



Archbishop Beck Catholic College

KS5 Scheme of Work

Year 12 Maths Applied



Lesson Sequencing	The High 5 Lesson : to be used throughout year	Further Challenge Opportunities
<p>Unit 1: Statistical sampling</p> <ul style="list-style-type: none">1a. Introduction to sampling terminology; Advantages and disadvantages of sampling1b. Understand and use sampling techniques; Compare sampling techniques in context <p>Unit 2a: Data presentation and interpretation</p> <ul style="list-style-type: none">2a. Calculation and interpretation of measures of location and measures of variation; Understand and use coding2b. Interpret diagrams for single-variable data; Interpret scatter diagrams and regression lines; Recognise outliers <p>Unit 6: Quantities and units in mechanic</p> <ul style="list-style-type: none">6a. Introduction to mathematical modelling and standard S.I. units of length, time and mass6b. Definitions of force, velocity, speed, acceleration and weight and displacement; Vector and scalar quantities	<p>Consolidation: Tasks to support prior learning including past exam questions.</p> <p>Modelling: Model examples for each topic when taught. Also exam questions to recap.</p> <p>Response and Feedback: Q & A, oral feedback to whole class and individuals, improvement tasks, extension tasks, peer assessment tasks, marking of homework and assessments in depth.</p> <p>Challenge: use of exam questions and problem solving questions from text book. Mixed exercises also provide challenge questions.</p> <p>Independence: Pupils to work through mixed exercises and review exercises in text book. tasks, condensing notes in mind maps. Self and peer assessment.</p>	<p>Extension Exam and problem solving questions provided. Mixed exercises and review exercises provided to challenge HAP. Use of Advanced Maths Support Programme for problem solving days, STEP and AEA test preparation days.</p>

Unit 7: Kinematics 1 (constant acceleration)

- 7a. Graphical representation of velocity, acceleration and displacement
- 7b. Motion in a straight line under constant acceleration; suvat formulae ; Vertical motion under gravity

Unit 3: Probability

- 3a. Mutually exclusive events; Independent events

Unit 4: Statistical distributions

- 4a. Use and identify discrete distributions; Calculate probabilities using the binomial distribution (calculator use expected)

Unit 5a: Statistical hypothesis testing

- 5a. Language of hypothesis testing; Significance levels

Unit 8a: Forces & Newton's laws

- 8a. Newton's first law, force diagrams, equilibrium, introduction to i, j system
- 8b. Newton's second law, (no resolving forces or use of $F = \mu R$); Newton's third law: equilibrium, smooth pulley problems

Unit 9: Kinematics 2 (variable acceleration)

- 9a. Variable force; Calculus to determine rates of change for kinematics
- 9b: Use of integration for kinematics problems i.e. $r = \int v dt$, $v = \int a dt$

Consolidation: Tasks to support prior learning including past exam questions.

Modelling: Model examples for each topic when taught. Also exam questions to recap.

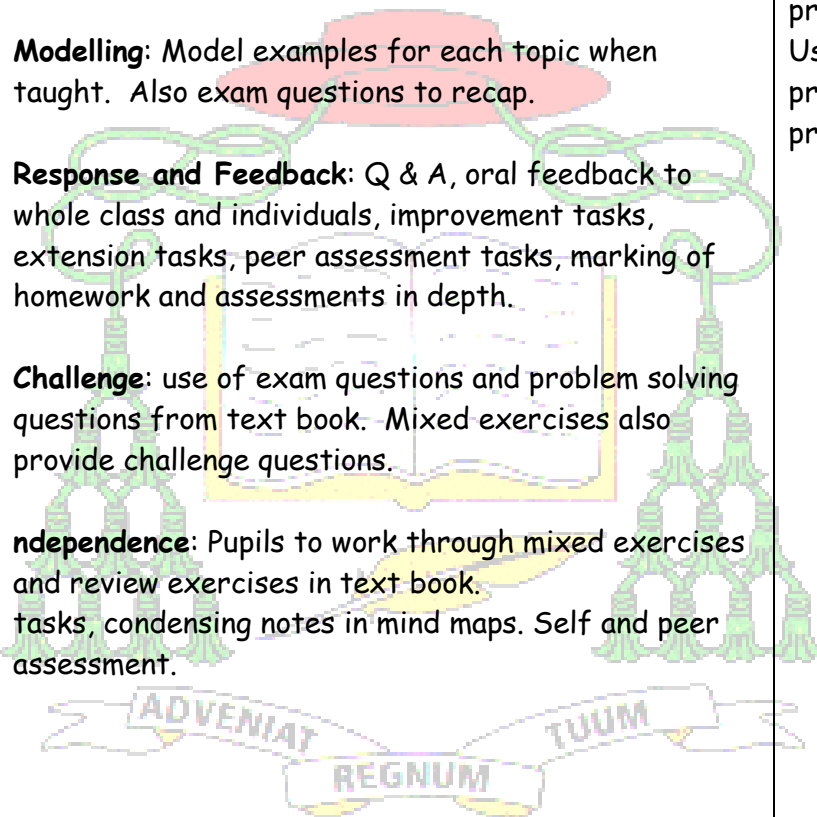
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Unit 5b: Statistical hypothesis testing

- 5b. Carry out hypothesis tests involving the binomial distribution

Unit 1: Regression and correlation

- 1a. Change of variable
- 1b. Correlation coefficients. Statistical hypothesis testing for zero correlation

Consolidation: Tasks to support prior learning including past exam questions.

Modelling: Model examples for each topic when taught. Also exam questions to recap.

Response and Feedback: Q & A, oral feedback to whole class and individuals, improvement tasks, extension tasks, peer assessment tasks, marking of homework and assessments in depth.

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