find the first few terms of a more general sequence using a formula for the position to term ('n'th term) rule Eg Find the first 5 numbers in the sequence $n^2 - 1$				102
I can find a term in a sequence given its position in the sequence				A11b
I can find the position to term rule ('n'th term) rule for a linear sequence				A11c
I can solve a real life problem based around a real life sequence				A11c
I can recognise the following non-linear sequences: Square numbers, Triangular numbers, Cube numbers, Fibonacci style sequences				A22,141,N25
I can describe how a single step sequence is created in words Eg Goes up 3 each time, Doubles				A11a
I can find the next term in a sequence by recognising the pattern so far Eg 10, 7, 4, 1, .....				A11a
I can create a sequence using a simple rule described in words or using a number machine				N26
I can find the first few terms of a linear sequence using a formula for the position to term ('n'th term) rule Eg Find the first 5 numbers in the sequence $2n + 3$				A11b
<b>Coordinates and graphs</b>				
I can read coordinates in the positive quadrant				A1a
I can read coordinates in all four quadrants				A1b
I can plot coordinates in the positive quadrant				A1a
I can plot coordinates in all four quadrants				A1b
I can draw my own coordinate axes to plot coordinates				
I can read values from a line graph that has been drawn for me				
I can read values from a straight line graph to solve a real-life problem				A21b
I can complete a table of values for a linear equation using positive number inputs				A14a



**CHESTERTON  
COMMUNITY COLLEGE**

I can complete a table of values for a linear equation using both positive and negative numbers				A14a
I can plot a graph of a linear equation. Eg Plot the graph of $y = 2x + 1$				A14a
<b>Decimal Arithmetic</b>				
I can add and subtract whole numbers				N13a,b
I can compare decimals and order them				N2b
I can recognise equivalent fractions to given decimals				N32
I can multiply a whole number by multiples of ten eg $6 \times 30$ without a calculator				
I can multiply a two digit whole number by another two digit whole number without a calculator				N15
I can divide a whole number by a single digit without a calculator				N16
I can add decimal numbers without a calculator				N13a,b
I can subtract decimal numbers without a calculator				N14b
I can multiply decimal numbers without a calculator				N15b
I can divide decimal numbers without a calculator				N29b

# Year 7 Aspiring Foundation (sets 7-5, 7(5))



**CHESTERTON  
COMMUNITY COLLEGE**

## Assessment 2b – End of half term 4

This assessment is on probability and geometry

For probability students will be assessed on their understanding of how to calculate the probability that a single event happens using both theoretical and experimental techniques. They will be expected to be aware that experimental techniques are generally more accurate if more trials are conducted. For more complex probabilities involving two events, students will be taught to list outcomes in a systematic way.

Geometry is the study of shapes and their properties. Students will look at the names and properties of polygons, with a focus on their symmetry. They will also look at how to find the area and perimeter of a rectangle and a triangle.

	😊	😐	😞	Maths Watch
<b>Measures</b>				
I can accurately read and interpret a scale				N8
I can calculate a difference between times				N7b
I know the basic metric measurements for length, weight and capacity				N7a
I can convert between metric units for length, weight and capacity				R2
<b>Area and Perimeter</b>				
I can describe triangles as being either equilateral, isosceles or scalene				G16
I can describe quadrilaterals as being either a: square, rectangle, parallelogram, trapezium, rhombus or dart				G14
I understand that area is used to measure the space inside a 2d shape				G9
I can estimate the area of a shape by dividing it into squares and counting				G9
I can calculate the area of a square and a rectangle				G20a
I can calculate the area of a triangle				G20c
I can calculate the area of shapes made from several rectangles/triangles				G24
I can find the perimeter of shapes				G8a/b
I understand that shapes with a large perimeter may not always have a large area				
<b>Probability</b>				
I understand that probabilities take a value between 0 and 1 and can use the probability scale				P1
I understand that probabilities are always given as a fraction, decimal or percentage				P1
I can estimate the likelihood of an outcome (the relative probability) using experimental data				P7
I can systematically list all the outcomes for a single event				P2a
I can calculate the probability of a single event happening by listing equally likely events				P2a
I can systematically list all of the outcomes for a combined event and use it to calculate a probability				P2b

# Year 7 Aspiring Foundation (sets 7-5, 7(5))



**CHESTERTON  
COMMUNITY COLLEGE**

Assessment 3a – End of half term 5

This assessment is on algebra and geometry.

The equations part of the assessment builds on the work on writing expressions from term 1a and assesses the student's ability to solve equations. Initially this is through using inverse operations before using more advanced techniques based on 'the balancing' method to rearrange equations.

Students are expected to have a protractor so that they can measure and draw angles accurately. This unit assesses students on angle facts connected with angles at a point on a straight line and around a point in space. Students also need to use angle facts for the sum of the internal angles in a triangle and quadrilateral. They are expected to use mathematical reasoning to solve problems without measuring with a protractor and to be able to classify triangles and quadrilaterals by their angle properties.

<b>Solving Equations</b>				
I can evaluate an expression by substituting values				A10
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.				A17
I can solve linear equations where the unknown appears on both sides of the equation Eg $3x - 1 = x + 7$				135
I can use trial and improvement to find the solution to more complex, equations				A25
I can rearrange an equation to make a new variable the subject				A13
<b>Angles</b>				
I can use a protractor to measure an angle of any size to the nearest degree				G10b
I can use a protractor to draw an angle of any size to the nearest degrees				G10c
I can classify angles as either acute, obtuse, reflex or right angled				G10a
I can describe triangles as being either equilateral, isosceles or scalene				G16
I can describe quadrilaterals as being either a: square, rectangle, parallelogram, trapezium, rhombus or dart				G14
I know and can use fact the total of the angles around a point add up to $360^\circ$				G13
I know and can use fact the total of the angles around a point on a straight line add up to $180^\circ$				G13
I know and can use fact the total of the angles in a triangle always add up to $180^\circ$				G13,G16,G17
I know and can use fact the total of the angles in a quadrilateral always add up to $360^\circ$				G14

# Year 7 Aspiring Foundation (sets 7-5, 7(5))



**CHESTERTON  
COMMUNITY COLLEGE**

## Assessment 3a – End of half term 6

This assessment is on statistics and ratio.

Statistics is the study and use of data. Students are assessed on their ability to collect and manipulate data in an unbiased form ready for mathematical processing. Students need to be able to use averages to compare data sets and need to understand why there are several types of average available to use. In addition to this students need to be able to interpret data presented as graphs and draw the most appropriate graph to illustrate data. Students should be able to provide reasons for their choices regarding the types of average used and the types of graphs selected.

The topic on ratio introduces the idea of ratio and looks at the differences between ratio and fraction notation. How to describe things using ratio notation and equivalent ratios. Students will solve problems relating to sharing into given ratios.

	😊	😐	😞	Maths Watch
<b>Averages and Range</b>				
I can find the mean of a list of numbers				S6,S7
I can find the mode of a list of numbers				S6,S7
I can find the median of a list of numbers				S6,S7
I can find the mode for data presented in a frequency table				S10a
I can find the median for data presented in a frequency table				S10a
I understand why we have three different ways to calculate an average and can choose the most appropriate one in a given context				62
I can use either the mean, mode or median to compare the size of two sets of data				62
Given the mean/mode/median for a set of data I can solve problems that require me to work backwards to find the original data values				62
<b>Representing Discrete Data as a Graph</b>				
I can draw and interpret a pictogram				S1a,S1b
I can read and interpret a bar chart				S2a
I can read and interpret a dual chart				S2b
I can read a compound bar chart				S2
I can draw a bar chart				S2b
I can draw a dual bar chart				
I can draw a compound bar chart				
I can read a pie chart				S9
I can construct a pie chart				S9
I understand the advantage/disadvantages of drawing a bar chart or pie chart to represent discrete data				
<b>Ratio</b>				
I can describe the relationship between two or more parts of a whole as a ratio				R1a,R1b
I can recognise equivalences in fractions and ratios				N23b
I can shade parts of shapes to represent ratios				R1a





I can find equivalent ratios and simplify ratios including different units or ratios written as decimals			R5a
I understand the relationship between writing amounts as a ratio and a fraction			103
I can share an amount into two or three parts in a given ratio			R5b
I can use a ratio to find the value of one part when another part is known			R5b

**CHESTERTON**  
**COMMUNITY COLLEGE**