# BENSHAM MANOR School

## Science Year 7 Route 1 (7AB, 7AH, 7DD) Curriculum Map 2026-27

The curriculum is designed for students to have fun and enjoy science lessons. The aim is for students to appreciate the value of science in their everyday lives. We want to help our young learners understand the world around them and make relevant connections. We encourage students to express their own thoughts and ideas, become curious learners; asking questions and developing independence and communication skills. We motivate students to reach their full potential by building on prior learning and skills, supporting and scaffolding their learning so they can achieve at all levels. Students are encouraged to address misconceptions, develop scientific skills and key scientific concepts that can be built upon across the KS3 curriculum and expanded upon in KS4. The KS3 curriculum topics have been carefully sequenced so students gain a firm foundation in year 7 and will help them to progress into year 8. KS1 and KS2 knowledge is secured as appropriate. The desired outcome is cohort-specific; all students progress their way through the science solar steps which are based on knowledge and skills.

| Topic Title | Topic overview | Knowledge and Skills | Assessment | Keywords |
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| **Autumn term 1**<br><br>1) Introduction to science | In this unit students learn how to find their way around a lab, they are introduced to key pieces of equipment and they learn how to work safely. | • Naming equipment and giving uses<br>• Identify dangers in the science lab<br>• List the safety rules of the laboratory<br>• Lighting a Bunsen burner<br>**<u>Working Scientifically</u>**<br>Using and recognising scientific equipment, making observations and recording | Teacher assessment through a variety of activities - quizzes, word wall, games, questioning, role play, speaking activities, card sorts, photographs of learners carrying out activities, storyboards, presentations/posters, evaluation sheets and testing | hazard<br>burner<br>test tube<br>tripod<br>heatproof mat<br>beaker<br>thermometer<br>measuring cylinder<br>filter funnel + paper<br>safety spectacles<br>Bunsen<br><br>boiling tube<br>gauze<br>pipette<br>spatula<br>tongs<br>splint<br>stop clock |
| **Autumn Term 1**<br>2) Forces | In this unit students will draw on their experiences of forces, they will explore and learn about different types of forces. They will learn how to measure forces and represent forces using diagrams. | • Describing forces by name<br>• Measuring forces using a Newton metre<br>• Representing forces using arrows.<br>• Understanding balanced and unbalanced forces.<br>• Investigating friction.<br>• Investigating pressure<br>**<u>Working Scientifically</u>**<br>Exploring, investigating, classifying, making observations, using equipment, recording observations and taking measurements, gathering and recording data, drawing conclusions, using scientific vocabulary | Teacher assessment through a variety of activities - quizzes, word wall, games, questioning, role play, speaking activities, card sorts, photographs of learners carrying out activities, storyboards, presentations/posters, evaluation sheets and testing | push<br>twist<br>non-contact<br>gravity<br>water resistance<br>Newton<br>Newton metre<br>unbalanced<br>pull<br>contact<br>friction<br>air resistance<br>weight<br>upthrust<br>balanced |

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| **Autumn Term 2**<br><br>3) Electricity and magnetism | In this unit students learn about the uses and properties of magnets and the dangers and uses of electricity.<br>Students build and draw simple circuits and investigate which materials are conductors and insulators. | ● Naming magnetic materials<br>● Investigating magnetism<br>● Describing dangers and electrical safety<br>● Understanding how electricity is produced<br>● Naming and identifying electrical components<br>● Building and drawing electrical circuits<br>● Measuring current using an ammeter<br>● Investigating series and parallel circuits<br>● Investigating conductors and insulators<br>**<u>Working Scientifically</u>**<br>Using equipment, making and recording observations, gathering data, noticing patterns, drawing conclusions, classifying and using scientific vocabulary | Teacher assessment through a variety of activities - quizzes, word wall, games, questioning, role play, speaking activities, card sorts, photographs of learners carrying out activities, storyboards, presentations/posters, evaluation sheets and testing | magnetism<br>south pole<br>repel<br>force<br>cobalt<br>component<br>battery<br>bulb<br>ammeter<br>parallel circuit<br>amps<br>insulator | north pole<br>attract<br>magnetic field<br>iron<br>steel<br>wires<br>cell<br>buzzer<br>motor<br>series circuit<br>conductor |
| **Spring Term 1**<br><br>4) Energy | This unit introduces the idea that stores of energy are needed to make most things happen. It looks at food energy stores and transfers and energy resources in terms of non-renewable and renewable and their impact on the environment. | ● Naming and identifying different energy forms.<br>● Investigating energy in food<br>● Drawing energy transfer diagrams<br>● Naming fuels and describing the formation of fossil fuels.<br>● Describing different forms of renewable and non-renewable energy.<br>● Describing the greenhouse effect and its impact on the environment<br>**<u>Working Scientifically</u>**<br>Predicting, Using equipment, making and recording observations, gathering data, noticing patterns, drawing conclusions, evaluating, suggesting, interpreting data improvements, identifying variables, classifying and using scientific vocabulary | Teacher assessment through a variety of activities - quizzes, word wall, games, questioning, role play, speaking activities, card sorts, photographs of learners carrying out activities, storyboards, presentations/posters, evaluation sheets and testing | energy<br>chemical energy<br>gravitational energy<br>elastic energy<br>light energy<br>energy<br>energy transfer<br>fossil fuel<br>renewable<br>climate change<br>greenhouse effect | Joule<br>kinetic energy<br>thermal energy<br>sound energy<br>electrical<br><br>fuel<br>biofuel<br>non-renewable<br>global warming |
| **Spring Term 2** | In this unit students sort materials according to their properties, they classify solids, | ● Identifying and sorting a variety of materials. | Teacher assessment through a variety of activities - quizzes, word wall, games, | materials<br>states of matter<br>liquid | property<br>solid<br>gas |

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| 5) Materials, particles and their behaviour | liquids and gases and learn about particle theory. They investigate how substances can change from one state of matter to the next and the processes involved. They are introduced to diffusion and gas pressure. | ● Identifying properties of materials, sorting materials according to their properties.<br>● Classifying solids, liquids and gases according to their properties.<br>● Describe, draw and recognise the arrangement of particles in solids, liquids and gases.<br>● Using particle theory to explain the properties of the three states of matter.<br>● Investigating changes of states.<br>● Investigating diffusion – What is diffusion? Explaining diffusion using particle theory.<br>● Say what is meant by gas pressure and recall some of its effects.<br>● Describe the cause of gas pressure using particle theory.<br>**<u>Working Scientifically</u>**<br>Sorting, classifying, asking questions, using models, observation, explaining, using scientific vocabulary | questioning, role play, speaking activities, card sorts, photographs of learners carrying out activities, storyboards, presentations/posters, evaluation sheets and testing | volume<br>rigid<br>particle<br>heat<br>boiling<br>melting<br>condensing<br>boiling point<br>diffusion | compress<br>fluidity<br>vibrate<br>cool<br>freezing<br>evaporating<br>melting point<br>freezing point |
| **Summer Term 1**<br><br>6) Atoms, elements, and compounds | This unit expands on particle theory and introduces atoms, molecules, elements and compounds. It introduces the periodic table and the differences between metals and non-metals. Students practically make a compound from two elements. | ● Know what an atom is. Recognise the difference between an atom and a molecule.<br>● Identifying elements, mixtures and compounds from descriptions and particle diagrams.<br>● Identify common elements in the periodic table.<br>● Describe and identify metals and non-metals by their properties.<br>● Making the compound iron sulphide from its elements and comparing the properties.<br>**<u>Working scientifically</u>** | Teacher assessment through a variety of activities - quizzes, word wall, games, questioning, role play, speaking activities, card sorts, photographs of learners carrying out activities, storyboards, presentations/posters, evaluation sheets and testing | atom<br>mixture<br>compound<br>oxygen<br>hydrogen<br>metal<br>shiny<br>conductors<br>malleable | molecule<br>element<br>periodic table<br>iron<br>magnesium<br>non metal<br>dull<br>insulators<br>brittle |

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| | | Questioning and explaining, research, sorting and classifying, recording observations, using equipment | | |
| **Summer Term 2**<br><br>7) Mixtures and Separation | In this unit students practically explore different separating techniques and how to apply them. They separate a variety of mixtures using the following techniques - sieving, filtering, evaporating. | ● Why do we separate mixtures?<br>● Separating a variety of solid mixtures using sieves and colanders.<br>● Separating a variety of solid and liquid mixtures using filtering and sieving.<br>● Separating salt from water using evaporation.<br>● Separating salt from dirty muddy salty water using sieving, filtering and evaporation.<br>● Separating drinking water from salty water.<br>● Separating different inks using chromatography.<br>● Problem solving using separation techniques - Abandoned on a desert island + murder in the classroom.<br>**<u>Working scientifically</u>**<br>Using equipment, observation, recording, interpreting, concluding, using scientific vocabulary | Teacher assessment through a variety of activities - quizzes, word wall, games, questioning, role play, speaking activities, card sorts, photographs of learners carrying out activities, storyboards, presentations/posters, evaluation sheets and testing | mixture sieving<br>filtering evaporating<br>distillation<br>chromatography<br>solution dissolves<br>solute solvent<br>condensing boiling<br>soluble insoluble<br>filtrate residue |