

YEAR 10 MATHEMATICS Real numbers

|      | Lesson Aim  | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|------|---|---------------------------------|-------------------------|----------------------------|
| 1    | Ex 3A P102 Understanding rational and irrational numbers      |                                 |                         |                            |
| 2,3  | Ex 3B P110 Surd Laws - Multiplication & division              |                                 |                         |                            |
| 4    | Ex 3C P 116 Simplifying surds                                 |                                 |                         |                            |
| 5    | Ex 3D P 122 - Addition & subtraction of surds                 |                                 |                         |                            |
| 6    | Ex 3D P 122 - Expansion of brackets with surds                |                                 |                         |                            |
| 7    | Ex 3E P128 Writing Surd Fractions with a rational denominator |                                 |                         |                            |
| 8    | Review of Indices   |                                 |                         |                            |
| 9,10 | Ex 3F P134 Negative & Fractional indices                      |                                 |                         |                            |
| 11   | Ex 3G P140 Logarithms   |                                 |                         |                            |
| 12   | Ex 3H Logarithmic laws (addition/subtraction)                 |                                 |                         |                            |
| 13   | Ex 3H Solving Indicial equations                              |                                 |                         |                            |
| 14   | Revision - Chapter review P152                                |                                 |                         |                            |
| 15   | Test  |                                 |                         |                            |

YEAR 10 MATHEMATICS – Number & Algebra – Patterns & Algebra

YEAR 10 MATHEMATICS Indices

|   | Lesson Aim                  | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|-----------------------------|---------------------------------|-------------------------|----------------------------|
| 1 | Review of indices P1        |                                 |                         |                            |
| 2 | Negative indices P7         |                                 |                         |                            |
| 3 | Fractional indices P12      |                                 |                         |                            |
| 4 | Combining index laws P17    |                                 |                         |                            |
| 5 | Chapter Review p 73<br>Test |                                 |                         |                            |

YEAR 10 MATHEMATICS Linear algebra

|   | Lesson Aim   | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|--|---------------------------------|-------------------------|----------------------------|
| 1 | Substitutions P29  |                                 |                         |                            |
| 2 | Adding & subtracting algebraic fractions P3                          |                                 |                         |                            |
| 3 | Multiplying & dividing algebraic fractions P37                       |                                 |                         |                            |
| 4 | Solving linear equations P40   |                                 |                         |                            |
| 5 | Solving equations with algebraic fractions and multiple brackets P45 |                                 |                         |                            |
| 6 | Chapter Review p 73<br>Test  |                                 |                         |                            |

YEAR 10 MATHEMATICS Coordinate geometry

|   | Lesson Aim   | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|--|---------------------------------|-------------------------|----------------------------|
| 1 | Sketching linear graphs P57                            |                                 |                         |                            |
| 2 | Sketching linear graphs continued                      |                                 |                         |                            |
| 3 | Determining linear equations P64                       |                                 |                         |                            |
| 4 | The distance between two points on a straight line P68 |                                 |                         |                            |
| 5 | The midpoint of a line segment P71                     |                                 |                         |                            |
| 6 | Parallel and perpendicular lines P 74                  |                                 |                         |                            |
| 7 | Chapter review<br>Test                                 |                                 |                         |                            |

YEAR 10 MATHEMATICS Simultaneous linear equations and inequations

|   | Lesson Aim  | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|---|---------------------------------|-------------------------|----------------------------|
| 1 | Graphical solutions of simultaneous linear equations P 91 |                                 |                         |                            |

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|---|--|--|--|--|
| 2 | Solving simultaneous linear equations using substitution P96 |  |  |  |
| 3 | Solving simultaneous linear equations using elimination P99  |  |  |  |

YEAR 10 MATHEMATICS Trigonometry 1

|   |  |  |  |  |
|---|--|--|--|--|
| 4 | Problem solving using simultaneous linear equations P103 |  |  |  |
| 5 | Solving linear inequations P106                          |  |  |  |
| 6 | Sketching linear inequations P110                        |  |  |  |
| 7 | Solving simultaneous linear inequations P116             |  |  |  |
| 8 | Chapter review<br>Test                                   |  |  |  |

|   | Lesson Aim  | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|---|---------------------------------|-------------------------|----------------------------|
| 1 | Pythagoras theorem P133                           |                                 |                         |                            |
| 2 | Pythagoras theorem in 3D P140                     |                                 |                         |                            |
| 3 | Trigonometric ratios P 145                        |                                 |                         |                            |
| 3 | Using trigonometry to calculate side lengths P151 |                                 |                         |                            |
| 4 | Using trigonometry to calculate angle size P156   |                                 |                         |                            |
| 5 | Angles of elevation and depression P161           |                                 |                         |                            |
| 6 | Bearing & compass directions P165                 |                                 |                         |                            |
| 7 | Applications P172                                 |                                 |                         |                            |
| 8 | Summary Revision p246<br>Chapter Review p248      |                                 |                         |                            |
| 9 | Test  |                                 |                         |                            |

YEAR 10 MATHEMATICS Surface area & volum

|   | Lesson Aim              | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|-------------------------|---------------------------------|-------------------------|----------------------------|
| 1 | Area P185               |                                 |                         |                            |
| 2 | Total surface area P193 |                                 |                         |                            |
| 3 | Volume P203             |                                 |                         |                            |
| 4 | Chapter review<br>Test  |                                 |                         |                            |

YEAR 10 MATHEMATICS Quadratic expressions

|   | Lesson Aim  | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|---|---------------------------------|-------------------------|----------------------------|
| 1 | Expanding algebraic expressions P221                |                                 |                         |                            |
| 2 | Factorising expressions with three unknowns P227    |                                 |                         |                            |
| 3 | Factorising expressions with two or four terms P231 |                                 |                         |                            |
| 4 | Factorising by completing the square P236           |                                 |                         |                            |
| 5 | Mixed factorisation P 240                           |                                 |                         |                            |
| 6 | Chapter review                                      |                                 |                         |                            |
| 7 | Test  |                                 |                         |                            |

YEAR 10 MATHEMATICS Quadratic equations

|   | Lesson Aim   | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|--|---------------------------------|-------------------------|----------------------------|
| 1 | Solving quadratic equations P 249  |                                 |                         |                            |
| 2 | The quadratic formula P255   |                                 |                         |                            |
| 3 | Solving quadratic equations by inspecting graphs P258                              |                                 |                         |                            |
| 4 | Finding solutions to quadratic equations (interpolation and the discriminant) P263 |                                 |                         |                            |
| 5 | Solving a quadratic equation and a linear equation simultaneously P269             |                                 |                         |                            |
| 6 | Chapter review   |                                 |                         |                            |
| 7 | Test   |                                 |                         |                            |



YEAR 10 MATHEMATICS Functions

|   | Lesson Aim  | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|---|---------------------------------|-------------------------|----------------------------|
| 1 | Plotting parabolas P281                                   |                                 |                         |                            |
| 2 | Sketching parabolas using the basic graph of $y=x^2$ P287 |                                 |                         |                            |
| 3 | Sketching parabolas in Turning point form P292            |                                 |                         |                            |
| 4 | Sketching parabolas of the form $y=ax^2+bx+c$ P298        |                                 |                         |                            |
| 5 | Exponential functions and their graphs P306               |                                 |                         |                            |
| 6 | The Hyperbola P312  |                                 |                         |                            |
| 7 | The circle P315   |                                 |                         |                            |
| 8 | Chapter review  |                                 |                         |                            |
| 9 | Test  |                                 |                         |                            |

YEAR 10 MATHEMATICS Deductive geometry

|   | Lesson Aim                                     | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|--|---------------------------------|-------------------------|----------------------------|
| 1 | Congruence review 327                          |                                 |                         |                            |
| 2 | Similarity review P 332                        |                                 |                         |                            |
| 3 | Congruence & proof P336                        |                                 |                         |                            |
| 4 | Quadrilaterals: Definitions & properties P 340 |                                 |                         |                            |
| 5 | Quadrilaterals & proof P344                    |                                 |                         |                            |
| 6 | Chapter review<br>Test                         |                                 |                         |                            |

YEAR 10 MATHEMATICS Probability

|  | Progressing toward the Standard | Working at the Standard | Working above the Standard |
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YEAR 10 MATHEMATICS Univariate data

|   | Lesson Aim                       | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|----------------------------------|---------------------------------|-------------------------|----------------------------|
| 1 | Mesures of Central tendency P431 |                                 |                         |                            |
| 2 | Measures of spread P439          |                                 |                         |                            |
| 3 | Box & whisker plots P444         |                                 |                         |                            |
| 4 | The standard deviation P 449     |                                 |                         |                            |
| 5 | Comparing data sets P454         |                                 |                         |                            |
| 6 | Skewness P 459                   |                                 |                         |                            |
| 7 | Chapter review                   |                                 |                         |                            |
| 8 | Test                             |                                 |                         |                            |

YEAR 10 MATHEMATICS Bivariate data

|   | Lesson Aim                                  | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|---|---------------------------------|-------------------------|----------------------------|
| 1 | Identifying related pairs of variables P474 |                                 |                         |                            |
| 2 | Graphing bivariate data P477                |                                 |                         |                            |
| 3 | Scatterplots P483                           |                                 |                         |                            |
| 4 | Identifying related pairs of variables P474 |                                 |                         |                            |
| 5 | Chapter Review<br>Test                      |                                 |                         |                            |

YEAR 10 MATHEMATICS Financial mathematics

|   | Lesson Aim            | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|-----------------------|---------------------------------|-------------------------|----------------------------|
| 1 | Purchasing goods P539 |                                 |                         |                            |

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|---|---------------------------|--|--|--|
| 2 | Buying on terms P542      |  |  |  |
| 3 | Successive discounts P546 |  |  |  |
| 4 | Compound interest P549    |  |  |  |
| 5 | Depreciation P553         |  |  |  |
| 6 | Loan repayments P556      |  |  |  |
| 7 | Chapter review test       |  |  |  |

YEAR 10 MATHEMATICS Polynomials

|   | Lesson Aim   | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|--|---------------------------------|-------------------------|----------------------------|
| 1 | Polynomial P637                                      |                                 |                         |                            |
| 2 | Adding, subtracting and multiplying polynomials P639 |                                 |                         |                            |
| 3 | Long division of polynomials P641                    |                                 |                         |                            |
| 4 | Polynomial values P647                               |                                 |                         |                            |

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|---|---|--|--|--|
| 5 | The remainder & factor theorems<br>P649 |  |  |  |
| 6 | Factorising polynomials P651            |  |  |  |
| 7 | Solving polynomial equations P655       |  |  |  |
| 8 | Chapter review P861                     |  |  |  |
| 9 | Test                                    |  |  |  |

| YEAR 10 MATHEMATICS Functions & relations |                             |                                 |                         |                            |
|---|-----------------------------|---------------------------------|-------------------------|----------------------------|
|   | Lesson Aim                  | Progressing toward the Standard | Working at the Standard | Working above the Standard |
| 1   | Functions & relations P 665 |                                 |                         |                            |
| 2   | Exponential functions P671  |                                 |                         |                            |
| 3   | Cubic functions P679        |                                 |                         |                            |
| 4   | Quartic Functions P683      |                                 |                         |                            |
| 5   | Transformations P686        |                                 |                         |                            |
| 6   | Chapter review P696         |                                 |                         |                            |
| 7   | Test                        |                                 |                         |                            |





YEAR 10 MATHEMATICS Circle geometry

|   | Lesson Aim                                     | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|--|---------------------------------|-------------------------|----------------------------|
| 1 | Angles in a circle P701                        |                                 |                         |                            |
| 2 | Intersecting chords, secants and tangents P708 |                                 |                         |                            |
| 3 | Cyclic Quadrilaterals P715                     |                                 |                         |                            |
| 4 | Tangents, secants & chords P718                |                                 |                         |                            |
| 5 | Chapter review<br>Test                         |                                 |                         |                            |

YEAR 10 MATHEMATICS Trigonometry 2

|   | Lesson Aim                           | Progressing toward the Standard | Working at the Standard | Working above the Standard |
|---|--------------------------------------|---------------------------------|-------------------------|----------------------------|
| 1 | The sine rule P733                   |                                 |                         |                            |
| 2 | The cosine rule nP741                |                                 |                         |                            |
| 3 | Area of triangles P745               |                                 |                         |                            |
| 4 | The unit circle P749                 |                                 |                         |                            |
| 5 | Trigonometric functions P755         |                                 |                         |                            |
| 6 | Solving trigonometric equations P759 |                                 |                         |                            |
| 7 | Chapter review P764                  |                                 |                         |                            |
| 8 | Test                                 |                                 |                         |                            |