Long Term Plan
KS4: Pathway 2 Science

Groveside School

Year 1

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Target Qualification:	**Science Today Entry Pathways Diploma** (Entry 2 or Entry 3 depending on ability)– 37 Credits minimum.					
Unit Title:	Working with Electrical Circuits	Energy in the Home and Workplace	Science and The Human Body	Variation and Adaptation	The Science of Light and Sound	Food and Health
Unit Ref No.	**Entry 2:** D/503/3963 **Entry 3:** H/503/3964	**Entry 2:** K/503/3965 **Entry 3:** M/503/3966	**Entry 2:** J/503/3956 **Entry 3:** F/503/3955	**Entry 2:** R/503/3961 **Entry 3:** Y/503/3962	**Entry 2:** Y/503/3959 **Entry 3:** L/503/3960	**Entry 2:** A/600/8921 **Entry 3:** Y/600/8926
WJEC credits:	3	3	3	3	3	4
Skills, Knowledge and Learning:	**Skills**: Pupils gain hands-on experience in building and testing circuits, handling components safely, and using measuring equipment (ammeter, voltmeter). They problem-solve when circuits don't work and learn to follow clear procedures. **Knowledge**: Basic principles of electricity; components and their symbols; difference between series and parallel; current and	**Skills**: Pupils learn to identify appliances, interpret energy rating labels, and compare efficiency. They practise decision-making and critical thinking in considering energy use. **Knowledge**: Renewable vs non-renewable energy sources; energy efficiency; energy safety in everyday contexts.	**Skills**: Pupils practise observing, identifying, and labelling body systems, matching structures to functions, and using key vocabulary. They learn to link lifestyle choices to scientific explanations. **Knowledge:** Names, positions, and functions of major body systems (skeletal, muscular, digestive, circulatory) and how lifestyle factors (diet, smoking,	**Skills**: Pupils practise classifying and comparing living things, observing adaptations, and making simple records. They develop critical thinking around why species differ. **Knowledge**: Differences within species; inherited vs environmental variation; how adaptations support	**Skills**: Pupils use mirrors, prisms, and sound-making devices to explore properties. They measure, record, and present findings using models and diagrams. They practise explaining effects such as reflection or pitch. **Knowledge**: Properties of light (reflection, refraction, spectrum of colour); properties of sound (vibration, pitch,	**Skills**: Pupils develop practical cooking skills, apply hygiene procedures, plan balanced meals, and work collaboratively. They learn independence in preparing food and evaluating outcomes. **Knowledge**: Nutrients and their functions; dietary needs of different groups; consequences of poor diet; principles of food hygiene and storage.

Long Term Plan
KS4: Pathway 2 Science

Groveside School

	voltage in simple terms. **Learning**: Pupils will understand how electricity works in everyday devices and be able to apply safe practices when working with electrical equipment at school and at home.	**Learning**: Pupils will be able to make informed choices about energy use, understand the environmental implications, and apply strategies to reduce waste in their daily lives.	exercise) influence health. **Learning:** Pupils can explain body functions, discuss the impact of choices on health, and apply this understanding to personal well-being and decisions.	survival in different environments. **Learning**: Pupils will understand that organisms differ and adapt to survive, building the foundation for later ideas about evolution and biodiversity.	volume); real-world applications. **Learning**: Pupils will understand how light and sound travel and interact with matter, and how these principles underpin everyday technologies (e.g. lenses, musical instruments).	**Learning**: Pupils will be able to plan and prepare healthy meals, explain the importance of balanced nutrition, and apply safe practices in food preparation.
Enrichment/ Experiences:	Trip to a science museum (Winchester Science Centre). Building simple buzz-wire games or torches. Workshop: invite an electrician to demonstrate real-world circuit use.	Visit a power station, renewable energy centre, or eco-building. Practical: run a “save energy challenge” in school, monitoring electricity use. Guest talk: energy advisor on saving energy at home.	Visit to a local sports centre or gym to explore exercise and body systems. Guest speaker: nurse, physiotherapist, or personal trainer (talk about healthy living). Fun activity: pulse and lung capacity investigations with sports equipment.	Zoo or wildlife park trip to see adaptations in animals (e.g. camels, penguins). Local nature walks to spot variation in plants/animals.	Visit a planetarium or science show with light/sound demos. Shadow puppet theatre or making simple periscopes. Musical Workshop.	Visit to a supermarket (healthy eating treasure hunt). Cooking a healthy meal. Guest speaker: nutritionist or chef to talk about food choices.
Curriculum End Point / Goals:	By the end of Year 1, pupils will have developed a secure foundation in applied science through engaging, practical topics. They will understand the structure and function of the human body, the safe use and application of electrical circuits, and how energy is used in the home and workplace. Pupils will also be able to describe variation and adaptation in living things, explain how light and sound behave, and apply their knowledge of diet and nutrition to planning and preparing healthy meals. Across these units, learners will demonstrate their ability to work safely in practical investigations, follow instructions to set up and use equipment, record simple observations, and apply scientific ideas to everyday life.					

Long Term Plan
KS4: Pathway 2 Science

Groveside School

Year 2

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Target Qualification:	**Science Today Entry Pathways Diploma** (Entry 2 or Entry 3 depending on ability)– 37 Credits minimum.					
Unit Title:	Science and our Universe	Science and the Plant World	Health and Safety & Chemical Products used in the home and their Environmental Impact	Making useful compounds	Climate Change: Causes, Effects and Human Responses	Catch-up, portfolio completion, or extension project (extra evidence time)
Unit Ref No.	**Entry 2:** K/503/3951 **Entry 3:** M/503/3952	**Entry 2:** L/503/3957 **Entry 3:** R/503/3958	**Health and Safety:** **Entry 2:** H/503/3950 **Entry 3:** M/503/3949 **Chemical Products:** **Entry 2:** A/503/3968 **Entry 3:** T/503/3967	**Entry 2:** T/503/3953 **Entry 3:** A/503/3954	**Entry 2:** T/617/3317 **Entry 3:** A/617/3318	**Entry 2:** **Entry 3:**
WJEC credits:	3	3	3 and 2	3	3	-
Skills, Knowledge and Learning:	**Skills**: Pupils use models, diagrams, and secondary sources to investigate astronomical ideas. They practise sequencing events and presenting ideas clearly. **Knowledge**: Structure of the solar system; role of the Sun, Earth, and Moon; causes of	**Skills**: Pupils practise growing plants, recording growth, making simple measurements, and drawing labelled diagrams. They develop investigative skills through practical work. **Knowledge**: Parts of plants and their functions; basic	**Skills:** Pupils recognise hazards, interpret safety symbols, follow safe practices, handle chemicals responsibly, apply PPE, conduct risk assessments, and evaluate safe working habits. **Knowledge:** Understand lab	**Skills**: Pupils follow instructions to carry out chemical reactions, measure and record results, and use simple apparatus. They practise evaluating outcomes of experiments. **Knowledge**: Difference between compounds and	**Skills**: Pupils research, discuss, and present findings. They practise interpreting information, evaluating human activity, and considering solutions. **Knowledge**: Scientific causes of climate change; effects on weather, ecosystems, and people; human responses and	**Skills:** Pupils build independence and organisation by reviewing work, selecting evidence, improving tasks, and reflecting on progress. They develop resilience, communication, and evaluation skills. **Knowledge:** Consolidate key

Long Term Plan
KS4: Pathway 2 Science

Groveside School

	day/night and seasons; stars, galaxies, and space exploration. **Learning**: Pupils will understand Earth's place in the universe, how science explains natural phenomena, and the importance of observation and exploration.	requirements for plant growth; simple photosynthesis; plant reproduction; role of plants in ecosystems. **Learning**: Pupils will understand how plants grow and reproduce and their crucial role in sustaining life on Earth.	safety, hazard symbols, and why PPE is needed. They learn about household chemicals, their risks, safe disposal, and environmental impact. **Learning:** Pupils apply safety procedures, interpret hazard information, and responsibly use/dispose of chemicals.	mixtures; methods of making simple compounds (e.g. salts); uses of compounds in real life. **Learning**: Pupils will gain confidence in handling chemicals, understand how substances are combined, and appreciate the usefulness of chemistry in society.	strategies for mitigation. **Learning**: Pupils will understand the science behind climate change, its global consequences, and ways individuals and societies can act.	ideas across biology, chemistry, physics, addressing misconceptions and reinforcing concepts. **Learning:** Pupils complete secure portfolios for the WJEC Diploma, gaining transferable skills for study, training, or work.
Enrichment/ Experiences:	Planetarium/ Observatory trip. Build and launch water rockets.	Visit to a botanic garden or local farm. Create wildflower patch or vegetable garden. Dissection of a flower.	Visit from a fire service safety team. Practical: household product safety investigation (testing pH of cleaners, looking at hazard labels).	Trip to a chemistry show or STEM outreach event. Make bath bombs, soap, or crystals. Guest visit: chemist/pharmacist.	Visit to a local recycling centre. School "eco-audit" to reduce waste. Guest speaker (local environmental activist/ charity).	Science fair or exhibition STEM challenge day
Curriculum End Point / Goals:	By the end of Year 2, pupils will have extended their scientific knowledge into chemistry and environmental science. They will understand the wider universe and our place within it, explore the requirements of plants for healthy growth, and learn to work safely with chemicals and products found in the home, linking this to their environmental impact. Building on these skills, they will make useful compounds through practical work and investigate how human activity contributes to climate change and how we can respond. Learners will consolidate their knowledge by applying health and safety principles during laboratory investigations, producing evidence of practical skills, and demonstrating their ability to relate science to both personal health and global issues.					