

GCSE Maths

June 2019

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Mathematics KS4 Leader

DURRINGTON HIGH SCHOOL

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GCSE Maths 2019

- AQA Maths 8300
- No controlled assessment
- Consists of three papers of equal weighting (80 marks each)
- Higher and Foundation tiers of entry
- Paper 1 is non calculator (1.5 hours)
- Paper 2 & 3 are both calculator (both 1.5 hours)
- Graded 9 – 1
- 7 lessons per fortnight



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Assessments

- Assessment dates
 - WB 5th November (1 paper – Calculator allowed)
 - WB 25th February (1 paper – Calculator allowed)
 - WB 17rd June (3 papers – 1 non calculator and 2 calculator allowed)



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Topics Covered

Autumn Term

- Number - Rounding and HCF and LCM
- Algebra – Expressions, Equations & Sequences
- Shape and Space – Area and perimeter & Angles

Spring Term

- Number – Ratio & Proportion, Fractions & Percentages, Standard Form
- Algebra – Graphs
- Shape & Space – Pythagoras' & Trigonometry
- Handling Data – Collecting data & Statistical measures



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Topics Covered

Summer term

Algebra – Inequalities & Equations

Shape & Space – Transformations, Real life graphs

Handling Data - Probability



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Knowledge Organisers

- Attached to each homework on Connect for students to access.
- Explains keywords, key facts that students need to learn and key concepts to help with homework.
- Also on the VLE

Year 10 Expressions Higher

Key Words	Key Concepts																																																		
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Put brackets into an expression by removing a common factor.</td></tr> <tr><td>Rearrange (Change the subject)</td><td>So that another variable is the subject.</td></tr> <tr><td>Coefficient</td><td>The number you multiply a variable by.</td></tr> <tr><td>Quadratic</td><td>An expression in the form $ax^2 + bx + c$</td></tr> <tr><td>Substitute</td><td>Putting numbers where the letters are.</td></tr> <tr><td>Algebraic fraction</td><td>Expressions in the form of a fraction eg $\frac{2a + 5}{3b}$</td></tr> </table>	Variable	A symbol for a number we don't know yet (usually a letter).	Term	a 'part' of an expression separated by an add or subtract. EG $2a + 4b$ - has two terms	Like terms	Terms that contain identical variables.	Expression	Terms grouped together with additions and subtractions to show the value of something.	Simplify Expressions	Writing an expression shorter or in an easier to use form often by collecting like terms.	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Algebraic fraction	Expressions in the form of a fraction eg $\frac{2a + 5}{3b}$	<p>Simplifying Multiplying and Dividing:</p> <p>$a \times b = ab$ - you can multiply algebra that are in different families</p> <p>$a^2 \times a^3 = a^5$ - when we multiply with powers, we add them</p> <p>$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c}$ - we do not use the division (\div) symbol in algebra, we write divisions as fractions</p> <p>$a^2 \div a^3 = a^{-1}$ - when we divide with powers, we subtract them</p> <p>$\frac{10a^5}{5} = 2a^5$ - when there are co-efficients we treat them 'normally', we multiply or divide as we would if the algebra was not there</p> <p>$x^2(x + 3) = x^3 + 3x^2$ - when expanding brackets with indices we use the same rules as when we multiply indices.</p> <hr/> <p>Substitution We put numbers where the letters</p> <table style="width: 100%; border: none;"> <tr> <td style="border: 1px solid black; padding: 2px;"> Find A when $b = 5$ & $h = 6$ $A = b^2 + h$ $A = 5^2 + 6$ $A = 25 + 6$ $A = 31$ </td> <td style="border: none; padding: 2px;"> Use the formula $F = 1.8c + 32$ when $C = 17$ $F = 1.8 \times 17 + 32$ $F = 30.6 + 32$ $F = 62.6$ </td> <td style="border: 1px solid black; padding: 2px;"> Find b when $A = -32$ $A = b - 27$ $-32 = b - 27$ $+ 27$ $-5 = b$ </td> </tr> </table> <hr/> <p>Rearrange (Change the subject) When we rearrange, we use the same method as when we solve equations by balancing both sides and doing the 'inverse'</p> <p>Rearrange to make y the subject:</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none; padding: 2px;">$x + y = h$</td> <td style="border: none; padding: 2px;">$x + 4 = by$</td> </tr> <tr> <td style="border: none; padding: 2px;">$a + y = h$</td> <td style="border: none; padding: 2px;">$x - 4 = by$</td> </tr> <tr> <td style="border: none; padding: 2px;">$h = h$</td> <td style="border: none; padding: 2px;">$+ b = + b$</td> </tr> <tr> <td style="border: none; padding: 2px;">$\frac{h}{b} = h$</td> <td style="border: none; padding: 2px;">$\frac{h}{b} = y$</td> </tr> </table> <hr/> <p>Expanding</p> <table style="width: 100%; border: none;"> <tr> <td style="border: 1px solid black; padding: 2px;"> Single $2(p + 3)$ $2p + 6$ </td> <td style="border: 1px solid black; padding: 2px;"> Two single $3(x + 2) - 5(2x + 1)$ $3x + 6 - 10x - 5$ $-7x + 1$ </td> <td style="border: 1px solid black; padding: 2px;"> FOIL $(x - 5)(x - 7)$ $x^2 - 7x + 35 - 21$ $x^2 - 7x + 14$ </td> <td style="border: 1px solid black; padding: 2px;"> Grid $(p + 3)(p - 7)$ <table style="border-collapse: collapse; text-align: center;"> <tr><td style="border: 1px solid black; padding: 2px;">p^2</td><td style="border: 1px solid black; padding: 2px;">$-7p$</td><td style="border: 1px solid black; padding: 2px;">$+3p$</td><td style="border: 1px solid black; padding: 2px;">-21</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">p^2</td><td style="border: 1px solid black; padding: 2px;">$-7p$</td><td style="border: 1px solid black; padding: 2px;">$+3p$</td><td style="border: 1px solid black; padding: 2px;">-21</td></tr> </table> </td> </tr> </table> <p>$\frac{2}{3}(8x + 6) + \frac{1}{5}(9x + 12) = 4x + 3 + 3x + 4 = 7x + 7$</p> <hr/> <p>Factorising</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none; padding: 2px;"> One common factor Factorise $12x - 18y$ $HCF = 6$ $= 6(2x - 3y)$ </td> <td style="border: none; padding: 2px;"> Two common factors Factorise $3x^2 + 2x$ $HCF = x$ $= x(3x + 2)$ </td> <td style="border: none; padding: 2px;"> Quadratic $x^2 + 5x + 6 = 0$ Sum = 5 Product = 6 $= (x + 2)(x + 3)$ </td> </tr> </table>	Find A when $b = 5$ & $h = 6$ $A = b^2 + h$ $A = 5^2 + 6$ $A = 25 + 6$ $A = 31$	Use the formula $F = 1.8c + 32$ when $C = 17$ $F = 1.8 \times 17 + 32$ $F = 30.6 + 32$ $F = 62.6$	Find b when $A = -32$ $A = b - 27$ $-32 = b - 27$ $+ 27$ $-5 = b$	$x + y = h$	$x + 4 = by$	$a + y = h$	$x - 4 = by$	$h = h$	$+ b = + b$	$\frac{h}{b} = h$	$\frac{h}{b} = y$	Single $2(p + 3)$ $2p + 6$	Two single $3(x + 2) - 5(2x + 1)$ $3x + 6 - 10x - 5$ $-7x + 1$	FOIL $(x - 5)(x - 7)$ $x^2 - 7x + 35 - 21$ $x^2 - 7x + 14$	Grid $(p + 3)(p - 7)$ <table style="border-collapse: collapse; text-align: center;"> <tr><td style="border: 1px solid black; padding: 2px;">p^2</td><td style="border: 1px solid black; padding: 2px;">$-7p$</td><td style="border: 1px solid black; padding: 2px;">$+3p$</td><td style="border: 1px solid black; padding: 2px;">-21</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">p^2</td><td style="border: 1px solid black; padding: 2px;">$-7p$</td><td style="border: 1px solid black; padding: 2px;">$+3p$</td><td style="border: 1px solid black; padding: 2px;">-21</td></tr> </table>	p^2	$-7p$	$+3p$	-21	p^2	$-7p$	$+3p$	-21	One common factor Factorise $12x - 18y$ $HCF = 6$ $= 6(2x - 3y)$	Two common factors Factorise $3x^2 + 2x$ $HCF = x$ $= x(3x + 2)$	Quadratic $x^2 + 5x + 6 = 0$ Sum = 5 Product = 6 $= (x + 2)(x + 3)$
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VLE

The screenshot displays the VLE interface for Durrington High School. At the top left is the school's logo, a seahorse, and the name "DURRINGTON HIGH SCHOOL". To the right of the logo are navigation links for "Duty", "Student Indicators", and "Profile". Below these are search boxes for "People Search" and "Search Connect" with a "GO!" button. A secondary navigation bar contains icons for "Home", "Resources", "Homework", "Calendar", and "Rewards & Expectations", along with a star icon, a shopping bag icon, and a notification icon with a red "1". The main content area shows a breadcrumb trail "Resources > Maths" and a grid of eight yellow folder icons. The folders are labeled: "Grade 1-3", "Grade 4-5", "Grade 6-9", "Past Papers", "Predicted Paper 2 Questions", "Predicted Paper 3 Questions", "Useful revision websites", and "Year 9".



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Revision

- VLE
- MathsGenie.co.uk
- CorbettMaths.com (5-a-day)
- Mymaths.co.uk (User: durrington, Pass: circle)
- Pixl Maths App
- Revision guides available to buy at a cost of £5 (available from Mr Borrett in G18M)



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- Who can I contact?
- Childs maths teacher
- Shane Borrett – sborrett1@durring.com
- Kate Blight – kblight@durring.com



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