

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	2022 – 2023 Autumn 1 Unit 1	2022 – 2023 Autumn 2 Unit 2	2022 – 2023 Spring 1 Unit 3	2022 – 2023 Spring 2 Unit 4	2022 – 2023 Summer 1 Unit 5	2022 – 2023 Summer 2 Unit 6
	<p><b>Topic:</b> Intro to Lab <b>B1</b> Cells, <b>B2</b> Structure and function of body systems.</p> <p><b>Suggested Key Questions:</b> What are cells? What are the various systems within the body and what do they do?</p> <p><b>Key Skills and Knowledge:</b> <b>B1</b></p> <ul style="list-style-type: none"> <li>- Describe what a cell is.</li> <li>- Explain how to use a microscope to observe a cell.</li> <li>- Describe the similarities and differences between plant and animal cells.</li> <li>- Describe the functions of the components of a cell.</li> </ul>	<p><b>Topic:</b> <b>B3</b> Reproduction (plant – focus), <b>C1</b> The particle model.</p> <p><b>Suggested Key Questions:</b> How do plants reproduce? What are particles and how are they used to model behavior in the states of matter?</p> <p><b>Key Skills and Knowledge:</b> <b>B3</b></p> <ul style="list-style-type: none"> <li>- Name the parts of a flower.</li> <li>- State what is meant by pollination.</li> <li>- Name two methods of pollination. - Describe the process of fertilisation in plants.</li> <li>- Describe how seeds and fruits are formed.</li> </ul>	<p><b>Topic:</b> <b>C2</b> Elements, atoms and compounds, <b>C3</b> Reactions</p> <p><b>Suggested Key Questions:</b> What are elements, atoms and compounds? What is a chemical reaction?</p> <p><b>Key Skills and Knowledge:</b> <b>C2</b></p> <ul style="list-style-type: none"> <li>- State what an element is.</li> <li>- Recall the chemical symbols of six elements.</li> <li>- State what atoms are.</li> <li>- Compare the properties of one atom of an element to the properties of many atoms.</li> <li>- State what elements and compounds are different.</li> </ul>	<p><b>Topic:</b> <b>C4</b> Acids and alkalis <b>P1</b> Forces</p> <p><b>Suggested Key Questions:</b> What are acids and alkalis? What do forces do and are the different types of forces?</p> <p><b>Key Skills and Knowledge:</b> <b>C4</b></p> <ul style="list-style-type: none"> <li>- Name some common properties of acids and alkalis.</li> <li>- Describe, in simple terms, what the key words ‘concentrated’ and ‘dilute’ mean/</li> <li>- Describe broad colours of universal indicator for acids, alkalis, and neutral solutions.</li> <li>- State that indicators will be</li> </ul>	<p><b>Topic:</b> <b>B3</b> Reproduction - <i>Link to PSHE during this half term.</i> <b>P2</b> Sound.</p> <p><b>Suggested Key Questions:</b> How do humans reproduce? What are the properties of sound?</p> <p><b>Key Skills and Knowledge:</b> <b>B3</b></p> <ul style="list-style-type: none"> <li>- State the definitions for adolescence and puberty.</li> <li>- State changes to the bodies of boys and girls during puberty.</li> <li>- Name the main structures of the male and female reproductive system.</li> <li>- State a function of the main structures of the male and</li> </ul>	<p><b>Topic:</b> <b>P3</b> Light, <b>P4</b> Space – <i>Link to man on the moon.</i></p> <p><b>Suggested Key Questions:</b> What are the properties of light? What do we know about the solar system?</p> <p><b>Key Skills and Knowledge:</b> <b>P3</b></p> <ul style="list-style-type: none"> <li>- Describe what happens when light interacts with materials.</li> <li>- State the speed of light.</li> <li>- Describe the features of a mirror image.</li> <li>- Identify examples of specular reflection and diffuse scattering.</li> <li>- Describe and explain what happens when light is refracted.</li> </ul>

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