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

7V - Venture Curriculum – *STEM 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: Body parts and senses **Suggested Key Questions:** How do my senses help me explore the world around me? Can machines have senses like humans do? How does light help us see things clearly? How do light sensors work like our eyes? How does sound travel from one place to another? How do microphones and sound sensors detect noise? How do we know when something is hot, cold, soft or hard? Can we build a sensor that feels pressure like our skin? How so animals use their senses to survive? How do robots detect smells or chemicals? What senses would a robot need to explore the world like a human?	**Topic:** Grouping and classifying **Suggested Key Questions:** What are materials and how can we describe them? How can we find out what a material is like? Can we group materials by how they look and feel? What are solids, liquids, and gases? What happens to materials when they get hot or cold? Which materials are best for keeping things warm or cool? Which materials are strong and which are bendy? Can we build a bridge that holds weight? How can we test what rocks and soils are like? How are rocks made over time? What can we make from old materials?	**Topic:** Electricity **Suggested Key Questions:** What things around us use electricity? What do the parts of a circuit do? Can we make a complete circuit? Why isn't my circuit working? What materials are good for making wires? How can we tell if something is a conductor or insulator? How can we turn electricity on and off? Can we make a circuit that does something useful? What are the dangers of electricity? Where do we use electricity every day? What could we invent that uses electricity? How does my invention work and why is it useful? **Key Skills and Knowledge:**	**Topic:** Keeping Healthy **Suggested Key Questions:** What choices help us stay healthy? How can we show what a healthy life looks like? Which foods belong in which group? What does a healthy plate look like? Can we show how digestion works? How do nutrients help us grow and stay strong? What happens to our bodies when we move? Can we create a fun way to stay active? How do germs travel and how can we stop them? What do we need to stay clean and healthy every day? What can I do every day to stay healthy? How can we share what we've learned about health? **Key Skills and Knowledge:** To explore healthy and unhealthy lifestyle choices. To create a healthy lifestyle poster or collage.	**Topic:** Acids and alkalis **Suggested Key Questions:** Are the things we use everyday acids or alklais? Can we group substances on how they behave in tests? Can we make our own indicator at home or in school? What colours do we see when we test different substances? How strong or weak are different acids and alkalis? Can we make a colour chart to show pH values? What happens when we mix and acid and an alkali? Can we find the right amount to make a neutral solution? How do indigestion tablets work? Are cleaning products acids or alkalis?	**Topic:** Light **Suggested Key Questions:** Can we show that light travels in straight lines? How do we see planets and stars if they are so far away? How do telescopes help us see planets and stars? Can we make a tool to help us see the night sky better? How do the planets move around the sun? Are planets closer to the sun hotter and brighter? Why does the moon look different each night? What happens when the Earth or moon blocks the light? What shapes can we find in the stars? Can we make a model of the night sky? What tools use light to help us explore planets and stars? What have we discovered about light and the Solar System?

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	How can we design a robot that uses sensors like our senses? **Key Skills and Knowledge:** Understand the five senses and how we use them to explore the world. Learn what a sensor is and how it relates to human senses. Explore how light travels and how we use it to see. Understand how light sensors work. Investigate how sound travels through different materials. Understand how microphones detect sound. Understand how pressure is detected. Build a basic pressure sensor. Explore how animals and humans detect chemicals. Plan a robot that uses sensors to mimic human senses. Share and explain robot designs.	How do we know what goes in the recycling bin? What materials are used in the world around us? Can we design something useful using the right materials? **Key Skills and Knowledge:** To explore and test materials using our senses and simple tools. To sort and group materials based on shared properties. To investigate how materials change when heated or cooled. To design and test a container that keeps things hot or cold. To test materials for strength and flexibility. To build a simple bridge using chosen materials and test its strength. To test rocks and soils for hardness, water absorption, and texture. To create a model showing how sedimentary rocks form in layers. To design and build a new object using recycled materials.	To explore how electricity powers everyday objects. To identify and name basic circuit components. To build working circuits using batteries, bulbs, and wires. To test and fix broken circuits. To investigate which materials conduct electricity. To sort and group materials based on their electrical properties. To build circuits with different types of switches. To design a simple control system using a switch. To identify electrical hazards and create safety posters. To explore how electricity is used safely in homes. To design an invention that uses a simple circuit. To present and explain our invention to others.	To sort foods into the correct food groups. To design a balanced meal using all food groups. To model the digestive system using simple materials. To explore how nutrients travel through the body. To measure and record the effects of exercise on the body. To design a simple fitness circuit or activity. To investigate how germs spread and how to stop them. To create a hygiene routine or toolkit. To design a "Healthy Me" plan or booklet. To present healthy living ideas to others.	What can we find using our own experiment? How can we share what we've discovered? **Key Skills and Knowledge:** To investigate the properties of common household substances. To sort substances based on test results. To make a natural indicators using red cabbage or beetroot. To test substances using the natural indicator. To test a range of substances using universal indicator. To create a visual pH scale using test results. To carry out a neutralization reaction using vinegar and baking soda. To investigate how much alkali is needed to neutralize an acid To investigate how antacids neutralize stomach acid. To test cleaning products for acidity or alkalinity. To plan and carry out a mini investigation using indicators. To present findings from our investigation.	**Key Skills and Knowledge:** To investigate how light travels. To explore how light helps us see planets and stars To explore how telescopes use mirrors to see distant objects. To build a simple telescope To model the solar system and the planets orbits. To investigate how distance from the sun affects light and heat. To model moon phases using light ans spheres. To explore how eclipses happen. To create constellation patterns and identify visible planets. To build a rotating star and planet viewer. To design a space mission using light based tools. To present a model or display of what we've learned.

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		To sort materials into recyclable groups and explain our choices. To investigate materials used in everyday objects and buildings. To design and present a product using appropriate materials for its purpose.				
Links to Gatsby Benchmarks:	Benchmark 2, – Learning from the Career and Labor Market information. 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 2, – Learning from the Career and Labor Market information. 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 2, – Learning from the Career and Labor Market information. 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 2, – Learning from the Career and Labor Market information. 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 2, – Learning from the Career and Labor Market information. 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.	Benchmark 2, – Learning from the Career and Labor Market information. 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 an optician, director, projector, radiographer, to access the opportunities they are interested in. Looking at careers in sports and researching sports.