Year 12 Maths Curriculum Map

Sequencing of topics	**What knowledge will students develop? (Including key terminology)**	**What skills will students develop? (Including literacy & numeracy)**	**Assessment opportunities**	**Homework opportunities**	**Personal development (Ursuline Values, Catholic Social Teaching, Cultural Capital, Cross-curricular, Careers)**	**Curriculum Links**
Autumn Term						
Algebraic Expressions	• Index laws • Negative and fractional indices • Expanding and factorising • Surds and rationalising	• be able to perform essential algebraic manipulations, such as expanding brackets, collecting like terms, factorising etc; • understand and be able to use the laws of indices for all rational exponents; • be able to use and manipulate surds, including rationalising the denominator.	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning Research opportunities: Indices involved in exponential growth and decay. Compound interest	**Joyful** for the possibilities of using very large/very small and accurate form of numbers within our calculations **Grateful** for the positive impact that the index laws help reduce time when simplifying The option for the poor Creation and Environment The common good ICT Computer Science Geography (population growth) Science STEM Banking Financial analyst Research Scientist Engineering **Accountant**	Exponentials and Logarithms

Year 12 Maths Curriculum Map

Quadratics	• Solving quadratic equations by factorising and solving by recognition • Solving quadratic equations by formula • Solving quadratic equations by completing the square- sketch quadratic graphs • Functions introduction • Sketching quadratic graphs • Discriminants (relate to quadratic graph too) and Modelling with quadratics	• be able to solve a quadratic equation by factorising; • be able to work with quadratic functions and their graphs; • know and be able to use the discriminant of a quadratic function, including the conditions for real and repeated roots; • be able to complete the square. e.g. $ax^2 + bx + c = a\left(x + \frac{b}{2a}\right)^2 + \left(c - \frac{b^2}{4a}\right)$; • be able to solve quadratic equations, including in a function of the unknown.	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	**Grateful** for the real-life applications of quadratic equations. **Courageous and resilient** during the process of solving problems step by step. Peace-Tolerant of different methods that could be used to solve problems. Computer Science Science STEM PE Military Telecommunications Engineering Construction Astronomy Criminal Investigators Insurance agents Bankers Economists Creation and Environment	Solving equations and inequalities Transformations of graphs

Year 12 Maths Curriculum Map

					The common good	
Equations and inequalities	• Linear simultaneous equations • Quadratic simultaneous equations • Solving simultaneous equations graphically • Linear (as starter) and quadratic Inequalities • Regions and inequalities on graphs	• be able to solve linear simultaneous equations using elimination and substitution; • be able to use substitution to solve simultaneous equations where one equation is linear and the other quadratic. • be able to solve linear and quadratic inequalities; • know how to express solutions through correct use of 'and' and 'or' or through set notation; • be able to interpret linear and quadratic inequalities graphically; • be able to represent linear and quadratic inequalities graphically.	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	**Grateful** for the real-life applications of graphs. Peace The common good ICT Computer Science Graphics Financial analyst Research Scientist	Solving equations and inequalities Graph drawing
Graphs and transformations	• Quadratic, cubic, quartic and reciprocal graphs including points of intersection	• understand and use graphs of functions; • be able to sketch curves defined by simple equations including polynomials;	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions	Tolerant of the variety of methods that could be used to help sketch key points on a graph Computer Science	Coordinates Functions

Year 12 Maths Curriculum Map

	• Transformation of graphs including asymptotes	• be able to use intersection points of graphs to solve equations. • understand the effect of simple transformations on the graph of $y = f(x)$; • be able to sketch the result of a simple transformation given the graph of any function $y = f(x)$.		-Past exam questions -Opportunities for flipped learning	Science STEM PE Telecommunications Engineering Construction Astronomy Insurance agents Bankers Economists	
Straight line graphs	• Equation of straight lines, rearrange to find gradient and find missing coordinates • Find equations of straight lines given coordinates • Problem Solving • Parallel and perpendicular,	• understand and use the equation of a straight line. • know and be able to apply the gradient conditions for two straight lines to be parallel or perpendicular. • be able to find lengths and areas using equations of straight lines. • be able to use straight-line graphs in modelling.	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	Grateful for the real-life applications of graphs. Computer Science Science STEM PE **Electrical engineer** **Control systems engineer** **Mathematician** **Physicist**	Substitution and solving equations

	length of a line and enclosed areas • Modelling with straight lines					
Circles	• Midpoints and perpendicular bisectors • Equation of circles • Intersection of straight lines and circles • Use tangents and chord properties • Circles and triangles	• be able to find the midpoint of a line segment; • understand and use the equation of a circle; • be able to find points of intersection between a circle and a line; • know and be able to use the properties of chords and tangents.	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	**United in Harmony** Circles brings together geometry and calculus. Students can develop an appreciation for the unity and harmony in mathematics and recognize the beauty in seeing diverse mathematical ideas come together. **Access to modelling software that allow students to visualise effects of circles and lines crossing.** Computer Science Science STEM Art	Equation of a straight line Circle theorems
Algebraic methods	• Algebraic Fractions • Dividing Polynomials • Factor theorem	• be able to use algebraic division; • know and be able to apply the factor theorem; • be able to fully factorise a cubic expression;	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos	**Discerning and Joyful**: By exploring the roots of polynomials, students develop their ability to analyse and discern mathematical patterns, fostering a discerning mindset.	Quadratics Equations Binomial expansion

	• Mathematical proof • Methods of proof	• understand and be able to use the structure of mathematical proof, proceeding from given assumptions through a series of logical steps to a conclusion; • be able to use methods of proof, including proof by deduction, proof by exhaustion and disproof by counter-example.		-Practice questions -Past exam questions -Opportunities for flipped learning	Human Dignity Common Good Access to supplementary materials or textbooks that offer alternative explanations and problem-solving strategies. Physics computer science **Aerospace engineer** **cryptographer** **Mathematical modeler** **Chartered Accountant**	
Binomial expansion	• Pascal's triangle and introduce Binomial expansion & factorial notation • Solving binomial problems and Binomial estimation	• understand and be able to use the binomial expansion of $(a + bx)^n$ for positive integer n; • be able to find an unknown coefficient of a binomial expansion.	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	**Discerning and Joyful** Students can appreciate how pascals triangle simplifies the process of binomial expansion. Availability of online tutorials and videos that show the relationship between pascals triangle and binomial expansion. Physics Computer Science Economics **Electrical Engineer** **Financial Analyst** **Game Developer**	Sequences Expanding brackets
Spring Term						
Trigonometry ratios	• Sine and cosine rules, area of	• understand and be able to use the definitions of sine, cosine and tangent for all arguments;	End of topic assessment	Textbook/Practice Book/Other online resources These include:	**Leading for Justice, Truth, and Integrity** Students can explore how trigonometry enables us to	2D shapes Angles

	triangles (with all the proofs) • Solve triangle problems • Graphs of sine, cosine and tangent • Transformations of these graphs	• understand and be able to use the sine and cosine rules; • understand and be able to use the area of a triangle in the form $\frac{1}{2}ab\sin c$; • understand and be able to use the sine, cosine and tangent functions; their graphs, symmetries and periodicity.		-Videos -Practice questions -Past exam questions -Opportunities for flipped learning	model and analyse real-world accurately. **Geography** **STEM** **Physics** **Economics** **Computer Science** **Leading for Justice, Truth, and Integrity** Students can explore how trigonometry enables us to model and analyse real-world accurately. **Economist** **Data Scientist** **Architect** **Aerospace Engineer** Access to online maths communities or forums that focus on advanced Trigonometry discussions and how these are applied to problem-solving.	
Trigonometry identities and equations	• **Exact Values** – Exact values for standard angles (30, 60, 90 etc) and finding one trig ratio given another in exact form (both degrees and radians).	• be able to solve trigonometric equations within a given interval • understand and be able to use $tan\,\theta = \frac{cos\,\theta}{sin\,\theta}$ • Understand and use $\sin^2\vartheta + \cos^2\vartheta = 1$	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions	**Leading for Justice, Truth, and Integrity** Students can explore how trigonometry enables us to model and analyse real-world accurately. **Geography** **STEM** **Physics** **Economics**	Algebraic expressions

	• **Identities** – Use of identities tanA = sinA/cosA and $sin^2A + cos^2A = 1$ to prove further identities • **Identities** – Use of identities tanA = sinA/cosA and $sin^2A + cos^2A = 1$ to solve equations including those that result in quadratic equations • **Solving Harder Equations** – Solving more complex equations involving			-Opportunities for flipped learning	**Computer Science** **Aerospace Engineer** **Economist** **Data Scientist** **Architect** **Access to online maths communities or forums that focus on advanced Trigonometry discussions and how these are applied to problem-solving.**	
Vectors	• Representing Vectors, Magnitude and direction, Position Vectors • Solving geometric problems	• be able to use vectors in two dimensions; • be able to calculate the magnitude and direction of a vector and convert between component form and magnitude/direction form;	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions	**United in Harmony** By learning about vectors, students understand how different components or forces can come together to create a unified result. This value emphasizes the importance of collaboration, teamwork, and recognizing the	Algebraic expressions Coordinates

	• Modelling with Vectors	• be able to add vectors diagrammatically and perform the algebraic operations of vector addition and multiplication by scalars, and understand their geometrical interpretations. • understand and be able to use position vectors; • be able to calculate the distance between two points represented by position vectors; • be able to use vectors to solve problems in pure mathematics and in context, (including forces).		-Past exam questions -Opportunities for flipped learning	interconnectedness of various elements. The option for the poor Creation and Environment The common good **Participation in STEM camps or workshops that focus on spatial reasoning and geometry.** **Exposure to real-world examples and applications of vectors through field trips or guest speakers.** Physics Geography **STEM** **Electrical engineer** **Control systems engineer** **Mathematician** **Physicist** **Software developer** **Architect**	
Differentiation	• Gradients of Curves and limits • Finding the derivative and differentiating from first principles	• understand and be able to use the derivative of f(x) as the gradient of the tangent to the graph of y = f(x) at a general point (x, y); • understand the gradient of the tangent as a limit and its	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions	**Leading for Justice, Truth, and Integrity** Students can explore how calculus enables us to model and analyse real-world phenomena accurately. By employing calculus, mathematicians and scientists can make informed decisions,	Integration Indices Gradient of a straight line graph

	• Basic differentiation, differentiating more complex functions • **Tangents and normals** – use of differentiation to find equations of tangents and normals to curves. • **Increasing and Decreasing functions & Further differentiation** - 2nd Order Differentiation • Stationary points, Nature of these points • Sketch gradient function • Model real-life situations with differentiation • Mixed exercise and exam type questions •	interpretation as a rate of change; • be able to sketch the gradient function for a given curve; • be able to find second derivatives; • understand differentiation from first principles for small positive integer powers of *x*; • be able to differentiate x^n, for rational values of *n*, and related constant multiples, sums and differences. • be able to apply differentiation to find gradients, tangents and normals, maxima and minima and stationary points; • be able to identify where functions are increasing or decreasing.		-Past exam questions -Opportunities for flipped learning	solve problems, and gain a deeper understanding of the natural world. Creation and Environment The common good **Exposure to diverse cultural contexts and perspectives in relation to advanced calculus techniques and their applications in various fields such as physics, engineering, and economics.** **Access to supplementary materials or textbooks that offer alternative explanations** **Solidarity** **Physics** **Economics** **Computer Science** **Aerospace Engineer** **Economist** **Data Scientist** **Architect**	

Year 12 Maths Curriculum Map

Integration	• Find y given dy/dx, Integrate polynomials • Indefinite integrals • Find f(x)-given a point on the curve to find the constant 'c' • Evaluate a definite Integral, find area bounded by a curve and the x-axis • Find areas bounded by curves and straight lines Mixed exercise and exam type questions	• know and be able to use the Fundamental Theorem of Calculus; • be able to integrate x^n (excluding $n = -1$), and related sums, differences and constant multiples. • be able to evaluate definite integrals; • be able to use a definite integral to find the area under a curve.	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	**Leading for Justice, Truth, and Integrity** Students can explore how calculus enables us to model and analyse real-world phenomena accurately. By employing calculus, mathematicians and scientists can make informed decisions, solve problems, and gain a deeper understanding of the natural world. Creation and Environment The common good **Exposure to diverse cultural contexts and perspectives in relation to advanced calculus techniques and their applications in various fields such as physics, engineering, and economics.** **Physics** **Economics** **Computer Science** **Aerospace Engineer** **Economist** **Data Scientist** **Architect**	Differentiation Area of 2D shapes Indices
Exponentials and logarithms	• Sketch graphs $y=a^x$ and $y= e^x$ and transformations of these graphs	• know and be able to use the function $a^x$and its graph, where a is positive; • know and be able to use the function $e^x$and its graph;	End of topic assessment	Textbook/Practice Book/Other online resources These include:	Grateful for the real-life applications of graphs.	Statistics-exponential models Index laws

	• **Modelling,** differentiate e^{kx} and understand why this result is important, recognise the relationship between exponents and logarithms. **USE exam questions as well** • **Logarithms –** Introduce and solve equations of the form $a^x = b$ • Laws of logarithms • Solve equations with logarithms • Working with natural logarithm function • Use Logarithms to estimate the values of the constants in non-linear models	• know that the gradient of e^{kx} is equal to ke^{kx} and hence understand why the exponential model is suitable in many applications; • know and be able to use the definition of $log_a x$ as the inverse of a^x, where a is positive and $x \geq 0$; • know and be able to use the function $\ln x$ and its graph; • know and be able to use $ln\, x$ as the inverse function of e^x; • understand and use the laws of logarithms: $log_a x + log_a y = log_a(xy)$ $log_a x - log_a y = log_a\left(\frac{x}{y}\right)$ $k\, log_a x = log_a x^k$ (including, for example, $k = -1$ and $k = -\frac{1}{2}$) • be able to solve equations of the form $a^x = b$; • be able to use logarithmic graphs to estimate parameters in relationships of the form $y = ax^n$ and		-Videos -Practice questions -Past exam questions -Opportunities for flipped learning	Courageous and resilient in the application of logs to change into an exponential model. Exposure to real-world exponentials modelling examples. Access to software or online tools that model exponentials. **Science** **Computing** **Economics** Scientist Engineers Statisticians	

		$y = kb^x$, given data for x and y; • understand and be able to use exponential growth and decay in modelling, giving consideration to limitations and refinements of exponential models.				
Summer Term						
Data collection	• Populations and samples • Random sampling • Non-random sampling • Types of data • The large data set	• understand and be able to use the terms 'population' and 'sample'; • know how to use samples to make informal inferences about the population; • be able to describe advantages and disadvantages of sampling compared to census. • understand and be able to use sampling techniques; • be able to describe advantages and disadvantages of sampling techniques; • be able to select or critique sampling techniques in the	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	Acting with Truth and Integrity To ensure appropriate sampling methods are used Creation and Environment The common good **Exposure to weather reports that showcase how data is dealt with.** Physiology **Sociology** **Geography** Meteorologist Statisticians Data Analyst **Chartered Accountant**	

		context of solving a statistical problem; • understand that different samples can lead to different conclusions about the population. •				
Measures of location and spread	• Measures of central tendency • Other measures of location • Measures of spread • Variance and standard deviation • Coding	• be able to calculate measures of location, mean, median and mode; • be able to calculate measures of variation, standard deviation, variance, range and interpercentile range; • be able to interpret and draw inferences from summary statistics.	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	Acting with Truth and Integrity ensures data is interpreted in a fair and precise manner Creation and Environment The common good Physiology **Sociology** Access to software that allow students to visually interpret calculations. Meteorologist **Chartered Accountant**	
Representation of data	• Outliers • Box plots • Cumulative frequency • Histograms • Skewness • Comparing data	• know how to interpret diagrams for single variable data; • know how to interpret scatter diagrams and regression lines for bivariate data; • recognise the explanatory and response variables;	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions	Acting with Truth and Integrity ensures the appropriate representations are used for a fair conclusion Creation and Environment The common good Physiology **Sociology**	

		• be able to make predictions using the regression line and understand its limitations; • be able to select or critique data presentation techniques in the context of a statistical problem; • be able to clean data, including dealing with missing data, errors and outliers.		-Opportunities for flipped learning	Access to software that allow students to visually interpret calculations. Meteorologist **Chartered Accountant**	
Correlation	• Correlation • Linear regression	• be able to make predictions using the regression line and understand its limitations; • understand informal interpretation of correlation; • understand that correlation does not imply causation;	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	Acting with Truth and Integrity Will enable fair conclusions based on predictions Creation and Environment The common good Physiology **Sociology** Access to software that allow students to visually interpret calculations. Meteorologist **Chartered Accountant**	
Probability	• Calculating probabilities • Venn diagrams • Mutually exclusive and	• understand and be able to use mutually exclusive and independent events when calculating probabilities;	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos	Make sure that pupils understand the fact that mutually exclusive events cannot happen at the same time. This knowledge will help pupils to avoid confusion in later years with independent events.	Fractions, decimals and percentages

	• independent events • Tree diagrams	• be able to make links to discrete and continuous distributions.		-Practice questions -Past exam questions -Opportunities for flipped learning	Pupils may also be confused by sentences with the words 'or' and 'and'. Explain the meanings carefully. United in Harmony Creation and Environment Peace Physiology Politics **Sociology** Sports Politics Insurance Statistics Meteorologist Actuaries	
Statistical distributions	• Probability distributions • The binomial distribution • Cumulative probabilities	• understand and be able to use simple, discrete probability distributions, including the binomial distribution; • be able to identify the discrete uniform distribution; • be able to calculate probabilities using the binomial distribution.	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	Discerning and joyful This topic combines pupils' understanding of experimental and theoretical probability and applies it in a real-life context. Creation and Environment Peace Physiology Politics **Sociology** **Access to software that allow students to visually interpret calculations.** Sports Politics Insurance Statistics Meteorologist	Probability Binomial expansion

Year 12 Maths Curriculum Map

					Actuaries **Chartered Accountant**	
Hypothesis testing	• Hypothesis testing • Finding critical values • One–tailed test • Two-tailed test	• understand and be able to apply the language of statistical hypothesis testing, developed through a binomial model. • be able to conduct a statistical hypothesis test for the proportion in the binomial distribution and interpret the results in context; • understand that a sample is being used to make an inference about the population; • appreciate that the significance level is the probability of incorrectly rejecting the null hypothesis.	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	Acting with Truth and Integrity Will enable fair conclusions based on predictions Creation and Environment **Understanding the cultural significance of certain hypothesis in different communities** Physiology Politics **Sociology** Sports Politics Insurance Statistics Meteorologist Actuaries **Chartered Accountant**	Types of data
Modelling in Mechanics	• Constructing a model • Modelling assumptions • Quantities and units	• understand the concept of a mathematical model, and be able to abstract from a real-world situation to a mathematical description (model);	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions	Acting with Truth and Integrity Will enable fair conclusions based on assumptions made Creation and Environment Physics STEM	Expand and factorising expressions

	• Working with vectors	• know the language used to describe simplifying assumptions; • understand the particle model; • be familiar with the basic terminology for mechanics; • be familiar with commonly-made assumptions when using these models; • be able to analyse the model appropriately, and interpret and communicate the implications of the analysis in terms of the situation being modelled; • understand and use fundamental quantities and units in the S.I. system: length, time and mass; • Understand that units behave in the same way as algebraic quantities, e.g. meters per second is $m/s = m \times 1/s = ms^{-1}$. • understand and use derived quantities and units: velocity, acceleration, force, weight;		-Past exam questions -Opportunities for flipped learning	**Exposure to real-world examples and applications of Mechanics through field trips or guest speakers.** **Electrical engineer** **Control systems engineer** **Mathematician** **Physicist** **Software developer**	

		• know the difference between position, displacement and distance; • know the difference between velocity and speed, and between acceleration and magnitude of acceleration; • know the difference between mass and weight (including gravity); • understand that there are different types of forces.				
Constant acceleration	• Displacement – time graphs • Velocity – time graphs • Equations of motion 1 • Equations of motion 2 • Vertical motion under gravity	• be able to draw and interpret kinematics graphs, knowing the significance (where appropriate) of their gradients and the areas underneath them. • recognise when it is appropriate to use the *suvat* formulae for constant acceleration; • be able to solve kinematics problems using constant acceleration formulae;	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	By **leading for justice**, **truth, and integrity**, students approach Displacement-time graphs with honesty and fairness, making unbiased conclusions based on the evidence presented by the graph. Creation and Environment Physics STEM **Exposure to real-world examples and applications of Mechanics through field trips or guest speakers.** **Electrical engineer** **Control systems engineer**	Rates of change Speed, distance and time graphs

		• be able to solve problems involving vertical motion under gravity.			**Mathematician** **Physicist** **Software developer**	
Forces and motion	• Force diagrams • Forces as vectors • Forces and acceleration • Motion in2D • Connected particles • Pulleys	• understand the concept of a force; understand and use Newton's first law. • understand and be able to use Newton's second law for motion in a straight line (restricted to forces in two perpendicular directions or simple cases of forces given as 2D (**i**, **j**) vectors.); • understand and use Newton's third law; equilibrium of forces on a particle and motion in a straight line; application to problems involving smooth pulleys and connected particles.	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos -Practice questions -Past exam questions -Opportunities for flipped learning	**United in Harmony**: Studying Forces and Motions involves understanding and applying mathematical relationships that create harmony and balance in geometric structures. Creation and Environment Physics STEM **Exposure to real-world examples and applications of Mechanics through field trips or guest speakers.** **Electrical engineer** **Control systems engineer** **Mathematician** **Physicist** **Software developer**	Vectors Parallel and perpendicular lines-coordinate geomtry
Variable acceleration	• Functions of time • Using differentiation • Maxima and minima problems	• be able to use calculus (differentiation) in kinematics to model motion in a straight line for a particle moving with variable acceleration;	End of topic assessment	Textbook/Practice Book/Other online resources These include: -Videos	**Leading for Justice, Truth, and Integrity** Students can explore how calculus enables us to model and analyse real-world phenomena accurately. By employing calculus,	Gradient Different types of graphs Differentiation Integration

	• Using integration • Equations of motion	• understand that gradients of the relevant graphs link to rates of change; • know how to find max and min velocities by considering zero gradients and understand how this links with the actual motion (i.e. acceleration = 0). • be able to use calculus (integration) in kinematics to model motion in a straight line for a particle moving under the action of a variable force; • understand that the area under a graph is the integral, which leads to a physical quantity; • know how to use initial conditions to calculate the constant of integration and refer back to the problem.		-Practice questions -Past exam questions -Opportunities for flipped learning	mathematicians and scientists can make informed decisions, solve problems, and gain a deeper understanding of the natural world. Creation and Environment Physics STEM **Exposure to real-world examples and applications of Mechanics through field trips or guest speakers.** **Electrical engineer** **Control systems engineer** **Mathematician** **Physicist** **Software developer**	