Explorer Curriculum – Building block to Formal Curriculum

- The building block before a fully formal curriculum.
- Strong focus on Early Literacy and Numeracy.
- Key skills and knowledge to understand the world around them.
- Functional Skills to apply basic knowledge.
- For children with moderate learning difficulties, autism and other learning needs. Learning takes place through tangible 'real life situations' with regular revisiting of learning.
- Students follow an Entry Level (1-3) Pathway at KS4 and KS5.

8.2 - Explorer Curriculum- *Science 6 Lessons Weekly*

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Year	2021 – 2022 Autumn 1 Unit 1	2021 – 2022 Autumn 2 Unit 2	2021 – 2022 Spring 1 Unit 3	2021 – 2022 Spring 2 Unit 4	2021 – 2022 Summer 1 Unit 5	2021 – 2022 Summer 2 Unit 6
	Topic: (1) Living Things (2) Plants **Suggested Key Questions:** **What are living things?** **What do plants need?** **Key Skills and Knowledge:** Living Things • To be able to differentiate between alive and never alive • To know some of the features of living things • To be able to describe life processes using correct vocabulary. • To know that micro-organisms are very small . • To know that microorganisms	**Topic:** (1) Separating Materials (2) Changing Materials **Suggested Key Questions:** **How can we separate mixtures?** **How can the properties of materials be changed?** **Key Skills and Knowledge:** Separating Materials • To be able to separate solids using different sizes of sieves • To be able to explain how sieving works. • To be able to explain what dissolving means. • To know that a liquid with a solid	**Topic:** (1) Light (2) Sound **Suggested Key Questions:** **What are the properties of light?** **What are the properties of sound?** **Key Skills and Knowledge:** Light • To be able to identify and sort a range of sources e.g. sun, TV, fire, etc • To be able to identify dark places. • To be able to link shadows and darkness. • To be able to explore making shadows.	**Topic:** (1) Human skeleton (2) Heart and circulation **Suggested Key Questions:** **Why do humans have a skeleton?** **What is the circulatory system?** **Key Skills and Knowledge:** Human skeleton • To know that the skeleton is used for support, movement and protection. • To be able to show that muscles work in pairs and can only pull. • To know that 'meat' is muscle. • To know that bones are joined by joints.	**Topic:** (1) Acids & Alkalis (2) Rocks & weathering (pollution) **Suggested Key Questions:** **How can we tell if something is acid or alkali?** **Are all rocks the same?** **Key Skills and Knowledge:** Acids & Alkalis • To recognise that acids have a sour taste. • To be aware that many everyday chemicals and foods contain acids • To understand that acids can burn you and can be dangerous	**Topic:** (1) Electricity (2) Forces & motion (magnets) **Suggested Key Questions:** **Why is electricity important?** **What do forces do?** **Key Skills and Knowledge:** Electricity • To know that electricity can be dangerous. • To know that electricity can produce light, heat, sound, movement. • To be able to connect given circuit components to light the bulb/make the buzzer sound. • Does the number of batteries in a

	can cause disease. • To know that the body can defend itself against dangerous micro-organisms • To know that immunisation/vaccination and medicines help to defend against dangerous micro-organisms • To be able to sort living things into an appropriate environment identify some adaptations (e.g. place picture of tree in forest or farm, not sea). • To be able to identify plants and animals found in habitats • To be able to draw food chains for familiar plants and animals. • To be able to draw simple food webs Plants • To be able to find out practically what happens if a plant is deprived of light and water. • To know that both light and water are important to a plant. • To be able to investigate the best place for growing a plant. • To know the main parts of flowering	dissolved in it is called a solution. • To be able to separate using filtering. • To know that a solid which does not dissolve is insoluble. • To be able to explain how filtering works. • To know that water turns into invisible water vapour if it is in a warm place • To know that the solvent (liquid) will evaporate and not the solute (solid) • To explain simply what a saturated solution is • To know that if the solid is changed this will affect this limit. • To know which mixtures of solids, liquids and gases can be separated by which method and why it works • Pupils to see distillation. • Pupils to be able to explain how distillation works. • Pupils to carry out chromatography.. Changing Materials • To be able to explore a variety of materials for different properties. • To be able to use the scientific vocabulary in discussion.	• To know that light travels from sources. • To know that light travels in straight lines. • To be able to explain how shadows are formed. • To know that light bounces off all surfaces. • To know that when light bounces off shiny, regular surfaces we can see an image. • To be able to explain what reflection is and how it is different to an image. • To know that our eyes receive light. • To be able to describe how light from sources travels through the air to our eyes. • To be able to draw and show direction of the path of light involved in seeing an object. • To be able to identify the outside features of eyes Sound • To experience a range of sounds.	• To be able to name types of joints (*hinge, ball & socket*). Heart and circulation • To know that everybody needs a working heart to stay alive. • To be able to locate the position of the heart. • To experience own heartbeat (use touch or stethoscope) • To know that the heart can beat faster. • To know that that heart pumps blood round the body and to the lungs. • To know that everybody needs to take air in and out of own body. • To know that each person has a pair of lungs. • To be able to locate the position of the lungs. • To know that arteries carry blood away from the heart and veins to it. • To know that blood is carried round the body in veins and arteries. • To know that blood carries	• To know that we must wear goggles when using acids • To recognise common hazard symbols associated with acids • To observe the effect of acids on bicarbonate of soda • To use litmus paper as a more sophisticated method of detecting an acid • To use the term “indicator” when describing an acid • To recognise that there are some substances that are not acids • To recall that the opposite to an acid is an alkali • To understand that a substance that is neither acidic nor alkaline is called neutral • To know that tap water is (more or less) neutral • To know that we can make an acid neutral if we add an alkali • To understand that we can use neutralisation to treat bee stings wasp stings and indigestion.	circuit make a difference to the brightness of the bulb? • Does the length of wire or colour of wire or knots in wire make a difference to the brightness of the bulb or whether the bulb lights up. Forces and motion • To explore and observe different pushes and pulls. • To describe movements as fast, slow, turn, go round • To use vocabulary correctly to describe movement • To describe how to make things speed up, slow down, stop or change direction. • To identify movements as pushes and pulls • To know that squeezing, bending, twisting and stretching can change the shape of objects • To know that squeezing, bending etc are types of forces • To be able to use the word “force” in the correct way • To use the correct vocabulary when describing forces • To explore what happens when

	plants and be able to recognise these parts on different plants (including trees and bushes) • To know that trees and bushes are flowering plants. • To know when a seed is starting to grow. • To be able to describe the effects of water, light, temperature on plant growth. • To know that all plants have roots but different plants have different roots. • To know that plants produce their own food in their leaves. • To know that water passes through the roots and up the stem. • To know that nutrients are needed for healthy growth. • To be able to sequence the life cycle of a plant. • To be able to name the reproductive parts of a plant. • To understand the role of insects in reproduction. • To know how seeds are dispersed. **Key Skills:** Ask relevant questions and use different types of scientific enquiries to answer them.	• To begin to comment on, and record simply, their observations • To be able to explore a range of changes when materials are heated or cooled. • To know some of the ways materials can change when mixed. • To be able to name some reversible changes. • To be able to name some non-reversible changes. • To know that air is needed for burning. • To be able to identify solids, liquids and gases. • To know the particle model for solid, liquid, gas. • To know and explain melting, boiling, condensing, freezing and evaporating in terms of solids, liquids and gases. • To be able to describe the water cycle. • To be able to use the scientific vocabulary for the water cycle correctly. **Key Skills:** Begin to make systematic and careful observations and, where appropriate, take	• To explore making and changing sounds • To be able to identify common sounds and sound sources. • To be able to recognise warning sounds. • To be able to use the scientific vocabulary when talking about sounds and how they are made. • To be able to demonstrate how notes of different loudness and pitch can be produced. • Can explain the difference between pitch and volume • To know that sound travels in all directions and through objects • To know that sound has to enter the ear and ears are used to hear sound. • To know that materials can be used to reduce vibrations entering the ear. • To be able to identify parts of an ear. **Key Skills:** Begin to see a pattern in my results. Recognise when a simple fair test is	food and oxygen to all parts of the body and waste away. • To know that a pulse is caused by heart beat and measure it. • To be able to describe the effect of exercise and rest on pulse rate. • To understand, simply, why the pulse goes up with exercise. **Key Skills:** Use of scientific vocabulary, observations, scientific investigation, explore factors. **Key Skills:** Gather, record, and begin to classify and present data in a variety of ways to help in answering questions. Begin to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. Begin to talk about criteria for grouping, sorting and classifying and use simple keys. Begin to compare and group	Rocks & weathering (pollution) • To know that rocks are natural materials • To know how rocks and minerals can be very useful to us • To sort rocks by their appearance and texture. • To know that water passes through some rocks and not others. • To group rocks by their hardness. • To group rocks by how they were formed. • To understand how sedimentary, metamorphic and igneous rocks are formed. • To know that if a rock is heated and cooled lots of times it eventually cracks • To know that rain and wind can cause the weathering of rocks. **Key Skills:** Use simple secondary sources to find answers. I am beginning to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	magnets are put near one another • To use the correct vocabulary to describe magnetism • To know that friction slows things down • To describe the effects of pushing and pulling springs • To know that the bigger the force the greater the effect • To measure forces in Newtons (N) as the unit • To that gravity is a force gravity. • To identify weight as a force and is due to the pull of gravity **Key Skills:** Use some scientific language to talk and, later, write about what they have found out. Use relevant scientific language. Begin to use comparative and superlative language.

	Raise their own questions about the world around them.	accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Learn to use new equipment appropriately.	necessary and help to decide how to set it up.	according to behaviour or properties, based on testing.		
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 needed to be a police officer or a detective… lead 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 needed 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 needed 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 needed 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 needed 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 needed to access the opportunities they are interested in. Looking at careers in sports and researching sports.