Curriculum intent (overview) – To deepen students' skills and knowledge through a broad and balanced curriculum which prepares students for adulthood.

10V - Venture Curriculum – *Science 4 Lessons Weekly*

Year	2024 – 2025 Autumn 1	2024 – 2025 Autumn 2	2023 – 2024 Spring 1	2024 – 2025 Spring 2	2024 – 2025 Summer 1	2024 – 2025 Summer 2
	Topic: B7 – You only have one life – look after it. B12-Food Factory **Suggested Key Questions:** What are the main parts of the digestive system and what do they do? Why is a balanced diet important for staying healthy? What happens to food as it moves through the digestive system? What are drugs and how can they affect the body? What is the difference between helpful and harmful drugs? How can we make healthy choices to look after our bodies? What do plants need to grow and stay healthy? How do plants make their own food through photosynthesis? What do farm animals need to stay healthy and produce food?	**Topic:** C5 – Novel Materials C7 – Let's get together **Suggested Key Questions:** What are materials and how do we use them in everyday life? What makes a material 'novel' or new? How are new materials made or discovered? What are some examples of smart or modern materials Why do we need different materials for different jobs? How can we test materials to find out what they can do? What is a mixture and how is it different from a pure substance? What happens when we mix things together? What is a solution and how does something dissolve? How can we separate mixtures or solutions?	**Topic:** P8 – Attractive Forces P9 – Pushes and Pulls **Suggested Key Questions:** What is a magnet and what can it do? Which materials are magnetic and which are not? What are magnetic poles and how do they interact? What is a magnetic field and how can we see it? What is static electricity and how is it made? How do magnets and static electricity affect objects around them? What is a force and how can we describe it? What happens when we push or pull an object? How do different surfaces affect how things move? What is friction and how does it help or stop movement?	**Topic:** B8- Body Wars B10 – Extinction **Suggested Key Questions:** What are germs and how do they make us ill? What is the difference between bacteria and viruses? How does the body protect itself from illness? What are vaccines and how do they help us? How can we stop the spread of disease? What can we do to keep our bodies healthy and strong? What does extinction mean? Why do animals and plants become extinct? What are some examples of extinct animals? What is an endangered species? How do humans affect the environment and wildlife?	**Topic:** C9 Fuels C10 – are you over reacting **Suggested Key Questions:** What is a fuel and what do we use it for? What are the differences between renewable and non-renewable fuels? How do fuels give us energy? What are fossil fuels and where do they come from? What are the problems with using fossil fuels? What are some cleaner alternatives to fossil fuels? What is a chemical reaction? How can we tell if a chemical reaction has happened? What are the signs of a chemical change?	**Topic:** P11 – Fly Me to the moon P12 – Final Frontiers ELC Coursework **Suggested Key Questions:** What are the differences between the Earth and the Moon? Why do we see different shapes of the Moon? What causes day and night on Earth? How do astronauts travel to the Moon? What is gravity and how does it affect us on Earth and the Moon? What have we learned from space missions to the Moon? What is the solar system and what does it include? What are the main features of the planets? How do we explore space beyond the Moon? What tools do scientists use to study space? Why is space exploration important?

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	How do farmers grow crops and raise animals for food? **What foods come from plants and what foods come from animals?** **How can we look after plants and animals to help produce healthy food?** **Key Skills and Knowledge:** **Identifying and labelling parts of the digestive system** using diagrams and models. **Describing the function of each digestive organ** in simple terms. **Sorting foods into groups** (e.g. carbohydrates, proteins, fats) and explaining their role in a healthy diet. **Explaining the effects of different drugs** (e.g. medicines vs. recreational drugs) on the body. **Using simple data** (e.g. food labels, health posters) to make informed health choices. **Participating in discussions or role-play** about healthy lifestyles and the consequences of drug use. **Identifying parts of a plant and their**	**Why is it important to separate materials in real life?** **What are some everyday examples of mixtures and solutions?** **Key Skills and Knowledge:** **Identifying and naming different materials** (e.g. plastic, metal, fabric, glass). **Describing the properties of materials** (e.g. strong, flexible, waterproof). **Comparing traditional and modern materials** and their uses. **Carrying out simple tests** (e.g. stretch, bend, waterproof) to explore material propertie **Recording results from material investigations** using tables or pictures. **Explaining why a material is suitable** for a specific purpose (e.g. Teflon for non-stick pans). **Making and identifying mixtures and solutions** using safe materials (e.g. salt and water, sand and water). **Observing and describing what**	**How can we measure how strong a force is?** **Where do we see pushes and pulls in everyday life?** **Key Skills and Knowledge:** **Identifying magnetic and non-magnetic materials** using magnets. **Exploring magnetic poles** and predicting attraction or repulsion. **Using iron filings or visual tools** to observe magnetic fields. **Creating static electricity** through simple activities (e.g. rubbing balloons). **Describing the effects of static electricity** on small objects (e.g. paper, hair). **Recording observations** from magnetism and static experiments using drawings or tables. **Identifying forces as pushes or pulls** in real-life situations. **Using simple equipment** (e.g. spring scales) to measure force. **Investigating how surfaces affect**	**What can we do to help protect animals and plants?** **Key Skills and Knowledge:** **Identifying different types of microbes** (bacteria, viruses, fungi) using images or models. **Describing how germs spread** and how to prevent it (e.g. handwashing, covering coughs). **Explaining how the immune system works** in simple terms (e.g. white blood cells as body's defenders) **Understanding the role of vaccines** and how they protect us. **Using diagrams or role-play** to show how the body fights infection. **Taking part in hygiene-related activities** (e.g. handwashing experiments with glitter or UV gel). **Recognising extinct and endangered animals** using pictures or fact cards. **Explaining simple causes of extinction** (e.g. habitat loss, hunting, climate change).	**What is the difference between physical and chemical changes?** **Why are some reactions fast and others slow?** **How are chemical reactions used in everyday life?** **Key Skills and Knowledge:** **Identifying different types of fuels** (e.g. coal, petrol, solar, wind). **Sorting fuels into renewable and non-renewable categories**. **Describing how fuels are used** in homes, transport, and industry. **Explaining the environmental impact** of burning fossil fuels. **Comparing energy sources** based on sustainability and pollution. **Creating posters or presentations** to promote clean energy choices. **Observing and describing chemical reactions** (e.g. fizzing, colour change, temperature change). **Sorting changes into physical and chemical** using simple examples. **Carrying out safe experiments** to explore reactions (e.g. vinegar and baking soda).	**What challenges do astronauts face in space?** **Coursework: Craters** **Title:** ***Investigating how craters are formed by meteorites*** **Objective:** **To explore how the size, speed, and height of a falling object affects the size of a crater in a sand bath.** **Setting up a fair test using sand, balls, and measuring tools.** **Measuring crater width and depth using rulers or calipers.** **Changing one variable at a time (e.g. height, size of object).** **Recording results in a table and drawing simple graphs.** **Describing patterns in the results (e.g. "bigger ball = bigger crater").** **Key Skills and Knowledge:** **Identifying features of the Earth and Moon** using images or models.

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	functions, and comparing them to parts of animals used in farming (e.g. udders for milk, feathers for warmth). **Explaining photosynthesis** in simple terms and understanding how it supports the food chain, including animals that eat plants. **Observing and recording plant and animal growth**, such as measuring plant height or monitoring animal weight/health. **Comparing the needs of plants and animals** (e.g. water, food, shelter, light) and how farmers meet these needs. **Sorting foods into plant-based and animal-based categories**, and discussing how they are produced. **Taking part in practical activities** like planting seeds, feeding animals, or cleaning enclosures to understand food production.	**happens** when substances are mixed. **Using simple methods to separate mixtures** (e.g. filtering, sieving, evaporating). **Predicting what will happen** when materials are mixed or separated. **Recording observations** using drawings, photos, or simple charts. **Explaining how separation techniques are used** in cooking, cleaning, or recycling.	**movement** (e.g. smooth vs. rough). **Predicting and testing how objects move** when pushed or pulled. **Recording results from force experiments** using charts or photos. **Explaining how friction works** using practical examples (e.g. shoes on different floors).	**Sorting animals into extinct, endangered, and safe categories**. **Using timelines or storyboards** to show how extinction can happen over time. **Discussing ways to protect wildlife** (e.g. recycling, protecting habitats, supporting zoos or charities). **Creating posters or presentations** to raise awareness about endangered species.	**Recording observations** using drawings, tables, or photos. **Explaining the signs of a chemical reaction** in simple terms. **Linking chemical reactions to real-life uses** (e.g. cooking, cleaning, medicine).	**Explaining the phases of the Moon** using diagrams or practical models. **Describing how the Earth rotates** to cause day and night. **Understanding the role of gravity** in space and on Earth. **Using timelines or videos** to explore space missions. **Creating models or posters** to show the Earth-Moon system. **Naming and ordering the planets** in the solar system. **Describing key features of planets** (e.g. size, temperature, surface). **Using models or apps** to explore the solar system. **Explaining how telescopes and satellites help us learn about space.** **Comparing conditions on Earth and other planets.** **Creating fact files or presentations** about planets or space missions.
Links to Gatsby Benchmarks:	Benchmark 2, – Learning from the Career and Labor Market information.	Benchmark 2, – Learning from the Career and Labor Market information.	Benchmark 2, – Learning from the Career and Labor Market information.	Benchmark 2, – Learning from the Career and Labor Market information.	Benchmark 2, – Learning from the Career and Labor Market information.	Benchmark 2, – Learning from the Career and Labor Market information. Benchmark

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	Benchmark 3 – Addressing the needs of the student and * - Personal Guidance Students to consider what skills are required to be a paramedic, doctor, nurse, vet that leads onto looking at what skills are needed for different roles they are interested in and what qualifications.	Benchmark 3 – Addressing the needs of the student and * - Personal Guidance Benchmark 4 – Linking Curriculum to learning Benchmark 8 – Personal Guidance Students to consider what skills are required for waiters, builders, mechanics, to access the opportunities they are interested in. Going into work places/remote visits. Research. Writing C.Vs and cover letters.	Benchmark 3 – Addressing the needs of the student and * - Personal Guidance Benchmark 5- Encounters with employers and employees Students to consider what skills are required to be an electrician, technician, games designer to access the opportunities they are interested in. Research.	Benchmark 3 – Addressing the needs of the student and * - Personal Guidance Benchmark 5- Encounters with employers and employees Students to consider what skills are required to be a dietician, nutritionist, health care assistant to access the opportunities they are interested in. Research.	Benchmark 3 – Addressing the needs of the student and * - Personal Guidance Benchmark 6 – Experience of Work places Students to consider what skills are required to be a chemist, pharmacist, cleaner, paramedic, to access the opportunities they are interested in. Looking at careers in sports and researching sports.	3 – Addressing the needs of the student and * - Personal Guidance Benchmark 6 – Experience of Work places Students to consider what skills are required to be an optician, director, projector, radiographer, to access the opportunities they are interested in. Looking at careers in sports and researching sports.