



# THE ARNEWOOD SCHOOL KEY STAGE 4 MATHS



## Implementation:

Students in set 1, 2 and 3 will be entered into the higher tier exam

Students in sets 4, 5 and 6 will be entered into the foundation tier exam

## Year 9

### Pathway A – Aiming for GCSE grades 7, 8 and 9

Half term	Curriculum focus	Landmark assessment
Autumn 1	Distance-Time Velocity-Time Simple SUVAT equations	Students will be given an assessment on all work covered in Aut 1
Autumn 2	Proportion Similar shapes Area and Volume scale factor	Students will be given an assessment on all work covered in Aut 1 & Aut 2
Spring 1	Upper and Lower bounds Quadratic formula Fractional/Negative Indices Rearranging formula	Students will be given an assessment on all work covered since September
Spring 2	Scatter graphs Venn Diagrams Averages	Students will be given a non-calculator and calculator assessment on all work covered to date. Formal assessment in the hall.
Summer 1	Surds Exact trig values Sin and Cos rule Segments	No assessment Teacher own assessment
Summer 2	Quadratic inequalities Algebraic fractions Quadratic simultaneous equations	Students will be given a Non Calculator and Calculator assessment on all topics covered in year 7

All questions used in assessments will be real, appropriately challenging, GCSE questions and will aim to prepare students for the GCSE exams.





Co-Curricular:

Students are invited to take part in the Junior Maths Challenge

**Year 10**

<b>Half term</b>	<b>Curriculum focus</b>	<b>Landmark assessment</b>
Autumn 1	Quadratic sequences Functions Iterations	Students will be given an assessment on all work covered in Aut 1
Autumn 2	Circle Theorems Equations of tangents 3D Pythagoras	Students will be given an assessment on all work covered in Aut 1 & Aut 2
Spring 1	Completing the Square Column vectors	Students will be given an assessment on all work covered since September
Spring 2	Vectors Proof Congruency	Students will be given a non-calculator and calculator assessment on all work covered to date. Formal assessment in the hall.
Summer 1	Sin, Cos, Tan graphs Equations of circles Graph transformations	No assessment Teacher own assessment
Summer 2	Cumulative Frequency Box and Whiskers Histograms Transformations	Students will be given a Non Calculator and Calculator assessment on all topics covered in year 7
All questions used in assessments will be real, appropriately challenging, GCSE questions and will aim to prepare students for the GCSE exams.		

Co-Curricular:

Students are invited to take part in the Junior Maths Challenge

**Year 11**

Students will be given weekly GCSE style assessments in lessons.  
Students will be given a formal mock exam in November and March.





Students will be issued with examination booklets of past papers.  
Students will be invited to attend a regular Wednesday afterschool revision session.  
Teachers will be responding to weekly home works and tests to plan appropriate lessons.  
There will also be a focus on multi staged questions linking topics together.

Teachers structure year 11 lessons using the topic overview below as guidelines for what should be studied as way of revision.

## Number

Topic	Grade 3	Grade 5	Grade 7	Grade 9
HCF, LCM and PPF	✓	✓	✓	✓
Laws of Indices	✓	✓	✓	✓
Rounding	✓	✓	✓	✓
BIDMAS	✓	✓	✓	✓
Sharing in a Ratio	✓	✓	✓	✓
Recipe Questions	✓	✓	✓	✓
% of an amount	✓	✓	✓	✓
% Increase and Decrease	✓	✓	✓	✓
F.D.P	✓	✓	✓	✓
Fractions		✓	✓	✓
Standard Form		✓	✓	✓
Rounding and Estimation		✓	✓	✓
Reverse percentages		✓	✓	✓
Error Intervals		✓	✓	✓
Proportion		✓	✓	✓
Compound Interest		✓	✓	✓
Surds			✓	✓
Calculations with bounds			✓	✓
Proportion - Direct and Inverse notation			✓	✓

## Algebra

Topic	Grade 3	Grade 5	Grade 7	Grade 9
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nth term	✓	✓	✓	✓
Drawing linear graphs	✓	✓	✓	✓
Expand and Factorise single brackets	✓	✓	✓	✓
Solve linear equations	✓	✓	✓	✓
Solve linear inequalities	✓	✓	✓	✓
Substitution	✓	✓	✓	✓
Drawing quadratic graphs		✓	✓	✓
Expand double brackets		✓	✓	✓
Factorise quadratics		✓	✓	✓
Rearrange formulaw		✓	✓	✓
Solve linear simultaneous equations algebraically		✓	✓	✓
Solve linear simultaneous equations graphically		✓	✓	✓
Graphical inequalities and regions		✓	✓	✓
$y=mx+c$		✓	✓	✓
Parallel and perpendicular lines			✓	✓
Transformations of graphs			✓	✓
Simplify algebraic fractions			✓	✓
Solve algebraic fractions			✓	✓
Solve quadratic inequalities			✓	✓
Rearranging involving factorising			✓	✓
Equations of circles and tangents			✓	✓
Iteration			✓	✓
Quadratic and Geometric Sequences				✓
Completing the Square			✓	✓
Functions			✓	✓
Functions - inverse				✓
Algebraic proof				✓
Solve quadratic simultaneous equations				✓
Expand more than two brackets			✓	✓

## Shape, Space, Measure





Topic	Grade 3	Grade 5	Grade 7	Grade 9
Parallel lines and polygons	✓	✓	✓	✓
Construct a triangle	✓	✓	✓	✓
Bearings	✓	✓	✓	✓
Transformations	✓	✓	✓	✓
Circles	✓	✓	✓	✓
Perimeter and Area	✓	✓	✓	✓
Volume and Surface area of prisms	✓	✓	✓	✓
Speed, Distance, Time	✓	✓	✓	✓
Loci		✓	✓	✓
Constructions		✓	✓	✓
Pythagoras		✓	✓	✓
Trigonometry		✓	✓	✓
Area and perimeter of sectors		✓	✓	✓
Volume and Surface area of cones and spheres		✓	✓	✓
Similar shapes - Length, Area and Volume		✓	✓	✓
Congruent Shapes		✓	✓	✓
Distance-Time Graphs		✓	✓	✓
Velocity-Time Graphs		✓	✓	✓
Velocity-Time Graphs - Linear Distance and Acceleration		✓	✓	✓
Velocity-Time Graphs - Non-Linear Distance and Acceleration			✓	✓
Bearings and Scale Drawings		✓	✓	✓
Vectors		✓	✓	✓
Circle Theorems			✓	✓
Advanced Trigonometry			✓	✓
3D Pythagoras and Trigonometry			✓	✓
Circle Theorems Proof				✓
Area under graphs				✓





## Handling

Topic	Grade 3	Grade 5	Grade 7	Grade 9
Averages	✓	✓	✓	✓
Scatter Graphs	✓	✓	✓	✓
Probability	✓	✓	✓	✓
Pictograms	✓	✓	✓	✓
Stem and Leaf	✓	✓	✓	✓
Pie Charts	✓	✓	✓	✓
Averages from tables and Grouped Data		✓	✓	✓
Sampling		✓	✓	✓
Probability Trees - independent		✓	✓	✓
Probability Trees - dependent		✓	✓	✓
Venn Diagrams		✓	✓	✓
Set Notation		✓	✓	✓
Cumulative Frequency			✓	✓
Box Plots			✓	✓
Histograms			✓	✓
Probability - Set Theory			✓	✓

