Pool Hayes Academy

Key Stage Three Exams – Year 8

Unlocking your potential: KS3 Powerful Knowledge

To prepare our students for their upcoming KS3 exams, please see the Powerful Knowledge they should revise in readiness for this:

English	
19th Century	Personalised Unit
Content: To explore key ideas through a range of non-fiction texts drawing comparison between the 19th century and 20/21 Century • Students will know and understand life in Victorian England; • Students will know the importance of the Victorian era in the cultural development of Britain ; • Students will know and understand the beliefs and ideas of Victorian society towards a range of issues; • Students will know and draw comparisons between the beliefs and ideas of Victorian writers compared to contemporary views; • Students will know and understand different ways writers express their opinions on class, gender, education, crime, medicine and religion (articles, essays, letters); • Students will know and understand how to discern a person's attitude/viewpoint through analysis of their writing; Students will be able to define tone and be able to identify a writer's tone through their use of language and grammatical structures	Further work on: Evaluation, Comparison Narrative, Non-Fiction Other units: Different types of writing: Letter, review Media Students will: • Explore the themes of the novel. • Comment on the effects of language and structure on the reader. • Understand writer's intentions when creating a text.

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Maths	
In Maths there are 3 tiers of exam: challenge, core and support. Your child will know what they have been studying; if they are unsure, they can ask their Maths teacher.	
Core **Round to any given degree of accuracy (dp and sf)** **Estimating answers**	**Challenge** Calculating with error intervals Truncation **Support** Round to nearest 10, 100, 1000, whole Round to 1dp
Core **Convert between fractions, decimals and percentages** **Ordering fractions, decimals and percentages** **Expressing one number as a fraction or decimal of another number**	**Challenge** Percentage change (Profit/loss) $\frac{1}{2}, \frac{1}{4}, \frac{3}{4}, \frac{1}{10}, \frac{1}{5}, \frac{1}{20}, \frac{1}{100}$ **Support** Conversion of FDP: *12, 14, 34, 110, 15, 120, 1100* Ordering of FDP using above conversions
Core **Identify equation, expression, identity and formulae** **Expanding a single bracket** **Expanding two brackets by a single term and then simplify the result** **Factorising expressions by a single term**	**Challenge** Expanding two brackets to give a quadratic Factorising quadratics **Support** Collecting like terms; two variables Expand a single bracket by a number
Core **Calculate percentage increase** **Calculate percentage decrease** **Expressing one number as a percentage of another number**	**Challenge** Reverse percentage Simple intertest **Support** Calculate a percentage mentally Calculate a percentage with a calculator
Core **Interpret and draw two-way tables** **Interpret and draw frequency trees** **Display grouped data (frequency diagram and frequency polygon)** **Interpret and draw Multiple/Composite bar charts**	**Challenge** Problem solving questions for two-way tables Probability from tables **Support** Interpret and draw tally tables, bar charts and pictograms
Core **Writing ratios in the form 1:n** **Simple map scales** **Solve ratio problems**	**Challenge** Combining ratio Map Scales **Support** Simplifying ratio including mixed units Sharing in the ratio
Core **Use the Unitary Method for proportion** **Currency Conversions** **Best Buys** **Recipes**	**Challenge** Similar shapes Graphing Proportion **Support** Proportion as a fraction of a whole
Core **Calculate the area of a trapezium** **Calculate the area of Compound Shapes** **Labelling Parts of a Circle** **Calculate the area of Circles** **Calculate the circumference of Circles**	**Challenge** Calculate Arc Length and Sector Area Area involving algebra **Support** Areas of Rectangles, triangles, parallelograms Area and perimeter of rectilinear compound shapes
Core **Addition and subtractions of fractions including mixed numbers** **Multiplication of Fractions (Including Mixed Numbers)** **Division of Fractions (including Mixed Numbers)**	**Challenge** Algebraic Fractions: addition, subtraction, multiplication, division **Support** Addition and subtraction of fractions where the denominator are multiples Converting mixed numbers and improper fractions

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Science	
Biology	**Food, Diet & Digestion** **Healthy Diet** • Students learn what makes a **balanced diet** and what each food group does. • They **test foods** in practical lessons and compare energy needs for different people (e.g., athletes, pregnant women). • They explain what happens when the **diet is unbalanced and how problems** can be treated. **Digestive System** • Students describe the **structure of the digestive system** and the job of each organ. • They learn what **enzymes are, how they work**, and how they break down food.
Chemistry	**Reactions & Acids** **Reactivity and Conservation** • Law of **Conservation of Mass** – total mass of reactants = total mass of products. • Atoms rearrange during chemical reactions, and no atoms are lost or made. • Reactants change into products with new properties. **Types of Reactions** • **Combustion** – burning with oxygen, releases energy. • **Oxidation** – substance gains oxygen (e.g., rust). • **Neutralisation** – acid + alkali → salt + water. • **Thermal decomposition** – heating breaks substances apart. • **Displacement** – a more reactive element pushes out a less reactive one. **Signs of a Reaction** • Colour change, temperature change, bubbles/gas, or a solid forming. **Chemical Equations & Symbols** • Use of **word equations** (e.g., magnesium + oxygen → magnesium oxide). • Introduction to **symbol equations** and balancing ($Mg + O_2 \rightarrow MgO$). **Acids, Bases & pH** • Acids: pH < 7; Alkalis: pH > 7. • Indicators show pH. • Acids react with **metals, metal oxides, carbonates, and alkalis** to make salts.
Physics	**Electricity** • Students draw **circuit diagrams** using correct symbols. • They explain how circuits work and the differences between **series and parallel circuits**. • They learn what **current and potential difference** (voltage) are and how they differ. • They explore how **current changes with voltage**. • They learn **what resistance is** and calculate it using voltage and current. • They identify **conductors and insulators**. • They learn how **objects become charged** and how electric fields and static electricity work. **Magnetism** • Students describe **magnets, magnetic materials, attraction and repulsion**. • They draw magnetic field lines for bar magnets and learn about **Earth's magnetic field**. • They learn what **electromagnets** are, how to make them, how to make them stronger, and where their field is strongest. • They compare **permanent magnets and electromagnets** and test how changes affect strength. • They learn **real-life uses of electromagnets** (e.g., electric bells, circuit breakers).

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Spanish

• Types of homes/houses • Rooms in the house • Describing rooms in the house. • Furniture • Activities with friends at home • Bedroom • Ideal house/bedroom.	• Describing towns. • Compass points • Directions • Countries • Weather

Geography

What are the factors influencing globalisation and how has globalisation impacted LIC's and NEE's?	How are resources distributed around the globe and what factors influence the demand both now and in the future?
• To explore the classification of development using indicators • To investigate the economic sectors including primary, secondary and tertiary. • To define globalisation and look at the causes. • To explore the factors impacting globalisation • To investigate how TNC's have influenced countries around the world • To explore at least one TNC case study including which will include their impact on LIC's or NEEs	• To explore the definition and types of resources • To be able to explain the differences between Renewable and non-renewable resources • To analyse the distribution of resources around the world • To investigate the factors impacting supply and demand around the world. • To understand the reasons for rising consumption. • To explore the Impacts of resource security • To investigate a chosen case study of a resource (food, water, energy)

History

How was power challenged in the Early Modern period?	The Industrial Revolution: Did industrialisation improve peoples' lives?
• The causes and consequences of the Gunpowder Plot • The 'world turned upside down', e.g. causes of the Civil War, Royalists v Parliamentarians, execution of Charles I and the rule of Oliver Cromwell • The Restoration of the Monarchy: Charles II • The causes and consequences of the Glorious Revolution, including the Bill of Rights and constitutional monarchy	• The significance of the Agricultural Revolution, e.g. more profitable farming techniques, fertiliser and field drainage • Inventions of the Industrial Revolution, e.g. canals and waterways, the water frame, cotton mills, steam engine. • The impact of urban migration, e.g. growth of towns like Birmingham, Manchester and Glasgow, poor living conditions (cholera) • The 'coming of the factory', e.g. dangerous working conditions, child labour.