

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

7N - Navigator Curriculum – Science 6 Lessons Weekly

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Year	2024 – 2025 Autumn 1	2023 – 2024 Autumn 2	2023 – 2024 Autumn 1	2023 – 2024 Autumn 2	2023 – 2024 Autumn 1	2023 – 2024 Autumn 2
	<p>Topic: Intro to Lab B1 Cells, B2 Structure and function of body systems.</p> <p>Suggested Key Questions: What are cells? What are the various systems within the body and what do they do?</p> <p>Key Skills and Knowledge: B1</p> <ul style="list-style-type: none"> - Describe what a cell is. - Explain how to use a microscope to observe a cell. - Describe the similarities and differences between plant and animal cells. - Describe the functions of the components of a cell. 	<p>Topic: B3 Reproduction (plant – focus), C1 The particle model.</p> <p>Suggested Key Questions: How do plants reproduce? What are particles and how are they used to model behavior in the states of matter?</p> <p>Key Skills and Knowledge: B3</p> <ul style="list-style-type: none"> - Name the parts of a flower. - State what is meant by pollination. - Name two methods of pollination. - Describe the process of fertilisation in plants. - Describe how seeds and fruits are formed. 	<p>Topic: C2 Elements, atoms and compounds, C3 Reactions</p> <p>Suggested Key Questions: What are elements, atoms and compounds? What is a chemical reaction?</p> <p>Key Skills and Knowledge: C2</p> <ul style="list-style-type: none"> - State what an element is. - Recall the chemical symbols of six elements. - State what atoms are. - Compare the properties of one atom of an element to the properties of many atoms. - State what elements and 	<p>Topic: C4 Acids and alkalis P1 Forces</p> <p>Suggested Key Questions: What are acids and alkalis? What do forces do and are the different types of forces?</p> <p>Key Skills and Knowledge: C4</p> <ul style="list-style-type: none"> - Name some common properties of acids and alkalis. - Describe, in simple terms, what the key words ‘concentrated’ and ‘dilute’ mean/ - Describe broad colours of universal indicator for acids, alkalis, and neutral solutions. 	<p>Topic: B3 Reproduction - Link to PSHE during this half term. P2 Sound.</p> <p>Suggested Key Questions: How do humans reproduce? What are the properties of sound?</p> <p>Key Skills and Knowledge: B3</p> <ul style="list-style-type: none"> - State the definitions for adolescence and puberty. - State changes to the bodies of boys and girls during puberty. - Name the main structures of the male and female reproductive system. - State a function of the main structures 	<p>Topic: P3 Light, P4 Space – Link to man on the moon.</p> <p>Suggested Key Questions: What are the properties of light? What do we know about the solar system?</p> <p>Key Skills and Knowledge: P3</p> <ul style="list-style-type: none"> - Describe what happens when light interacts with materials. - State the speed of light. - Describe the features of a mirror image. - Identify examples of specular reflection and diffuse scattering.

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<ul style="list-style-type: none"> - Describe examples of specialised animal cells. - Describe examples of specialised plant cells. - Name some substances that move into and out of cells. - Describe the process of diffusion. - Name an example of a unicellular organism. - Identify some structures in an amoeba. <p>B2</p> <ul style="list-style-type: none"> - Name the parts of the gas exchange system. - State that the parts of the gas exchange system are adapted to their function. - Describe the processes of inhaling and exhaling. - Describe how a bell jar can be used to model what happens during breathing. - Describe the structure of the skeleton. - Describe the functions of the skeletal system. 	<ul style="list-style-type: none"> - State what is meant by seed dispersal. - Name the methods of seed dispersal. <p>C1</p> <ul style="list-style-type: none"> - Describe how materials are made up of particles. - Use the particle model to explain why different materials have different properties. - Describe the properties of a substance in its three states. - Use ideas about particles to explain the properties of a substance in its three states. - Use the particle model to explain changes of state involving solids and liquids. - Use the particle model to explain boiling. - - Describe changes of state involving gases. - Use the particle model to explain evaporation, condensation, and sublimation. - Use the particle model to explain diffusion. 	<p>compounds are different.</p> <ul style="list-style-type: none"> - Identify elements within compounds. - State how many different elements are in a compound by looking at a chemical formula. - Name the elements in a compound. <p>C3</p> <ul style="list-style-type: none"> - State what a chemical reaction is. - State what happens to the reactants in a chemical reaction. - State some signs of a chemical reaction. - Identify reactants and products in word equations. - Write word equations to represent chemical reactions. - State what a fuel is. - State what fuels react with when they burn. - State simply what a decomposition reaction is. - Describe the products of a decomposition reaction. - State what happens to the mass of the reactants and 	<ul style="list-style-type: none"> - State that indicators will be different colours in acids, alkalis, and neutral solutions. - State simply what happens during a neutralisation reaction. - Give one example of a neutralisation reaction. - State the type of chemical made when an acid and alkali react. - Match the type of salt that will form from the type of acid used. <p>P1</p> <ul style="list-style-type: none"> - Explain what forces do. - Describe what is meant by an interaction pair. - State an example of a force deforming an object. - Recognise a support force. - Describe the effect of drag forces and friction. - Explain why drag forces and friction arise. - Describe the effects of a field. - Describe the effect of gravitational forces on Earth and in space. 	<p>of the male and female reproductive system.</p> <ul style="list-style-type: none"> - State the definition of gametes. - State what is meant by fertilisation. - State the definition of gestation. - State how long a pregnancy lasts. - State a simple definition of the menstrual cycle. - State the main stages in the menstrual cycle. - Present key pieces of information in a sequence. <p>P2</p> <ul style="list-style-type: none"> - State some features of waves. - State what happens when waves hit a barrier. - State that waves in the same place affect each other. - Name some sources of sound/ - Name materials that sound can travel through. - State that sound travels more slowly than light. - Describe the link between loudness and amplitude. 	<ul style="list-style-type: none"> - Describe and explain what happens when light is refracted. - Describe what happens when light travels through a lens. - Name parts of the eye. - Describe how the eye works. - Explain what happens when light passes through a prism. - Describe how primary colours add to make secondary colours. <p>P4</p> <ul style="list-style-type: none"> - Name some objects seen in the night sky. - Place some objects seen in the night sky in size order. - Name the objects in the Solar System. - Describe some similarities and differences between the planets of the Solar System. - Describe differences between seasons. - Describe the motions of the Sun, stars, and Moon across the sky. - Describe the phases of the Moon. - Explain why you see phases of the Moon.
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	<ul style="list-style-type: none"> - Describe the role of joints in movement. - Explain how to measure the force exerted by different muscles. - State the function of major muscle groups. - State the definition of antagonistic muscles. <p>Key Skills: EP1 Asking scientific questions</p> <ul style="list-style-type: none"> • Begin to identify an observation that could be recorded or measured over time. <p>EP2 Planning investigations</p> <ul style="list-style-type: none"> • Carry out the method carefully and consistently. • Begin to identify risks and hazards. <p>EP3 Collecting, recording, and presenting data</p> <ul style="list-style-type: none"> • Record observations. <p>EP4 Analysing patterns in data</p>	<ul style="list-style-type: none"> - Describe evidence for diffusion. - Describe simply what gas pressure is. - State examples of gas pressure in everyday situations. <p>Key Skills: EP1 Asking scientific questions</p> <ul style="list-style-type: none"> • Begin to identify an observation that could be recorded or measured over time. <p>EP2 Planning investigations</p> <ul style="list-style-type: none"> • Carry out the method carefully and consistently. • Begin to identify risks and hazards. <p>EP3 Collecting, recording, and presenting data</p> <ul style="list-style-type: none"> • Record observations. <p>EP4 Analysing patterns in data</p> <ul style="list-style-type: none"> • Begin to identify a pattern in data from a 	<p>products in chemical reactions.</p> <ul style="list-style-type: none"> - Describe how to find out the mass of a reactant or product. - State simply what happens in endothermic and exothermic changes. - Identify a reaction as endothermic or exothermic. <p>Key Skills: EP1 Asking scientific questions</p> <ul style="list-style-type: none"> • Begin to identify an observation that could be recorded or measured over time. <p>EP2 Planning investigations</p> <ul style="list-style-type: none"> • Carry out the method carefully and consistently. • Begin to identify risks and hazards. <p>EP3 Collecting, recording, and presenting data</p> <ul style="list-style-type: none"> • Record observations. <p>EP4 Analysing patterns in data</p>	<ul style="list-style-type: none"> - Identify familiar situations of balanced and unbalanced forces. - Define equilibrium. - Identify when the speed or direction of motion of an object changes. <p>Key Skills: EP1 Asking scientific questions</p> <ul style="list-style-type: none"> • Begin to identify an observation that could be recorded or measured over time. <p>EP2 Planning investigations</p> <ul style="list-style-type: none"> • Carry out the method carefully and consistently. • Begin to identify risks and hazards. <p>EP3 Collecting, recording, and presenting data</p> <ul style="list-style-type: none"> • Record observations. <p>EP4 Analysing patterns in data</p>	<ul style="list-style-type: none"> - Describe the link between frequency and pitch. - Describe how the ear works. - Describe how your hearing can be damaged. - Describe what ultrasound is. - Describe some uses of ultrasound. <p>Key Skills: EP1 Asking scientific questions</p> <ul style="list-style-type: none"> • Begin to identify an observation that could be recorded or measured over time. <p>EP2 Planning investigations</p> <ul style="list-style-type: none"> • Carry out the method carefully and consistently. • Begin to identify risks and hazards. <p>EP3 Collecting, recording, and presenting data</p> <ul style="list-style-type: none"> • Record observations. <p>EP4 Analysing patterns in data</p>	<p>Key Skills: EP1 Asking scientific questions</p> <ul style="list-style-type: none"> • Begin to identify an observation that could be recorded or measured over time. <p>EP2 Planning investigations</p> <ul style="list-style-type: none"> • Carry out the method carefully and consistently. • Begin to identify risks and hazards. <p>EP3 Collecting, recording, and presenting data</p> <ul style="list-style-type: none"> • Record observations. <p>EP4 Analysing patterns in data</p> <ul style="list-style-type: none"> • Begin to identify a pattern in data from a
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	<ul style="list-style-type: none"> ● Begin to identify a pattern in data from a results table or bar chart with support and guidance. ● Begin to make a conclusion with some support. <p>EP5 Evaluating data and methods.</p>	<p>results table or bar chart with support and guidance.</p> <ul style="list-style-type: none"> ● Begin to make a conclusion with some support. <p>EP5 Evaluating data and methods.</p>	<ul style="list-style-type: none"> ● Begin to identify a pattern in data from a results table or bar chart with support and guidance. ● Begin to make a conclusion with some support. <p>EP5 Evaluating data and methods.</p>	<ul style="list-style-type: none"> ● Begin to identify a pattern in data from a results table or bar chart with support and guidance. ● Begin to make a conclusion with some support. <p>EP5 Evaluating data and methods.</p>	<ul style="list-style-type: none"> ● Begin to identify a pattern in data from a results table or bar chart with support and guidance. ● Begin to make a conclusion with some support. <p>EP5 Evaluating data and methods.</p>	<p>results table or bar chart with support and guidance.</p> <ul style="list-style-type: none"> ● Begin to make a conclusion with some support. <p>EP5 Evaluating data and methods.</p>
<p>Links to Gatsby Benchmarks:</p>	<p>Benchmark 2, – Learning from the Career and Labor Market information. Benchmark 3 – Addressing the needs of the student and * - Personal Guidance</p> <p>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.</p>	<p>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</p> <p>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.</p>	<p>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</p> <p>Students to consider what skills are required to be an electrician, technician, games designer to access the opportunities they are interested in. Research.</p>	<p>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</p> <p>Students to consider what skills are required to be a dietician, nutritionist, health care assistant to access the opportunities they are interested in. Research.</p>	<p>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</p> <p>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.</p>	<p>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</p> <p>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.</p>