

Revision
Strategies
MATHS
KS5

Exam Structure

| Component | Marks | Duration | Weighting |
|-----------------------|-------|----------|-----------|
| Pure mathematics (01) | 100 | 2 hours | 33⅓% |

The assessment has a gradient of difficulty throughout the paper and consists of a mix of short and long questions.

| | | | |
|--------------------------------------|-----|---------|------|
| Pure mathematics and statistics (02) | 100 | 2 hours | 33⅓% |
|--------------------------------------|-----|---------|------|

The assessment is structured in two sections of approximately 50 marks each: pure mathematics and statistics. Each section has a gradient of difficulty throughout the section and consists of a mix of short and long questions. Some questions will be set on the pre-release data set.

| | | | |
|-------------------------------------|-----|---------|------|
| Pure mathematics and mechanics (03) | 100 | 2 hours | 33⅓% |
|-------------------------------------|-----|---------|------|

The assessment is structured in two sections of approximately 50 marks each: pure mathematics and mechanics. Each section has a gradient of difficulty throughout the section and consists of a mix of short and long questions.

EXAM BOARD - OCR

Assessment Objectives - Year 12 Pure Maths

Unit 1

| CHAPTER 1 – Algebraic Expression (5 hours) | | | |
|--|---|---|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Index laws and Expanding brackets | <ul style="list-style-type: none"> • Multiply and divide integer powers • Expand a single term over brackets and collect like terms • Expand the product of two or three expressions | 1.1, 1.2 |
| 1 | Factorising | <ul style="list-style-type: none"> • Factorise linear, quadratic and simple cubic expressions | 1.3 |
| 1 | Negative and Fractional Indices | <ul style="list-style-type: none"> • Know and use the law of indices for fractions, decimals and negatives | 1.4 |
| 1 | Surds and Rationalising the denominator | <ul style="list-style-type: none"> • Simplify and use the rules of surds • Rationalise the denominator | 1.5, 1.6 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> • Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 1 |
| Assessed homework 1 | | | |

| CHAPTER 2 – Quadratics (7 hours) | | | |
|----------------------------------|---|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Solving quadratic equations | Solving quadratic equations using <ul style="list-style-type: none"> • Factorising • Quadratic formula | 2.1 |
| 1 | Completing the square | <ul style="list-style-type: none"> • Solving quadratics using completing the square | 2.2 |
| 1 | Quadratic graphs | <ul style="list-style-type: none"> • Sketch the graph and find the turning point a quadratic function | 2.4 |
| 1 | The discriminant (no requirement to solve quadratic inequalities at this stage) | <ul style="list-style-type: none"> • Find and interpret the discriminant of a quadratic expressions | 2.5 |
| 1 | Introduce function notation | <ul style="list-style-type: none"> • Read and use $f(x)$ notation when working with function • Students should understand the roots of a function are its solutions | 2.3 |
| 1 | Modelling with Quadratics | <ul style="list-style-type: none"> • Use and apply models that involve quadratic expressions | 2.6 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> • Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 2 |
| Assessed homework 2 | | | |

Non Calculator Assessment – Testing the basics from GCSE (OPTs 1)

| CHAPTER 3 – Equations and Inequalities (7 hours) | | | |
|--|------------------------------------|---|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Linear simultaneous equations | <ul style="list-style-type: none"> Solve simultaneous equations using elimination or substitution | 3.1 |
| 1 | Quadratic simultaneous equations | <ul style="list-style-type: none"> Solve simultaneous equations; one linear one quadratic To include solving simultaneous equations graphically and interpret algebraic solutions graphically | 3.2, 3.3 |
| 2 | Linear and Quadratic inequalities | <ul style="list-style-type: none"> Solve linear inequalities (must cover sign change when multiplying/dividing by a negative) Solve quadratic inequalities | 3.4, 3.5 |
| 2 | Inequalities on graphs and regions | <ul style="list-style-type: none"> Interpret inequalities graphically Represent linear inequalities and quadratic inequalities graphically | 3.6, 3.7 |
| 1 | Chapter review lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 3 |
| Assessed homework 3 | | | |

| CHAPTER 4 – Graphs and Transformations (5 hours) | | | |
|--|---|---|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 2 | Sketching cubic, quartic graphs and reciprocal graphs | <ul style="list-style-type: none"> Sketch cubic and quartic graphs Mark on intersections with coordinate axes Sketch reciprocal graphs of the form $y = \frac{a}{x}$ and $y = \frac{a}{x^2}$ | 4.1-4.3 |
| 1 | Points of intersection | <ul style="list-style-type: none"> Use intersection points of graphs to solve equations | 4.4 |
| 2 | Graph transformations and transforming functions | <ul style="list-style-type: none"> Translate graphs Stretch graphs Transform graphs of unfamiliar functions | 4.5-4.7 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 4 |
| Assessed homework 4 | | | |

Unit 1 Assessment

Unit 2

| CHAPTER 5 – Straight line graphs (8 hours) | | | |
|--|--|---|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Calculating the gradient given two points and rearrange equations in the form $y = mx + c$ to find the gradient and the y – intercept. | <ul style="list-style-type: none"> Calculate the gradient of a line joining a pair of points Understand the link between the equation of a line, and its gradient and intercept | 5.1 |
| 2 | Find the equation of a line | <ul style="list-style-type: none"> Find the equation of a line given <ol style="list-style-type: none"> The gradient and one point on the line or Two points in the line Find the point of intersection for a pair of straight lines | 5.2 |
| 2 | Parallel and perpendicular lines | <ul style="list-style-type: none"> Know and use the rules for parallel and perpendicular gradients | 5.3 |
| 1 | Length of a line and area of shapes formed when lines intersect | <ul style="list-style-type: none"> Use Pythagoras' Theorem to calculate the length of line segments Solve length and area problems on coordinate grids | 5.4 |
| 1 | Modelling with straight lines | <ul style="list-style-type: none"> Use straight line graphs to construct mathematical models | 5.5 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 5 |
| Assessed homework 5 | | | |

| CHAPTER 6 – circles (6 hours) | | | |
|-------------------------------|---|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Midpoints and perpendicular bisectors | <ul style="list-style-type: none"> Find the midpoint of a line segment Find the equation of the perpendicular bisector to a line segment | 6.1 |
| 2 | Equations of a circle | <ul style="list-style-type: none"> Know how to find the equation of a circle Express $x^2 + y^2 + ax + by + c$ in the form $(x - a)^2 + (y - b)^2 = r^2$ Identify the coordinates of the centre and the radius from the equation of a circle of the form: <ol style="list-style-type: none"> $(x - a)^2 + (y - b)^2 = r^2$ $x^2 + y^2 + ax + by + c$ | 6.2 |
| 1 | Intersections of straight lines and circles | <ul style="list-style-type: none"> solve geometric problems involving straight lines and circles | 6.3 |
| 1 | Use tangent and chord properties | <ul style="list-style-type: none"> use circle properties to solve problems on coordinate grids | 6.4 |
| 1 | Circles and triangles | <ul style="list-style-type: none"> find the angle in a semicircle and solve other problems involving circles and triangles | 6.5 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 6 |
| Assessed homework 6 | | | |

Unit 2 Assessment

Unit 3

| CHAPTER 7 – Algebraic methods (6 hours) | | | |
|---|-------------------------------|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| | Algebraic fractions (Starter) | <ul style="list-style-type: none"> Cancel factors in algebraic fractions | 7.1 |
| 1 | Dividing polynomials | <ul style="list-style-type: none"> Divide a polynomial by a linear expression Fully factorise cubic functions/expressions | 7.2 |
| 1 | The factor theorem | <ul style="list-style-type: none"> Use factor theorem to factorise a cubic expression | 7.3 |
| 1 | Remainder theorem | <ul style="list-style-type: none"> No longer of specification but this is worth doing so student can access more challenging questions | C2 Chapter 1 |
| 1 | Mathematical proof | <ul style="list-style-type: none"> Construct mathematical proofs using algebra | 7.4 |
| 1 | Methods of proof | <ul style="list-style-type: none"> Use proof by exhaustion and disproof by counterexample | 7.5 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 7 |
| Assessed homework 7 | | | |

| CHAPTER 8 – The binomial expansion (5 hours) | | | |
|--|---|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Pascal's triangle | <ul style="list-style-type: none"> Use Pascal's triangle to identify binomial coefficients and use them to expand simple binomial expressions | 8.1 |
| 1 | Factorial notation | <ul style="list-style-type: none"> Use combinations and factorial notation (needs to cover this in details as students require an understanding of this for statistics) | 8.2 |
| 1 | The binomial expansion | <ul style="list-style-type: none"> Use the binomial expansion to expand brackets | 8.3 |
| 1 | Solving binomial problems and binomial estimation | <ul style="list-style-type: none"> Find individual coefficients in a binomial expansion Make approximations using the binomial expansion | 8.4 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 8 |
| Assessed homework 8 | | | |

Unit 3 Assessment

Unit 4

| CHAPTER 9 – Trigonometric ratios (5 hours) | | | |
|--|--|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 3 | The cosine rule, sine rule and area of triangles | <ul style="list-style-type: none">• Use the cosine rule to find a missing side or angle• Use the sine rule to find a missing side or angle• Know that the sine rule sometimes produces two possible solutions• Find the area of a triangle using an appropriate formula• Solving triangle problems | 9.1-9.4 |
| 1 | Graphs of sine, cosine and tangent | <ul style="list-style-type: none">• Sketch the graph of the sine, cosine and tangent functions• Sketch simple transformations of these graphs | 9.5-9.6 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none">• Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 9 |
| Assessed homework 9 | | | |

| CHAPTER 10 – Trigonometric identities and equations (6 hours) | | | |
|---|--|---|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Angles in all four quadrants and exact value | <ul style="list-style-type: none"> Calculate the sine, cosine and tangent of any angle Know the exact trigonometric ratios for 30°, 45° and 60°. Know the signs of sine, cosine and tangent in each quadrant of a CAST diagram. | 10.1, 10.2 |
| 1 | Simple trigonometric equations | <ul style="list-style-type: none"> Solve simple trigonometric equations of the form $\sin \theta = k$, $\cos \theta = k$ and $\tan \theta = k$ | 10.4 |
| 1 | Harder trigonometric equations | <ul style="list-style-type: none"> Solve more complicated trigonometric equations of the forms $\sin n\theta = k$ and $\sin (\theta \pm \alpha) = k$ | 10.5 |
| 2 | Equations and identities | <ul style="list-style-type: none"> Solve trigonometric equations that produce quadratics Know and use the relationship <ul style="list-style-type: none"> I. $\tan \theta \equiv \frac{\sin \theta}{\cos \theta}$ and II. $\sin^2 \theta + \cos^2 \theta \equiv 1$ Solve trigonometric equations involving trigonometric identities | 10.6 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 10 |
| Assessed homework 10 | | | |

Unit 4 Assessment

Unit 5

| CHAPTER 11 – Vectors (7 hours) | | | |
|--------------------------------|----------------------------------|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Vectors and representing vectors | <ul style="list-style-type: none"> Use vectors in two dimensions Use column vectors and carry out arithmetic operations on vectors | 11.1, 11.2 |
| 1 | Magnitude and direction | <ul style="list-style-type: none"> Calculate the magnitude and direction of a vector | 11.3 |
| 1 | Position vectors | <ul style="list-style-type: none"> Understand and use position vectors | 11.4 |
| 1 | Solving geometric problems | <ul style="list-style-type: none"> Use vectors to solve geometric vectors | 11.5 |
| 1 | Modelling with vectors | <ul style="list-style-type: none"> Understand vector magnitude and use vectors in speed and distance calculations Use vectors to solve problems in context | 11.6 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 11 |
| Assessed homework 11 | | | |

Unit 5 Assessment

Unit 6

| CHAPTER 12 – differentiation (10 hours) | | | |
|---|--|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 2 | Gradients of curves and finding the derivative | <ul style="list-style-type: none"> Find the derivative, $f'(x)$ or $\frac{dy}{dx}$, of a simple function Differentiate x^n | 12.1 – 12.3 |
| 1 | Differentiating quadratics | <ul style="list-style-type: none"> Proof from first principles of the derivative of a quadratic is needed | 12.4 |
| 1 | Differentiating functions with two or more terms | <ul style="list-style-type: none"> Differentiating functions with two or more functions where the power is a fraction or negative | 12.5 |
| 1 | Gradients, tangents and normal | <ul style="list-style-type: none"> Use the derivative to solve problems involving gradient, tangents and normal | 12.6 |
| 1 | Increasing functions and second order derivative | <ul style="list-style-type: none"> Know when a function is increasing and decreasing Find the second order derivative, $f''(x)$ or $\frac{d^2y}{dx^2}$, of a simple function | 12.7, 12.8 |
| 1 | Stationary points | <ul style="list-style-type: none"> Find stationary points of functions and determine their nature | 12.9 |
| 1 | Sketching gradient functions | <ul style="list-style-type: none"> Sketch the gradient function of a given function | 12.10 |
| 1 | Modelling with differentiation | <ul style="list-style-type: none"> Model real-life situations with differentiation | 12.11 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 12 |
| Assessed homework 12 | | | |

Unit 6 Assessment

Unit 7

| CHAPTER 13 – Integration (7 hours) | | | |
|------------------------------------|---|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Integrating x^n | <ul style="list-style-type: none"> Find y given $\frac{dy}{dx}$ for x^n | 13.1 |
| 1 | Indefinite integrals | <ul style="list-style-type: none"> Integrate polynomials | 13.2 |
| 1 | Finding functions | <ul style="list-style-type: none"> Finding $f(x)$, given $f'(x)$ and a point on the curve | 13.3 |
| 1 | Definite integrals | <ul style="list-style-type: none"> Evaluate a definite integral | 13.4 |
| 1 | Areas under curves | <ul style="list-style-type: none"> Find the area bounded by a curve and the x-axis | 13.5 |
| 2 | Area under the x -axis and areas between curves and lines | <ul style="list-style-type: none"> Find areas bounded by curves and straight lines | 13.6 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 13 |
| Assessed homework 13 | | | |

Unit 7 Assessment

| CHAPTER 14 – Exponential and logarithms (9 hours) | | | |
|---|--|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Exponential functions | <ul style="list-style-type: none"> Sketch graphs of the form $y = a^x$, $y = e^x$, and transformation of these | 14.1 |
| 1 | Differentiate $y = e^x$ and $y = e^{kx}$ | <ul style="list-style-type: none"> Differentiate e^{kx} and understand why this result is important | 14.2 |
| 1 | Exponential modelling | <ul style="list-style-type: none"> Use and interpret models that use exponential functions | 14.3 |
| 1 | Logarithm | <ul style="list-style-type: none"> Recognise that relationship between exponent and logarithms | 14.4 |
| 1 | Law of logarithm | <ul style="list-style-type: none"> Recall and apply the laws of logarithm <ol style="list-style-type: none"> Multiplication law Division law Power rule | 14.5 |
| 1 | Solving equations using logarithms | <ul style="list-style-type: none"> Solve equations of the form $a^x = b$ | 14.6 |
| 1 | Working with natural logarithms | <ul style="list-style-type: none"> Describe and use the natural logarithm function | 14.7 |
| 1 | Logarithms and non-linear data | <ul style="list-style-type: none"> Logarithms and non-linear data | 14.8 |
| 1 | Chapter Review Lesson | Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 14 |
| Assessed homework 14 | | | |

Assessment Objectives - Year 12 Mechanics & Statistics

Statistics

Unit 1

| CHAPTER 2 – Measures of location and spread(6 hours) | | | |
|---|---------------------------------|---|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Measures of central tendency | <ul style="list-style-type: none">Calculate measures of central tendency such as the mean, median (not for grouped data using interpolation) and mode | 2.1 |
| 2 | Measures of location and spread | <ul style="list-style-type: none">Calculate measure of location such as percentiles, deciles, and quartiles for discrete and grouped data (using interpolation)Calculate measures of spread such interquartile range and interpercentile rangeKnow the advances of using these over the range | 2.2, 2.3 |
| 1 | Variance and standard deviation | <ul style="list-style-type: none">Calculate the variance and standard deviation | 2.4 |
| 1 | Coding | <ul style="list-style-type: none">Understand and use coding for mean, standard deviation and variance | 2.5 |

| | | | |
|---|-------------------------|--|----------------|
| 1 | Large data set activity | <ul style="list-style-type: none"> Book an IT room for students to complete a large data set activity (Edexcel have produced 4 activities with are on staffshare) | Large data set |
| Set a large data set homework based around lesson 6 | | | |

Unit 2

| CHAPTER 3 – Representation of data (5 hours) | | | |
|---|---|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 2 | Cumulative frequency, boxplots and outliers | <ul style="list-style-type: none"> Draw and interpret cumulative frequency diagrams Know what outliers are and use this, together with the cumulative frequency diagram to draw boxplots Understand what data cleaning is | 3.1-3.3 |
| 1 | Histograms | <ul style="list-style-type: none"> Draw and interpret histograms | 3.4 |
| 1 | Comparing data | <ul style="list-style-type: none"> Compare two data sets | 3.5 |
| 1 | Large data set activity | <ul style="list-style-type: none"> Book an IT room for students to complete a large data set activity (Edexcel have produced 4 activities with are on staffshare) | Large data set |
| Assessed homework for chapter 1 | | | |

| CHAPTER 4 – Correlation (3 hours) | | | |
|------------------------------------|--|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Correlation | <ul style="list-style-type: none"> • Draw and interpret scatter diagrams for bivariate data • Interpret correlation and understand that it does not imply causation | 4.1 |
| 1 | Linear regression (students are no longer expected to calculate the equation of the regression line) | <ul style="list-style-type: none"> • Interpret the coefficients of a regression line equation for bivariate data • Understand when you can use a regression line to make predictions (interpolation and extrapolation) | 4.2 |
| 1 | Large data set activity | <ul style="list-style-type: none"> • Book an IT room for students to complete a large data set activity (Edexcel have produced 4 activities with are on staffshare) | Large data set |
| Assessed homework for chapter 2 | | | |

Unit 1 and 2 assessment

Unit 3

| CHAPTER 5 – Probability (4 hours) | | | |
|-----------------------------------|---|---|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Calculating probabilities | <ul style="list-style-type: none">Calculate probabilities for single events (include examples of calculating probabilities from a histogram) | 5.1 |
| 1 | Venn Diagrams | <ul style="list-style-type: none">Draw and interpret Venn diagrams | 5.2 |
| 1 | Mutually exclusive and independent events | <ul style="list-style-type: none">Understand mutually exclusive and independent eventsdetermine whether two events are independent Use multiplication rule for test at this stage as conditional probability covered in Year 13. | 5.3 |
| 1 | Tree diagrams | <ul style="list-style-type: none">Understand and use tree diagrams | 5.4 |
| Assessed homework for chapter 3 | | | |

Unit 4

| CHAPTER 6 – Statistical distribution (4 hours) | | | |
|--|---------------------------|---|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Probability distribution | <ul style="list-style-type: none">Understand and use simple discrete probability distributions including the discrete uniform distribution | 6.1 |
| 2 | The binomial distribution | <ul style="list-style-type: none">Understand the binomial distribution as a model and comment on appropriatenessCalculate individual probabilities for the binomial distribution | 6.2 |
| 1 | Cumulative probabilities | <ul style="list-style-type: none">Calculate cumulative probabilities for the binomial distribution | 6.3 |
| Assessed homework for chapter 4 | | | |

Unit 5

| CHAPTER 7 – Hypothesis testing (6 hours) | | | |
|---|-------------------------|---|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Hypothesis testing | <ul style="list-style-type: none"> Understand the language and concept of hypothesis testing Understand that a sample is used to make inferences about a population | 7.1 |
| 1 | Finding critical values | <ul style="list-style-type: none"> Find critical values of a binomial distribution using tables | 7.2 |
| 1 | One-tailed tests | <ul style="list-style-type: none"> Carry out one-tailed tests for the proportion of the binomial distribution and interpret the results | 7.3 |
| 1 | Two tailed tests | <ul style="list-style-type: none"> Carry out two-tailed tests for the proportion of the binomial distribution and interpret the results | 7.4 |
| 2 | Revision | <ul style="list-style-type: none"> Prepare students for end of unit assessment | Review Exercise 1 |
| Assessed homework for chapter 5 | | | |

Unit 1 - 5 Assessment

Mechanics

Unit 6

| CHAPTER 8 – Modelling in mechanics (5 hours) | | | |
|--|-----------------------|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Constructing a model | <ul style="list-style-type: none"> Understand how the concept of a mathematical model applies to mechanics | 8.1 |
| 1 | Modelling assumptions | <ul style="list-style-type: none"> Understand and be able to apply some of the common assumptions used in mechanical models | 8.2 |
| 1 | Quantities and units | <ul style="list-style-type: none"> Know SI units for quantities and derived quantities used in mechanics | 8.3 |
| 1 | Working with vectors | <ul style="list-style-type: none"> Know the difference between scalar and vector quantities | 8.4 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 8 |
| Assessed homework for chapter 6 | | | |
| Assessed homework for chapter 8 | | | |

Unit 7

| CHAPTER 9 – Constant acceleration (7 hours) | | | |
|---|--------------------------------------|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Displacement-time graphs | <ul style="list-style-type: none"> Understand and interpret displacement-time graphs | 9.1 |
| 1 | Velocity-time graphs | <ul style="list-style-type: none"> Understand and interpret velocity-time graphs | 9.2 |
| 2 | Constant acceleration formulae 1 & 2 | <ul style="list-style-type: none"> Derive the constant acceleration formulae and use them to solve problems | 9.3,9.4 |
| 1 | Vertical motion under gravity | <ul style="list-style-type: none"> Use the constant acceleration formula to solve problems involving vertical motion under gravity | 9.5 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise |
| Assessed homework for chapter 7 | | | |
| Assessed homework for chapter 9 | | | |

Unit 6 and 7 assessment

Unit 8

| CHAPTER 10 – Forces and motion (7 hours) | | | |
|--|-------------------------|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Force diagrams | <ul style="list-style-type: none"> Draw force diagrams and draw resultant forces Understand and use Newton's first law | |
| 1 | Forces as vectors | <ul style="list-style-type: none"> Calculate resultant force by adding vectors | |
| 1 | Forces and acceleration | <ul style="list-style-type: none"> Understand and use Newton's second law $F = ma$ | |
| 1 | Motion in 2 dimensions | <ul style="list-style-type: none"> Apply Newton's second law to vector forces and acceleration | |
| 1 | Connected particles | <ul style="list-style-type: none"> Understand and use Newton's third law | |
| 1 | Pulleys | <ul style="list-style-type: none"> Solve problems involving connected particles | |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 10 |
| Assessed homework for chapter 10 | | | |

Unit 9

| CHAPTER 11 – Variable acceleration (6 hours) | | | |
|--|--------------------------------|--|----------------------------------|
| Number of Hours | Topic | Learning objectives to be covered in the lesson | Pearson's Student book Reference |
| 1 | Functions of time | <ul style="list-style-type: none"> Understand that displacement, velocity and acceleration may be given as functions of time | 11.1 |
| 1 | Using differentiation | <ul style="list-style-type: none"> Use differentiation to solve kinematics problems | 11.2 |
| 1 | Maxima and minima problems | <ul style="list-style-type: none"> Use calculus to solve problems involving maxima and minima | 11.3 |
| 1 | Using integration | <ul style="list-style-type: none"> Use integration to solve kinematics problems | 11.4 |
| 1 | Constant acceleration formulae | <ul style="list-style-type: none"> Use integration to derive constant acceleration formulae | 11.5 |
| 1 | Chapter Review Lesson | <ul style="list-style-type: none"> Identify areas of strength and development within the content of the chapter and pick out questions from the end of chapter mixed exercise | Mixed exercise 11 |
| Assessed homework for chapter 11 | | | |

End of Year Assessment (statistics and applied)

Assessment Objectives - Year 13 Core 3

| | Chapter1 Algebraic Fractions | Learning Objectives | | |
|----|------------------------------|--|------|---|
| 1. | | Pupils should be able to Simplify algebraic fractions by factorising and dividing by common factors. Multiply and divide fractions | 1a/b | 1 |
| 2. | | Add and subtract algebraic fractions by finding the lowest common denominator. | 1c | 1 |
| 3. | | Divide algebraic expressions where there is a remainder Using a) remainder theorem b) long division. – Up to x^4 seen on exams. | 1d/e | 1 |

| | Chapter2 Functions | Learning Objectives | | |
|----|--|---|-------------------|---|
| 1. | Find the domain and range of a) linear function b) quadratic function c) bilinear function | Pupils should know the terms domain and range, one one The definition of a function. Find the range of a function given the domain. | Ch 2 | 2 |
| 2. | Revision of the exponential and log functions – graph sketching , domain and range. | | Ch 3a q1 3b q3 | 1 |
| 3. | Calculation of values by substitution into exponential functions | | 3A q2 | |
| 4. | Solution of equations with exponential and log functions Including ones not in context or as part of function equations eg 2013. | | 3B q 1,2,4,7 | 2 |
| 5. | Function Notation – calculation of $f(x)$ Composite functions –calculation of value. Include all types of function apart from modulus. | | | 1 |
| 6. | Finding the inverse function algebraically Use for solving equations. | | 3b q 1-2 | 1 |
| 7. | Finding the inverse function graphically and idea that domain of f^{-1} is range of f etc Exam q practice. | | 3b q3-8 and 3c | 1 |

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| | Chapter 4 Numerical methods 2 Hours | Learning Objectives | | |
| 1. | Showing that a root is in a given interval by looking for a change in sign. Sketching graphs to determine the number of roots. Using an iterative formula to find a root. Importance of accuracy – At least 6dp How to use the ans button on the calculator . How to be sure your answer is accurate to a given number of dps by using halfway point and looking for a change in sign. | Pupils should be able to <ul style="list-style-type: none"> • Show a root is in a given interval • Derive and use an iterative formula. • Show that a root is correct to a given number of decimal places. | 4a | 1 |
| 2. | Rearranging equations to the form $x=g(x)$ so that an iterative formula can be used. Convergence and divergence. Exam practice | | 4b, c | 1 |

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| | Chapter 8 Differentiation 8 hours | | | |
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| NOT Covered in year 12 1-3 | Differentiation of $\ln x$ e^x $\sin x$, $\cos x$ etc Use of the chain rule | | | 1 |
| NOT Covered in year 12 4-5 | Use of the product rule. Finding dy/dx by finding dx/dy first. | | | 1 |
| 6-7 | Differentiation using the quotient rule Combining the above techniques Application to tangents and normals. Applications to maxima and minima. | | 8C 8J q 3 and mixed exercise | 3 |

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| | Chapter 5 The modulus function and transforming graphs 3 hours | | | |
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| 1. | Definition and how to sketch the modulus of a function by sketching the original and the reflecting in the x axis. Sketching $f x $ by sketching the positive part of $f(x)$ and reflecting it in the y axis | Pupils should <ul style="list-style-type: none"> • Know the definition of the modulus function. • Sketch graphs of $f(x)$ and $f(x)$. • Solve equations including the modulus function. • Sketch graphs of functions where more than one transformation has been applied. | 5A/ B | 1 |
| 2. | Solving equations with modulus in them by sketching and then considering the sign of each part. | | 5C | 1 |
| 3. | Sketching graphs using transformations of functions including specifying important points. – It may be worth just doing 5E and F. Get pupils to transform the individual points. | | 5D/E/F | 1 |

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| | Chapter 6/7 hours Trigonometry | | | |
| 1. | Revision of sec, cosec work | | | 1 |
| 2. | Revision of $\sin(A+B)$ work | | | 1 |
| 3. | Revision of $r\sin(x-\alpha)$ work | | | 1 |

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| 4. | Revision of double angle work | | | 1 |
| 5. | Extension to include proof | | Eg 6d q 6 6f q 6 7a q 7 ,7e | 2 |
| Chapter 6 | Definition and graphs of arc sin, arc cos and arc tan and their graphs. Use of function in exam Q's. | <ul style="list-style-type: none"> Pupils should Be able to sketch the graphs of the arc sin, arc cos and arc tan functions. Know the domain and range of the arc sin, arc cos and arc tan functions. | 6e | 1 |
| Chapter 7 | The factor formulae | <ul style="list-style-type: none"> Use the factor formulae to express the sum of sines and cosines as a product of sines and cosines. | 7E | 1 |

| | Differentiation | | | |
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| <p>Not covered in year 12 this year</p> <p>8-10</p> | <p>How to differentiate the exponential function</p> <p>How to differentiate the log function</p> <p>How to differentiate trig functions</p> <p>Differentiation using the chain rule</p> <p>Differentiation using the product rule- just polynomials.</p> <p>Application to tangents and normals.</p> <p>Applications to maxima and minima.</p> <p>Differentiation using the product rule other functions and combinations.</p> <p>Application to tangents and normals.</p> <p>Applications to maxima and minima.</p> | <p>Pupils should</p> <ul style="list-style-type: none"> Know the derivatives of $e^x, \ln x, a^x, \sin x, \cos x, \tan x$. Use the chain rule, product rule and quotient rule to differentiate functions related to the above functions. | <p>8D</p> <p>8E</p> <p>8A</p> <p>8F-J</p> <p>8B</p> | |

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| | Chapter 3 Exponential and log functions 4 hours | | | |
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| 1 | <p>NOT covered in Year 12.</p> <p>Exponential Functions in general- sketching revision of transformations.</p> <p>The exponential function – sketching graphs of functions- revision of transformations.</p> <p>Domain and range of the function.</p> | <p>Pupils should</p> <ul style="list-style-type: none"> • Sketch exponential and log graphs. • State the domain and range of a function. • Find the composite function • Find the inverse function. • Solve equations with log and exponential graphs. | 3A q1 + supplement | 1 |
| 2 | Calculation of values by substitution into exponential functions | | 3A q2 onwards | 1 |
| 3 | <p>The log function \ln as an inverse to the exponential function.</p> <p>Solution of equations with exponential and log functions</p> | | 3B q 1,2,4,7 | 1 |
| 4 | <p>Sketching log and exponential functions, domain and range.</p> <p>Log graphs need to be drawn by looking at where asymptote is and intersection with axes.</p> | | 3B q 3,5,6,8 + mixed exercise | 1 |

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| 3 | Chapter 6 Trigonometry | | | |
| 1 | <p>Definition of sec, cosec and cot</p> <p>How to calculate values</p> <p>The basic form of the graphs -</p> | <p>Pupils should</p> <ul style="list-style-type: none"> • Know the definitions of sec,cosec,cot. <p>And their domains and ranges.</p> | 6A | 1 |

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| | | <ul style="list-style-type: none"> • Be able to sketch the graphs of the functions. • Be able to derive the relevant identities. • Solve equations including these functions. | | |
| 2 | Revision of CAST diagrams and important points when solving equations. | | | |
| 2 | How to solve trig equations involving sec, cot, cosec | | 6C 5,6,7. | 1 |
| 3 | The trig identities $1+\tan^2 x = \sec^2 x$ and $1 + \cot^2 x = \operatorname{cosec}^2 x$ and their use when solving equations. | | 6d q 6,7,8 | 1 |
| | Chapter 7 6hours Trigonometry | | | |
| 1 | <p>COVERED IN YR 12</p> <p>Exact triangles – finding $\sin x$ $\cos x$ and $\tan x$ from one of the other values.</p> <p>The trig identities $\sin(A+B)$ etc .</p> <p>Substitution of common angles to calculate new sines etc eg $\sin(105)$</p> <p>Substitution from exact triangles.</p> <p>Expressing in the form $r \cos/\sin(x-a)$</p> <p>The double angle formulae and their uses</p> <p>a) Simplifying eg q 1-3</p> <p>b) To find the exact value of an expression q4 onwards</p> <p>c) Solve equations</p> | <p>Pupils should</p> <ul style="list-style-type: none"> • Be able to calculate the values of angles using the addition formulae. • Derive $\sin(A-B)$ from $\sin(A+B)$ etc. • Derive the double angle formula from the addition formula. • Solve equations using these identities. • Express functions of the form $a \sin x + b \cos x$ in the form $r \sin(x+\alpha)$ • Use the $r \sin(x+\alpha)$ to solve equations. • Use the $r \sin(x+\alpha)$ to find maximum and minimum values. | <p>Book q are not great.</p> <p>Suggestions below</p> <p>7B-D</p> | 1 |

Assessment Objectives - Year 13 Core 4

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| | Chapter 1 Partial Fractions 6 hours | Partial fractions to include denominators such as $(ax + b)(cx + d)(ex + f)$ and $(ax + b)(cx + d)^2$. The degree of the numerator may exceed the degree of the denominator. Quadratic factors in the denominator such as $(x^2 + a)$, $a > 0$, are not required | |
| 1 | Introduction- Combining fractions | Pupils should <ul style="list-style-type: none"> Be able to express expressions as partial fractions. | 1A |
| 2 | Partial fractions with 2 distinct factors. | | 1B |
| 3 | Partial Fractions with 3 or more linear factors. | | 1C |
| 4 | Partial fractions with repeated linear factors. | | 1D |
| 5 | Partial fractions where the degree of the numerator is equal to or greater than the denominator. | | 1E/F |

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| | Applications to simplifying integration, differentiation and series expansions but will be covered when those topics are covered. . | | |
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| | Chapter 6 Integration Part 1 | Note sections 6a-6c are much harder than the exam questions. | |
| 1 | <p>Integration by using standard functions and the reverse of the chain rule.</p> <p>To include integration of standard functions such as $\sin 3x$, $\sec^2 2x$ and $\tan x$, e^{5x}, $1/2x$.</p> <p>The integral $\int \ln x \, dx$ is required</p> | | 6a/6b |

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| 2 | Integration by using trig identities. Candidates are expected to be able to use trigonometric identities to integrate, for example, $\sin^2 x$, $\tan^2 x$, $\cos^2 3x$. Includes factor theorem | | 6c |
| 3 | Integration by using partial fractions. | | 6d |

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| | Chapter 3 The Binomial Expansion | | |
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| 1 | Binomial expansion with fractions and negatives. $(1+ax)^n$ including the range of values of x for the expansion to be valid. | <p>Pupils should</p> <ul style="list-style-type: none"> Use the expansion $(1+x)^n = 1 + nx + \frac{n(n-1)}{2}x^2 + \dots$ Be able to state the range of values for which the expansion is valid. Apply the binomial theorem to partial fractions . | 3A |
| 2 | Binomial expansion with fractions and negatives. $(a+bx)^n$ | | 3B |
| 3 | Problems with partial fractions and the binomial theorem. | | 3C |

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| | Chapter 2 /4 Parametric Equations | Candidates will not be expected to sketch a curve from its parametric equations | |
| 1 | Drawing parametric curves by plotting | Pupils should <ul style="list-style-type: none"> • Be able to rewrite parametric equations in Cartesian form. • Find intersections with the x and y axes. • Find the area between a curve expressed in parametric form and the x axis. | 2A 1-3 |
| 2 | Eliminating the parameter | | 2a 4,5 |
| | Eliminating the parameter with sin and cos | | 2C |
| 3 | Finding intersections with axes | | 2B |
| 4 | Finding dy/dx when the equation is given parametrically. The equation of a tangent or normal | Pupils should <ul style="list-style-type: none"> • Know that $dy/dx = dy/d\theta \cdot d\theta/dx$ • Calculate the gradient of the curve at a point. • Find the equation of a tangent and a normal for functions expressed in parametric form. | 4A q 1-4 |

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| 5 | Implicit differentiation The derivative of $y=a^x$ The equations of tangents and normals | <ul style="list-style-type: none"> Know $d f(y)/dx= d f(y)/dy \cdot dy/dx$ Find the equation of a tangent and a normal for functions expressed implicitly. | 4B q1 4C 4B q2-4 |
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| | Chapter 6 Part 2 | | |
| 4 | Integration using standard patterns Where you have $f'(x)/f(x)$ or $f'(x)[f(x)]^n$ | | 6e |
| 5 | Integration by substitution Except in the simplest of cases the substitution will be given. | | 6f |
| 6 | Integration by parts More than one application of integration by parts may be required, for example $\int x^2 e^x dx$. | | 6g |
| 7 | Integration using the trapezium rule Use of increasing number of trapezia to improve accuracy and estimate error will be required. Simpsons Rule is not required. | Percentage error in calculation. | 6h |

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| 8 | Finding the volume of a solid of revolution. $\int \pi y^2 dx$ is required but not $\int \pi x^2 dy$. Candidates should be able to find a volume of revolution, given parametric equations. | | 6i |
| 9 | Finding the area under the curve given in parametric form. | | 2D |

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| | Chapter 5 Vectors | | |
| 1 | Vectors in two and three dimensions. Algebraic operations of vector addition, subtraction and multiplication by a scalar, and their geometrical interpretations. | Pupils should <ul style="list-style-type: none"> • Add, subtract and multiply vectors by scalars. • Find the magnitude of a vector and the distance between two points represented by vectors • Find the equation of a straight line in vector form. • Find the point of intersection of 2 lines given in vector form. • Find the angle between 2 non parallel, non zero vectors.. | 5a-c Sol A |
| 2 | Magnitude of a vector. The orthogonal unit vectors. Position vectors. The distance between two points. Finding a unit vector | | 5d-f Sol B |

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| 3 | Vector equations of lines. To include the forms $\mathbf{r} = \mathbf{a} + t\mathbf{b}$ and $\mathbf{r} = \mathbf{c} + t(\mathbf{d} - \mathbf{c})$. Intersection or otherwise of two lines. | | 5h, 5i Sol C |
| 5 | The scalar product. Its use for calculating the angle between two lines. | <p>Pupils should know that for \rightarrow</p> <ul style="list-style-type: none"> $OA = \mathbf{a} = a_1\mathbf{i} + a_2\mathbf{j} + a_3\mathbf{k}$ and $OB = \mathbf{b} = b_1\mathbf{i} + b_2\mathbf{j} + b_3\mathbf{k}$ then $\mathbf{a} \cdot \mathbf{b} = a_1b_1 + a_2b_2 + a_3b_3$ and <p>$\cos \angle AOB = \frac{\mathbf{a} \cdot \mathbf{b}}{ \mathbf{a} \mathbf{b} }$</p> <p>Candidates should know that if $\mathbf{a} \cdot \mathbf{b} = 0$, and that \mathbf{a} and \mathbf{b} are non-zero vectors, then \mathbf{a} and \mathbf{b} are perpendicular.</p> | 5g, 5j mixed exercise 5k Sol D |

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| | Differential Equations Chapter 6 part 3 | | | |
| 1 | Related rates of change | <p>Pupils should</p> <ul style="list-style-type: none"> Form differential equations Solve differential equation problems. | 4D | 1 |
| 2 | Forming Differential equations General and particular solutions will be required. | | 4E | 2 |

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| 3 | Solving differential equations | | 6j,k | 3 |

Assessment Objectives – Year 13 Statistics 1

| Topic | Objectives | Book content |
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| Chapter 1 -4 | | |
| <p>Introduction to statistical modelling. Analysis of small sets of data using a stem and leaf diagram + box plot- median, quartiles ,range and inter-quartile range.</p> <p>Calculation of the mean values using the Σ notation</p> <p>Revision</p> | <p>Pupils should</p> <ul style="list-style-type: none"> • Know the parts of the statistically modelling process. • Calculate the value of mean, median, mode and range. • Draw and use stem and leaf diagrams. | <p>Ch 1</p> <p>2A,B, C</p> <p>3A</p> <p>4A,B</p> |
| <p>Calculation of Quartiles and IQR. Calculation of measures using linear interpolation.</p> <p>(Include the concept of Deciles – easy once they have done quartiles)</p> | <ul style="list-style-type: none"> • Calculating quartiles and IQR including the use of linear interpolation. • Identify outliers according to a stated definition. | <p>2D</p> <p>3B</p> |

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| Drawing a box plot and outliers | <ul style="list-style-type: none"> • Draw box and whisker diagrams including finding outliers. • Compare 2 sets of data using boxplots. | 4C, D |
| Analysis of grouped data by drawing histograms and relative frequency histograms Revision | <ul style="list-style-type: none"> • Draw histograms choosing their own scale. • To perform calculations on a Histogram know the area of the bar is equal to the Frequency. | 4E, |
| To describe skew using a) histogram b) position of mean, mode, median (evident in box plot), c) position of the quartiles d) A calculation. | <ul style="list-style-type: none"> • Determine the skew of a distribution. | 4F |
| Calculation of the variance and standard deviation a) small sets of data b) frequency table c) grouped frequency table using both sets of formulae. | <ul style="list-style-type: none"> • Calculate the variance and standard deviation | 3C,D |

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| Use of Coding – To be completed at the end of chapter 7 | . | 2E/F 3E/F |
|---|---|--------------|

| Correlation Chapter 6/7 | Objectives | Book content |
|--|---|--------------|
| Drawing scatter diagrams and correlation | Pupils should <ul style="list-style-type: none"> • Draw Scatter diagrams choosing their own scale. • Understand the concept of correlation. | 6A |
| The PMCC . Calculation of s_{xx}, s_{xy}, s_{yy} . | <ul style="list-style-type: none"> • Calculate the PMCC from a) raw data. b) Summed data | 6B,C |
| Linear Regression Explanatory and response variables. Calculation of least squares regression lines including theory behind it. | <ul style="list-style-type: none"> • Use the relevant formulae for a and b. | 7A/C |
| Using coding in calculations | Complete ALL coding (inc. chapter 1-4) together at the end of chapter 7. This will allow for Ch. 1-7 topics to be re-visited. | 6E,7B |
| Coding and the PMCC | <ul style="list-style-type: none"> • Use coding to make calculations easier. Understand the effect of coding on the PMCC. | 6D |

| Probability | Objectives | Book content |
|---|---|--------------|
| <p>To solve problems using Venn diagrams</p> <p>Lesson 1 using everyday definitions,</p> <p>Lesson 2 using set notation-definition of sample space etc.</p> | <p>Pupils should</p> <ul style="list-style-type: none"> • Know and understand the notation associated with probability. • Use a Venn diagram to solve a problem with up to 3 sets. • Understand the meaning of the terms mutually exclusive and independent. • Use to rules of probability to calculate probabilities. • Understand the concept of conditional probability. • Use tree diagrams to calculate probabilities. | 5A-B |
| <p>To use the addition rule $P(A \cup B) = P(A) + P(B) - P(A \cap B)$.</p> <p>Definition of mutually exclusive.</p> | | 5C |

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| To solve probability problems using tree diagrams including conditional probability and combinations . | | 5F,G |
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| Discrete random variable | Objectives | Number of lessons | Book content | Other resources |
|--|---|-------------------|--------------|--|
| Definition of a discrete rv. Definition of $F(x)$. Finding probabilities. | Pupils should <ul style="list-style-type: none"> Know that the sum of the probabilities is 1 Know that $F(x)$ stands for the cumulative probability function. | 1 | 8A/B | S1.5 Discrete random variables Fill in sheets discreterv1-3 |
| The expected value $E(x)$ and variance $Var(x)$. | <ul style="list-style-type: none"> Calculate the $E(X)$ and $Var(X)$ using the relevant formulae. If $y=aX +b$ find the $E(Y)$ and $Var(Y)$. | 1 | 8C/D | |
| The expected value of a linear function of a random variable. | | 1 | 8E/G | |
| The discrete uniform distribution and application of this. | <ul style="list-style-type: none"> Know that $P(X=x)=1/n$. | 1 | 8F | |

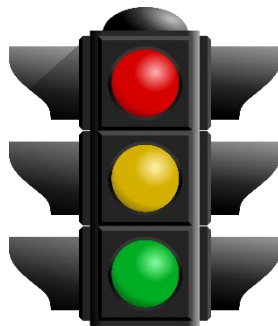
| Normal Distribution | Objectives | Number of lessons | Book content | Other resources |
|--|--|-------------------|--------------|---|
| The standard normal distribution-finding probabilities | Pupils should <ul style="list-style-type: none"> • know that the standard normal distribution is symmetrical with mean zero and standard deviation=1. • know that the total area under the curve is 1. • Be able to use table to find the probability and z values. | 1 | 9A/B | S1.6 Normal distribution Fill in sheets 1,2. |
| Any Normal distribution-finding probabilities and using probabilities to find X values and mean and standard deviation | Pupils should be able to transform between a normal distribution and standard normal be able to calculate μ and σ given probabilities. | 2-3 | 9C-E | |
| Final Assessment of all content before the end of the Spring Term | | | | |

EFFECTIVE REVISION

1. Identify your strengths & weaknesses

Use the assessment objectives above to identify topics that you are good at and topics that you need to work on. Use feedback from your teachers and performance on recent assessments to help you to do this.

This will allow you to select the topics that you need to spend more time on and help you to avoid spending unnecessary time revising topics that you can already do.



Using a traffic light colour scheme against topics will give you an overall picture of how you are doing and will also allow you to track your progress.

2. www.physicsandmathstutor.com

A fantastic website that includes the following:

1. Revision notes for each chapter
2. Past Paper Questions arranged by topic with solutions
3. End of chapter tests
4. Video tutorials explaining how to answer past exam questions

3. www.hegartymaths.com

Register for a free account to watch video tutorials on all topics.

4. www.mrbartonmaths.com

Contains revision notes, worked examples, past paper questions and video tutorials for each topic.

3. Using Past Papers

Completing past papers should form a big part of your revision. Following the tips below will ensure that you get the most out of it.

1. Don't spend all of your time completing questions that you already know how to do. This isn't going to increase your marks. Focus your time on the questions that you find hard.

2. Use a mark scheme to check your answers question by question. If you have got something wrong it means that you need more practice on that topic. Highlight it on your topic checklist & use one of the resources above.

3. Don't miss out questions. Use the resources listed above & the markscheme for support. Improving your understanding of the topics that you can't do is how you will increase your marks.

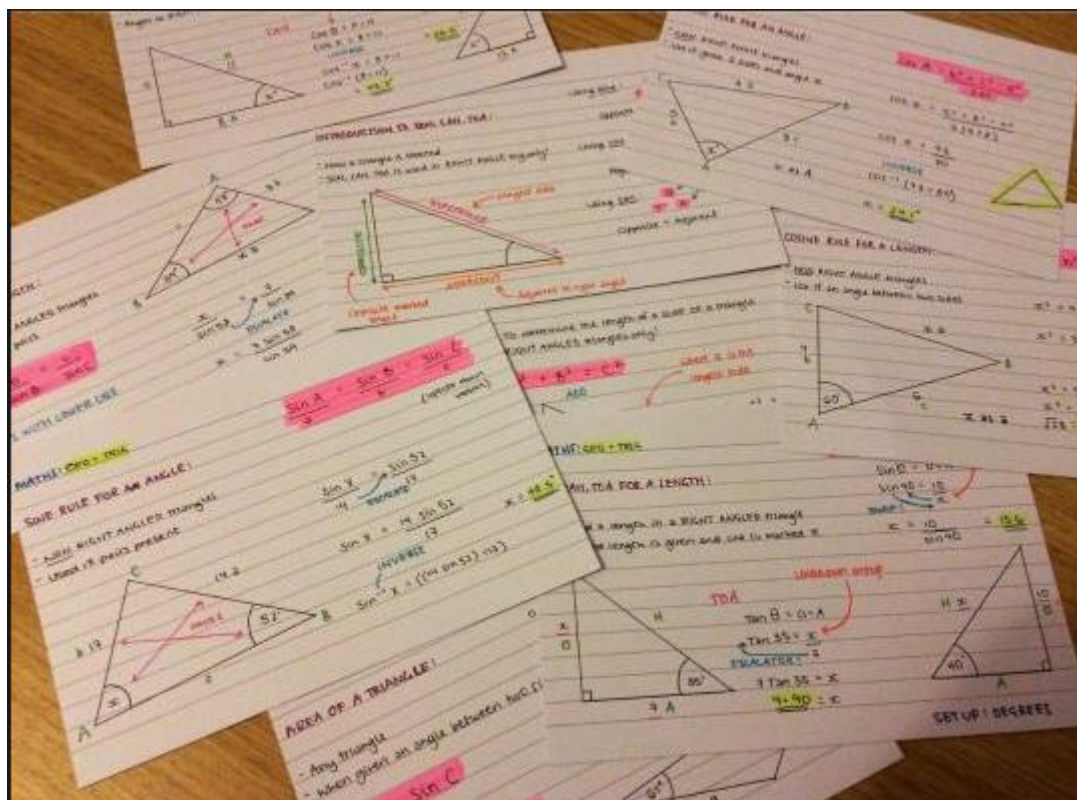
4. Reuse papers again. Try the questions that you found difficult again. Make a revision resource for particular questions. See ideas below.

4. Make your own flashcards & posters

Making your own flash cards ensures that they will match exactly what you need.

Use exam papers to make flash cards of the questions that you found difficult. Include a detailed answer with tips & hints.

Get someone to test you using the flashcards. They should try to give a hint if you get stuck rather than showing you the answer.



Make posters and stick them on your bedroom wall/ceiling. Focus on the things that you struggle to remember. Use your revision guide to help.

5. Ask your teacher

Make a note of questions that you are struggling with. Take a copy of the question to your teacher and ask for help.

Attend all extra revision sessions. These will be planned to focus on the topics that you need the most.