

Curriculum Exploration

To help you understand what your pupils will be learning at school, look at the topics covered in the subject you will be teaching and find these in the national curriculum. What skills and knowledge are required at this stage?

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Key Stage 4 – Physics

Find the topics covered in the Physics course in the [National Curriculum for Key Stage 4 Science](#). What knowledge and skills are required at this stage?

	Tutorial 1	Tutorial 2	Tutorial 3	Tutorial 4
Maths Skills in Physics	Working with Values	Working with Equations	Working with Graphs	Working with Gradients
Practical Skills in Physics	Scientific Thinking	Planning	Measurements – Part 1	Measurements – Part 2
Motion	Speed and Velocity	The Distance-Time Graph	Acceleration	The Velocity-Time Graph
Force	Forces	Resultant Forces	Resolution of Forces	Force and Elasticity
Force and Motion	Newton's First Law of Motion	Newton's Second and Third Law of Motion	Terminal Velocity	Force and Motion on the Road

Key Stage 4 – Biology

Find the topics covered in the Biology course in the [National Curriculum for Key Stage 4 Science](#). What knowledge and skills are required at this stage?

	Tutorial 1	Tutorial 2	Tutorial 3	Tutorial 4
Cells	Cell Structure	The Cell Cycle	Stem Cells	Lifestyle and Disease
Core Practicals	Skills	Sampling and Fieldwork	Osmosis Practical	Enzymes and PH Core Practical
Homeostasis and Response	The Human Nervous System	Homeostasis	Regulation of Blood Glucose	Hormonal Control of Reproduction
Infection and Disease	Pathogens	The Immune System	Vaccination	Antibiotics and Resistant Bacteria
Inheritance and Genetics	Inheritance	Variation and Evolution	Selective Breeding	Genetic Engineering

Key Stage 4 – Chemistry

Find the topics covered in the Chemistry course in the [National Curriculum for Key Stage 4 Science](#). What knowledge and skills are required at this stage?

	Tutorial 1	Tutorial 2	Tutorial 3	Tutorial 4
Moles	Moles	Amounts and Substances in Equations	Percentage Yield and Atom Economy	Moles and Gas Volumes
Acids, Bases and Salts	Acids and Bases	Reactions of Acids	Synthesis of a Pure, Dry Soluble Salt	Testing for Ions
Titrations	Concentrations of Solutions	Titration Practical	Titration Calculations	Titration Curves
The Reactivity Series and Electrolysis	The Reactivity Series	Electrolysis (part 1) – Molten Compounds	Electrolysis (part 2) – Aqueous Solutions	Electrolysis in Industry
Energetics, Rates and Equilibria	Exothermic and Endothermic Reactions	Rates of Reaction	Factors Which Affect the Rate of Reaction	Equilibrium

Key Stage 3 – Maths

Find the topics covered in the Maths course in the [National Curriculum for Key Stage 3 Maths](#). What knowledge and skills are required at this stage?

	Tutorial 1	Tutorial 2	Tutorial 3	Tutorial 4
Indices and Surds	Powers	Laws of Indices	Negative and Fractional Indices	Simplifying Surds
Linear Graphs	Plotting Linear Graphs	Finding Equations of Lines	Finding Equations from Points	Parallel Lines and Problem Solving
Histograms	Drawing Histograms	Interpreting Histograms	Estimating Frequencies	Estimating the Median
Ratio	Working with Ratios	Ratios, Fractions, and Algebra	Combining and Changing Ratios	Geometric Problems
Angles	Basic Angle Rules	Triangles and Quadrilaterals	Parallel Lines	Polygons

Key Stage 4 – Maths

Find the topics covered in the Maths course in the [National Curriculum for Key Stage 4 Maths](#). What knowledge and skills are required at this stage?

	Tutorial 1	Tutorial 2	Tutorial 3
Ratio and Proportion	Writing, Interpreting, and Using Ratios	Proportional Reasoning in Everyday Contexts	Proportional Reasoning in Geometry
Fractions, Decimals, Percentages, and Proportionality	Fractions and Decimals in Numerical and Algebraic Contexts	Percentage Changes in Numerical and Algebraic Contexts	Direct and Inverse Proportion
Simplifying Expressions & Solving Equations	Simplifying Algebraic Expressions	Solving Linear Equations	Solving Quadratic Equations
Measurement and Geometry	Area, Volume and Units	Ratios, Fractions, and Algebra	Pythagoras' Theorem and Trigonometry in 2D Right-angled Triangles
Angles	Basic Angle Rules	Geometrical Reasoning with Angles	Parallel Lines
Graphs	Plotting Graphs and Solving Equations	Straight Line Graphs	Graphs in real-life contexts
Probability and Statistics	Calculating and Comparing Probabilities	Comparing and Representing Data	

Key Stage 3 – English

Find the topics covered in the English course in the [National Curriculum for Key Stage 3 English](#). What knowledge and skills are required at this stage?

	Tutorial 1	Tutorial 2	Tutorial 3	Tutorial 4
Descriptive and Narrative Writing	Varying Vocabulary for Effect	Exploring Effective Examples	Using Language and Varied Sentence Structure for Effect	Exploring effective openings and how authors build suspense
Transactional Writing	Understanding Purpose, Audience, and Form & Exploring the effect of transactional writing techniques	Understanding and identifying newspaper features & practising writing to inform	Planning a newspaper & exploring newspaper writing examples	Extended Writing: Writing a Newspaper Article
Reading and Understanding Unseen Extracts	Reading and understanding non-fiction Texts & understanding unfamiliar vocabulary	Identifying evidence to support a point, identifying techniques in non-	Comparing non-fiction texts & critically evaluating non-fiction texts	Extended Writing: Short comprehension questions & comparative

		fiction texts & analysing the effect of techniques on the audience		analysis questions about non-fiction extracts
Analysing Poetry	Understanding and identifying poetic devices	Reading and understanding poetry & identifying and analysing poetic devices	Reading and understanding poetry & identifying and analysing poetic devices	Extended Writing: comparative poetry analysis
Analysing Fiction	Understanding Language & Structural Features	Reading and Understanding Fiction Texts & Annotating Fiction Texts	Analysing the effect of language and structural features & using PETE to analyse fiction texts	Extended Writing: analysing fiction using PETE paragraphs

Key Stage 4 – English

Find the topics covered in the English course in the [National Curriculum for Key Stage 4 English](#). What knowledge and skills are required at this stage?

	Tutorial 1	Tutorial 2	Tutorial 3	Tutorial 4
Shakespearean Context	Shakespearean Theatre	The lives of Women in Shakespeare's England	Kingship in Shakespeare's World	Intertextuality: Allusion, Influences, and Sources
Creative Writing	Setting	Characterisation	Structuring an Effective Piece of Writing	Sentence Structure and Language Patterns
The Victorian Era: Context	The Industrial Revolution	Class in Victorian England	The Lives of Children	The Role of Women
Unseen Poetry	Language Techniques	Structural Devices	Exploring Hidden Meanings	Comparing Poems
Writing Non-Fiction	Form, Audience, and Purpose	Using Language Effectives	Structuring an Effective Piece of Writing	Redrafting & Editing