SCIENCE

CURRICULUM: SCIENCE

St. Joseph's Catholic Primary School

Christ at the Centre, Children at the Heart

Love God, Love Learning, Love One Another.

CURRICULUM NARRATIVE

Biology, Chemistry and Physics

Welcome to secondary school!

Y5/6 Cycle b

U5 U6 U4 U1 U2

Y5/6 Cycle a

U3 U4 U3 U3 U2 U3

Y3/4 Cycle b

U3 U1 U2 U3 U2

Y3/4 Cycle a

U4 U3 U2 U2 U1

Y1/2 Cycle b

U1 U2 U1 U1 U1

Y1/2 Cycle a

U1 U2 U1 U2 U1

EYFS

Children at the expected level of development will: Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Your science journey starts here!

Love God, Love Learning, Love One Another.

CURRICULUM NARRATIVE

Biology

Welcome to secondary school!

Y5/6 Cycle b

- Animals, Including Humans Unit 5
- Animals, Including Humans Unit 6
- Evolution and Inheritance Unit 1

Y5/6 Cycle a

- Living Things Unit 4
- Living Things Unit 3

Y3/4 Cycle b

- Plants Unit 3
- Living Things Unit 2

Y3/4 Cycle a

- Animals, Including Humans Unit 4
- Animals, Including Humans Unit 3

Y1/2 Cycle b

- Animals, Including Humans Unit 1
- Animals, Including Humans Unit 2
- Living Things Unit 1

Y1/2 Cycle a

- Plants Unit 2
- Plants Unit 1

EYFS

Children at the expected level of development will: Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Your biology journey starts here!

CURRICULUM NARRATIVE

Chemistry

Welcome to secondary school!

Y5/6 Cycle b — Materials Unit 4

Y5/6 Cycle a — Materials Unit 3

Y3/4 Cycle b

Y3/4 Cycle a — Materials Unit 2, Materials Unit 1

Y1/2 Cycle b

Y1/2 Cycle a

EYFS

Children at the expected level of development will: Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Your chemistry journey starts here!

CURRICULUM NARRATIVE

Physics

Welcome to secondary school!

Y5/6 Cycle b

- Light and Seeing Unit 2

Y5/6 Cycle a

- Electricity Unit 3
- Sound and Hearing Unit 2
- Earth and Space Unit 3
- Movement, Forces and Magnets Unit 3

Y3/4 Cycle b

- Sound and Hearing Unit 1
- Electricity Unit 2

Y3/4 Cycle a

- Earth and Space Unit 2
- Light and Seeing Unit 1
- Movement, Forces and Magnets Unit 2

Y1/2 Cycle b

- Earth and Space Unit 1
- Electricity Unit 1

Y1/2 Cycle a

- Movement, Forces and Magnets Unit 1

EYFS

Children at the expected level of development will: Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Your physics journey starts here!

CURRICULUM NARRATIVE

Science Yearly Overview

EYFS	**Children at the expected level of development will:** Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Area of Science	Learning Focus	Y1/2 Cycle a	Y1/2 Cycle b	Y3/4 Cycle a	Y3/4 Cycle b	Y5/6 Cycle a	Y5/6 Cycle b
Biology	Plants	Unit 1 Unit 2			Unit 3		
	Living Things		Unit 1		Unit 2	Unit 3 Unit 4	
	Animals & Humans		Unit 1 Unit 2	Unit 3 Unit 4			Unit 5 Unit 6
	Evolution & Inheritance						Unit 1
Chemistry	Materials	Unit 1 Unit 2			Unit 3		Unit 4
Physics	Movement, Forces & Magnets	**Unit 1**		Unit 2		Unit 3	
	Earth & Space		Unit 1	Unit 2		Unit 3	
	Light & Seeing			Unit 1			Unit 2
	Sound & Hearing				Unit 1	**Unit 2**	
	Electricity		**Unit 1**		Unit 2	Unit 3	

Bold = In addition to the National Curriculum

CURRICULUM NARRATIVE

Threshold Concepts in Science	
	Animals, humans and plants are made up of complex interacting systems in order to function.
	Organisms require a supply of energy for organisms to carry out the basic functions of life and to grow.
	The earth is a complex of interacting rock, water, air and life.
	The particle theory of matter is the abstract idea that helps us to develop an understanding of why materials behave as they do.
	Energy is a powerful and unifying abstract idea which is difficult to define.
	Forces change the state of rest or motion of a body. They hold matter together and interplay between all objects.

CURRICULUM NARRATIVE

Read like a Scientist

Why do scientists read:
To base their research

To interpret others' data and critique their findings.

To find specific information to support their own investigations.

To learn about others' procedures and experiments.

Helps them to understand what has already been discovered.

Write ike a Scientist

Avoid using the first person in your writing (third person is usually used)

Be clear when starting scientific observations.

Be succinct and precise.

Use labelled diagrams to help explain your points.

Correctly use scientific vocabulary.

Threshold Concepts

COMPLEX SYSTEMS
Animals, humans and plants are made up of complex interacting systems in order to function.

ENERGY SUPPLY
Organisms require a supply of energy for organisms to carry out the basic functions of life and to grow.

THE EARTH
The earth is a complex of interacting rock, water, air and life.

PARTICLE THEORY
The particle theory of matter is the abstract idea that helps us to develop an understanding of why materials behave as they do.

ENERGY
Energy is a powerful and unifying abstract idea which is difficult to define.

FORCES
Forces change the state of rest or motion of a body. They hold matter together and interplay between all objects.

Science is key to providing the foundation for understanding of the changing world. Pupils can develop a sense of excitement and curiosity about natural phenomena. In the EYFS, science is included within "Understanding of the World", where pupils learn about science by undertaking activities that help children to develop working scientifically skills and critical thinking. It is introduced, often indirectly, through activities that encourage every child to explore, problem solve, observe, predict, think, make decisions and talk about the world around them. At KS1 and KS2 the curriculum is underpinned by 6 threshold concepts which are regularly revisited and developed over time. The units are taught in a carefully sequenced manner; ensuring that pupils build knowledge, understanding and enquiry skills, which offer them the firm foundation as they make the transition to secondary school to continue their studies further. The topics studied are hierarchical, increasing in challenge as pupils progress from Y1-6.

The Journey Begins…

In every topic studied throughout a pupil's time in Primary school, there are aspects of Mathematics and English that underpin the science curriculum; we believe this is key to pupils' success in science. The quality and variety of language pupils hear and speak are key factors in developing their scientific vocabulary and presenting scientific justifications, evaluations, conclusions or arguments. Pupils are assisted in making their thinking clear, both to themselves and others, ensuring secure foundations are built by using discussion to probe and remedy misconceptions. We also like to highlight the importance of STEM, discuss the varied nature of scientific careers and embed working scientifically skills into our subject curriculum, emphasizing how science can be put into context within the wider world.

CURRICULUM NARRATIVE

Biology

- Animals, humans and plants are made up of complex interacting systems to function.
- Organisms require a supply of energy for organisms to carry out the basic functions of life and to grow.

The two threshold concepts in **Biology** are taught across the following 3 topics: *Plants, Animals & Humans and Living things & their habitats.* The concepts stem from the idea that all living organisms are made from cells. Most organisms are multicellular - the organism needs to contain sophisticated systems to carry out the various life processes, which require energy. Pupils start by identifying a variety of common animals, describing and comparing their structure. This then leads to pupils grouping common animals into carnivores, herbivores and omnivores as well as identifying the major parts of the human body. Over time, pupils will explore in more depth the major body systems in humans, linked also to the concept of organism requiring energy. We take the opportunity to study the human digestive, circulatory, respiratory and skeletal systems as well as the importance of nutrition, a balanced diet and the impact of lifestyle choices to build on this concept in humans. It is also explored using food chains, habitats, competition as well as in plants, whereby plant structure, transport of materials, substances required for growth and the life cycle of a flowering plant are studied. We take the opportunity to study flowers, trees and plant growth in the spring and summer months, when use of the outdoor area in school can be maximised to support learning. Organisms also require energy to reproduce; this is explored in plants and animals whereby lifecycles, sexual and asexual reproduction are studied. We teach evolution and inheritance towards the end of Year 6. This is due to the topic being more conceptually difficult and students can use the knowledge they have gained in the other aspects of Biology to help build on the idea that plants and animals are classified which links to evolution. A good grounding in reproduction also aids pupil understanding of inheritance.

Chemistry

The Earth is a complex of interacting rock, water, air and life.

- The particle theory of matter is the abstract idea that helps us develop an understanding of why materials behave as they do

The two threshold concepts in **Chemistry** are taught across the *Materials* topic. The concepts stem from the idea that all materials are made from atoms/particles and everyday materials behave in different ways, which can relate to simple physical properties and the arrangement of particles. The concept is more complex and increasingly abstract over the course of the curriculum, which prepares students for Chemistry at secondary school. Other aspects of chemistry that are developed using the concept that earth's resources can occur because of natural phenomena. Pupils start by distinguishing between an object and the materials from which it is made, identifying everyday materials, describing their physical properties, being able to group materials based their properties and comparing the suitability of everyday materials for uses. The opportunity is then taken to look at the physical properties of rocks and rock, fossil and soil formation which links with the concept that earth is a complex of interacting rock water, air and life. As the topic progresses pupils look at the particle model of solids, liquids and gases and what happens to materials when heated or cooled and how evaporation and condensation are related to the water cycle. In Year 5 pupils begin to explore the nature of physical and chemical reactions as well as separating simple mixtures.

Physics

- Energy is a powerful and unifying abstract idea which is difficult to define
- Forces change the state of rest or motion of a body. They hold matter together and interplay between all objects

The two concepts in **Physics** are taught across a range of topics including *Light, Sound, Electricity, Earth & Space and Forces & Magnets.* Energy is a fundamental concept of physics that enables the explanation and prediction of many phenomena and contributes to the unification of the various branches of physics. Energy is a difficult concept to understand and master, which is why physics is usually taught from Year 3 onwards. We provide pupils with foundation lessons in earth & space and electricity in Years 1 and 2 to aid in the preparing pupils for this highly abstract concept. The curriculum explores different forms of energy stores including electricity, sound and hearing and light and seeing. Pupils explore light, reflections and shadows before then being able to explain how we see things using ideas about light and its properties. Pupils in Year 4 learn how sounds are made, features of sound waves including pitch, amplitude, and dissipation. Electricity includes common electrical appliances, constructing simple series circuits, common conductors and insulators, recognising components from circuit diagrams and investigating components in series circuits.

Force is a useful idea because it is the key to explaining changes in the motion of an object or in its shape. Understanding forces help us to predict and control the physical world around us. The idea of forces stem from the idea that essentially a force is a push or pull acting upon an object because of its interaction with another object. Pupils study contact and non-contact forces including magnetism and magnetic materials. Contact forces are explored through air and water resistance. Levers, gears and pulleys also look how forces can be useful in everyday contexts.

Earth and Space adopts both concepts, since it involves the force of gravity, which influences many dynamic processes within the earth's interior, on and above its surface. Energy is transferred from the sun to Earth via electromagnetic waves, or radiation. Most of the energy that passes through the upper atmosphere and reaches Earth's surface. The topics studied include the movement of the earth and other planets relative to the sun and its solar system, movement of the moon and explaining day and night. We also take the opportunity to study earth and space in the winter months when nights are longer, and children can participate in observing the moon and stars at a reasonable time at home.

CURRICULUM NARRATIVE

Intent

Our Science curriculum is based on the National Curriculum programmes of study for each year group and is designed to develop the very best young scientists, well equipped to continue their studies as they progress through education. Pupils are encouraged to think, act and speak like scientists, through a consistent and progressive approach across all year groups.

We aim to ensure that all pupils:

- Develop a natural curiosity about the world and confidence to ask questions
- Build secure scientific knowledge and understanding
- Use scientific enquiry skills to predict, observe, test and draw conclusions
- Understand how science has shaped the past, present and future
- Recognise how scientific knowledge links to real world applications and careers

Our curriculum nurtures a love of science, encourages critical thinking and supports pupils in becoming reflective, questioning learners.

Implementation

Science at St. Joseph's is taught through carefully sequenced units of work, which build knowledge and skills progressively over time. Scientific knowledge and working scientifically skills are developed across sequences of lessons, allowing pupils to practise, apply and master key concepts.

Pupils are provided with:

- Hands on practical opportunities to explore scientific ideas
- Opportunities to plan and carry out fair tests
- Time to observe, record, analyse results and identify patterns
- Structured discussion using accurate scientific vocabulary

Learning in Science is enriched through:

- Outdoor learning
- Educational visits
- Visitors and workshops involving people working in scientific fields, providing real life context and building cultural capital

Science is meaningfully linked with other areas of the curriculum, including:

- Reading and writing scientific explanations
- Recording and interpreting results in Mathematics
- Using Computing to collect, present and analyse data

These cross curricular links deepen understanding and reinforce core skills.

Science and Careers
Explicit teaching of career links is embedded within each Science unit.

Pupils are taught how scientific knowledge and skills are used in real world contexts and explore careers associated with each area of study. These may include:

- Scientists and laboratory researchers
- Doctors, nurses and healthcare professionals
- Engineers and inventors
- Environmental scientists and conservationists
- Astronomers, geologists and meteorologists
- Technicians, data analysts and STEM professionals

By exploring these roles, pupils understand the purpose of learning Science, develop aspiration and recognise the relevance of science to future education, employment and everyday life.

Impact
By the time pupils leave St. Joseph's, they will have:

- Developed secure scientific knowledge across biology, chemistry and physics
- Built strong scientific enquiry skills, including questioning, testing and concluding
- Gained confidence in planning investigations and fair tests
- Used scientific vocabulary accurately when talking, writing and explaining
- Made meaningful links between scientific topics and prior learning
- Developed awareness of science related careers and future pathways

Pupil dialogue and work demonstrate a high standard of scientific understanding, with curiosity and enjoyment clearly visible. Pupils leave St. Joseph's able to think, read and write like scientists, with a deep and lasting foundation of scientific knowledge, ready for Key Stage 3 and beyond.

PROGRESSION OF SKILLS

Sound and Hearing						
EYFS	**Y1/2 Cycle a**	**Y1/2 Cycle b**	**Y3/4 Cycle a**	**Y3/4 Cycle b**	**Y5/6 Cycle a**	**Y5/6 Cycle b**
				• Identify how sounds are made, associating some of them with something vibrating • Recognise that vibrations from sounds travel through a medium to the ear • Find patterns between the pitch of a sound and features of the object that produced it • Find patterns between the volume of a sound and the strength of the vibrations that produced it • Recognise that sounds get fainter as the distance from the sound source increases	• Recall the different structures of the ear and the function of each part • Explain how sound waves can be modelled • Describe what happens to a sound wave over time • Calculate the speed of sound in different substances • Explain what an auditory range is • Give examples of animals that have large auditory ranges • Describe how sound can be useful in everyday life	

PROGRESSION OF SKILLS

Light and Seeing						
EYFS	**Y1/2 Cycle a**	**Y1/2 Cycle b**	**Y3/4 Cycle a**	**Y3/4 Cycle b**	**Y5/6 Cycle a**	**Y5/6 Cycle b**
			• Recognise that they need light to see things and that dark is the absence of light. • Notice that light is reflected from surfaces. • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • Recognise that shadows are formed when the light from a light source is blocked by an opaque object. • Find patterns in the way that the size of shadows change.			• Recognise that light appears to travel in straight lines. • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

PROGRESSION OF SKILLS

Electricity						
EYFS	**Y1/2 Cycle a**	**Y1/2 Cycle b**	**Y3/4 Cycle a**	**Y3/4 Cycle b**	**Y5/6 Cycle a**	**Y5/6 Cycle b**
		• Electricity is a form of energy, used for lighting, heating, making sound and making machines and appliances work. • Pylons and cables carry electricity through the countryside, some electricity cables in busy cities are buried underground. • Appliances are devices that run on electricity and they should be used safely (includes, no frayed wires, avoid spillages and keep away from water, not putting objects into sockets. • Compare life in a village that has no electricity. • A circuit is a complete path around which electricity can flow. • Circuits contain components like wires, switches and bulbs.		• Electricity is a form of energy, used for lighting, heating, making sound and making machines and appliances work. • Some appliances run on electricity; some plug into the mains electricity and others run on batteries. • An electrical circuit consists of a cell or battery connected to a component using wires. • A series circuit is where all the components of the circuits are joined in one loop. If one part of the loop is incomplete, then the circuit will not work. • Names of components include cells, wires, bulbs/ lamps, switches and buzzers. • A cell is a single unit, and a battery is a collection of cells. • One way to test to see if a circuit is complete is to use a bulb/lamp, if the lamp turns on then the circuit is complete. • Switches open and close circuits. When a switch is open the bulb/lamp will not light up as the series circuit is incomplete. • Wires are made from metals as they are good conductors of electricity e.g., iron, copper and steel. • Insulators are materials that do not allow electricity to pass through them easily e.g., plastic, wood, rubber and glass. • Thomas Edison invented the first practical incandescent light bulb.	• Recognise circuit symbols in a simple circuit- identify the simple circuit used in a hand torch. • Electric current is measured in amperes; current is a flow of charge. • Associate the brightness of a lamp or volume of a buzzer with the potential difference in a circuit. • Investigate the brightness of a bulb if the PD is increased or the number of bulbs increased in a series circuit. • Investigate how the length of wire affects the brightness of a bulb. • Potential difference is measured in volts. • Resistance, measured in ohms, as the ratio of potential difference (p.d.) to current. • Differences in resistance between conducting and insulating components (quantitative). • Separation of positive or negative charges when objects are rubbed together: transfer of electrons, forces between charged objects. • The idea of electric field, forces acting across the space between objects not in contact.	

PROGRESSION OF SKILLS

Earth and Space						
EYFS	**Y1/2 Cycle a**	**Y1/2 Cycle b**	**Y3/4 Cycle a**	**Y3/4 Cycle b**	**Y5/6 Cycle a**	**Y5/6 Cycle b**
• Learn about the solar system and stars. • Learn about space travel. • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. • Understand the effect of change in seasons on the natural world around them. • Name the 4 seasons.		• Name the 4 seasons and say when in the year they occur. • Observe and describe weather associated with the seasons. • Observe changes across the 4 seasons. • Can describe other features that change throughout the year that are caused by the change in weather e.g. numbers of mini beasts found outside, seed and plant growth, leaves on trees, clothes worn people, hibernation and migration. • Explain how day light (from the sun rising to sun setting)length varies across the year (longer in summer, shorter in winter).	• Name the 4 seasons and say when in the year they occur. • Observe and describe weather associated with the seasons. • Observe changes across the 4 seasons. • Can describe other features that change throughout the year that are caused by the change in weather e.g. numbers of mini beasts found outside, seed and plant growth, • leaves on trees, clothes worn by people, hibernation and migration • Explain how day light (from the sun rising to sun setting)length varies across the year (longer in summer, shorter in winter)		• Name the planets of Our Solar System and understand Our place in Our universe, describe the Sun, Earth, Moon and other planets as approximately spherical bodies. • Describe the movement of the Earth around the sun in the solar system (a full orbit is 365 days, the Earth spins on its axis every 24 hours). • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the day. • Describe the movement of the moon relative to the Earth (lunar cycles take 28 days, the lunar cycle and eclipses). • Describe the movement of the other planets relative to the sun in the solar system (fixed orbits). • Describe what meteors are, and name other objects in space. • Explain how 'The Space Race' has expanded our scientific knowledge and discuss space travel.	

PROGRESSION OF SKILLS

Movement, Forces and Magnets						
EYFS	**Y1/2 Cycle a**	**Y1/2 Cycle b**	**Y3/4 Cycle a**	**Y3/4 Cycle b**	**Y5/6 Cycle a**	**Y5/6 Cycle b**
• Explore how things work. • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice. • Explore the natural world around them. • Describe what they see, hear, and feel whilst outside.	• Observe and describe different ways of moving. • Identify similarities and differences between movement of different objects. • Make suggestions about how objects can be made to move. • Explore contact forces (push and pull). • Explore how objects sink or float. • Know that it is not only ourselves that make things move and ask questions about what is causing movement.		• Compare how things move on different surfaces. • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Describe magnets as having two poles. • Observe how magnets attract or repel each other and attract some materials and not others. • Predict whether two magnets will attract and repel each other, depending on which poles are facing. • Compare and group together a variety of everyday materials on whether they are attracted to a magnet and identify some magnetic materials.		• Know the work of Isaac Newton and know that force is measured in Newtons by a Newton Meter. • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Identify the effects of air resistance. • Identify the effects of water resistance. • Identify the effects of friction acting between moving surfaces. • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater affect.	

PROGRESSION OF SKILLS

Evolution and Inheritance						
EYFS	**Y1/2 Cycle a**	**Y1/2 Cycle b**	**Y3/4 Cycle a**	**Y3/4 Cycle b**	**Y5/6 Cycle a**	**Y5/6 Cycle b**
						• State what is meant by the term evolution. • State the evolution occurs over a long period of time (for multi cellular organisms). • Recall how fossils are formed. • Identify why species show variation. • Explain how animals and plants are adapted to their environment. • Explain what a habitat is. • Identify work done by Charles Darwin, Alfred Wallace, Mary Anning and John Edmonstone. • State the environment humans evolved in. • Explain how geographical location has resulted in the evolution of a spectrum of skin colours.

PROGRESSION OF SKILLS

Materials

EYFS	Y1/2 Cycle a	Y1/2 Cycle b	Y3/4 Cycle a	Y3/4 Cycle b	Y5/6 Cycle a	Y5/6 Cycle b
• Use all their senses in hands on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Discuss the differences between materials and changes they notice. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	• Correctly identify and name an object and the material from which it is made. • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. • Describe the simple physical properties (see vocabulary appendix for examples) of a variety of everyday materials. • Compare a variety of everyday materials on the basis of their simple physical properties. • Group together a variety of everyday materials on the basis of their simple physical properties. • Identify what properties a material needs for a particular purpose. • Name the materials from which different objects are made. • Recognise suitable and unsuitable choices of materials for particular purposes based on physical properties (see vocabulary appendix for examples). • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Know that materials can be either man-made or naturally occurring. • Group objects into man-made or natural categories. • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.			• Group different kinds of rocks on the basis of appearance and simple physical properties, (see vocabulary appendix for examples). • Compare different kinds of rocks on the basis of appearance and simple physical properties, (see vocabulary appendix for examples). • Name the 3 types of rock. • Describe the features of each rock type. • Describe how each rock type is formed within the rock cycle. • Name some different rocks and categorise them based on physical features. • Understand different uses for different rocks and how they change over time. • Explain simply how a fossil is formed. • Recognise that soils are made from rocks and organic matter, (living and dead) and be introduced to different soil types. • Know that all things are made up of particles. • Know that particles are arranged differently in solids, liquids and gases. Name properties of solids, liquids and gases. • Compare and group materials together according to if they are solids, liquids and gases, giving reasons to justify their choices. • Observe that some materials change state when heated or cooled, and are able to give everyday examples of melting and freezing. • Understand that melting and freezing are a state change between solids and liquids. • Measure or research the temperature at which melting and freezing occurs for some materials. • Know that water freezes at 0oc and boils at 100oc. • Understand that condensation is a state change from a gas to a liquid. • Understand that evaporation is a state change from liquid to gas. • Understand that boiling and evaporation are the same state change from liquid to gas but at different temperatures. • Know that the speed of evaporation depends on a number of variables including the temperature. • Describe the water cycle. • Identify the parts played by evaporation and condensation in the water cycle.		• Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. • Discuss the suitability of everyday materials for different purposes based on their properties, giving reasons, based on evidence from comparative and fair tests. • Know the difference between reversible and irreversible changes. • Demonstrate that dissolving, mixing and changes of state are reversible changes. • Explain that some changes results in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. • Understand some materials will dissolve in liquid to form a solution. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving, and evaporating. • Describe how to recover a substance from a solution.

PROGRESSION OF SKILLS

Plants						
EYFS	Y1/2 Cycle a	Y1/2 Cycle b	Y3/4 Cycle a	Y3/4 Cycle b	Y5/6 Cycle a	Y5/6 Cycle b
	• Flowering plants have a root, stem, leaves and a flower. • Trees can be deciduous which means the leaves are lost yearly- usually in the autumn. • Trees can be evergreen which means there are always leaves on the tree (leaves are continually replenished throughout the year. • Trees and plants have roots, stems and leaves but plants have a softer stem • Trees are made of roots, trunk, branches and leaves. • Grasses and ferns consist entirely of leaves. • In autumn, the leaves on deciduous trees change colour, fruits and nuts fall to the ground. Farmers can harvest the crops. • In Spring, birds sing, trees produce leaves and flowers blossom and the landscape changes. • Trees are examples of plants. • Plants can grow from seed or bulbs. • Seeds and bulbs germinate and grow into seedlings. • Seedlings grow into mature plants. • Plants need light, water, space, suitable temperature in order to grow. • Some plants grow best in full sun. • Some plants grow best in the shade. • Some plants need lots of water. • Some plants don't need much water. • Some plants grow quicker than others.			• Plants contain roots to absorb water and nutrients from the soil. • Plant roots also anchor the plant to provide support. • Plants contain a stem/ trunk which is responsible for transporting water and nutrients around the plant. • Plants contain flowers which contain the stamen, carpel, petal, ovule, sepal and stem. • Plants need light, water, space, suitable temperature in order to grow. • The level of nutrients required depends on the type of plant. • Insects like bees and wasps transfer the pollen from the male part of a flower to the female part of other flowers. • Seeds can also be dispersed by wind, animal fur, animals eating them (and excreting them), in water and if the seed pod explodes. • The roots absorb water from the soil, the stem transports it to the leaves, water evaporates from the leaves which causes more water to be absorbed from the soil.		

PROGRESSION OF SKILLS

Animals, Including Humans						
EYFS	**Y1/2 Cycle a**	**Y1/2 Cycle b**	**Y3/4 Cycle a**	**Y3/4 Cycle b**	**Y5/6 Cycle a**	**Y5/6 Cycle b**
		• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • Identify and name a variety of common animals that are carnivores, herbivores and omnivores. • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. • Notice that animals, including humans, have offspring which grow into adults. • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	• Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. • Identify that humans and some other animals have skeletons and muscles for support, protection and movement. • Describe the simple functions of the basic parts of the digestive system in humans. • Identify the different types of teeth in humans and their simple functions. • Construct and interpret a variety of food chains, identifying producers, predators and prey.			• Describe the changes as humans develop to old age. • Describe the key stages in the growth and development of humans. • Recall some of the changes experienced in puberty. • Investigate the gestation periods of other animals in comparison to humans including the length and mass. • Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. • Describe the ways in which nutrients and water are transported within animals, including humans.

PROGRESSION OF SKILLS

Living Things						
EYFS	**Y1/2 Cycle a**	**Y1/2 Cycle b**	**Y3/4 Cycle a**	**Y3/4 Cycle b**	**Y5/6 Cycle a**	**Y5/6 Cycle b**
• Explore the natural world around them, make observations and draw pictures of animals and plants. • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things.	•	• Identify the differences between things that are living, dead, and things that have never been alive, using some of the 7 life processes (movement, respiration, sensitivity, growth, reproduction, excretion, nutrition). • Identify that most living things live in habitats to which they are suited. • Explain in simple terms how an animal or plant is suited to its habitat. • Name a variety of plants and animals in their habitats, including micro-habitats. • Explain that different conditions in a habitat and micro habitat can affect the number and type of plants/animals that live there. • Describe how plants and animals depend on each other for food and shelter. • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. • Construct a simple food chain that includes humans (e.g. grass, cow, human) with arrows pointing in the correct direction.	•	• Know the 7 life processes of living organisms. • Use the 7 life processes to determine if an organism is living. • Describe similarities and differences between examples of plants and animals. • Know the features of mammals, amphibians, fish, birds, reptiles (vertebrates) and invertebrates. • Group living things in a variety of ways using key characteristics. • Know and explore the work of Carl Linnaeus. • Use classification keys to help group and identify a variety of living things in their local and wider environment. • Use classification keys to name a variety of living things. • Recognise that environments can change, and this can sometimes pose dangers to living things. • Understand that human actions can impact on the environment and suggest some solutions to the issues.	•	• Know that reproduction is when an animal or plant produces on or more individuals similar to itself. • Explain that sexual reproduction requires both male and female DNA (sex cells) and will produce offspring that are similar, but not identical to the parents. • Explain that asexual reproduction will produce offspring that is identical to the parent and only requires on parent e.g., bulbs, tubers and runners. • Explain the life cycle of a mammal, amphibian, insect and a bird. • Explain the process of metamorphosis using frogs and butterflies as examples. • Describe the differences in the life cycles of a mammal, amphibian, insect and a bird. • Use prior knowledge of parts of a flower to explain the stages involved in the reproduction process (pollination, fertilisation and germination). • Know that living things can be grouped according to different criteria. • Know that a cell is made up of nucleus, cytoplasm and membrane. • Know that living things can be multicellular or unicellular (bacteria). • Explain in simple terms how the Linnaeus system is used to classify living things. • Explain why we need to group living things. • Explain possible difficulties with classification (penguins and whales). • Know that classification keys are used to group living things based on recognisable characteristics. • Construct a classification key. • Explain what microorganisms are and can name some. • Give examples of some situations where microorganisms can be helpful. • Give examples of some situations where microorganisms can be harmful.

CURRICULUM END POINTS

	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Complex Systems	• Observe animals and plants in the natural world. • Notice similarities and differences between living things	• Identify and name common animals. • Describe and compare animal body structures. • Identify basic parts of the human body	• Describe the importance of exercise, hygiene and diet. • Compare living things in habitats and simple food chains. • Describe basic plant needs and growth	• Identify and describe functions of plant parts. • Describe the human digestive system. • Recognise skeletons and muscles in animals and humans.	• Classify living things in different environments. • Describe the circulatory and respiratory systems. • Understand nutrition and lifestyle impacts.	• Describe life cycles of plants and animals. • Explain reproduction (sexual and asexual). • Describe human development to old age.	• Classify living things using standard systems. • Explain the circulatory system in detail. • Understand the impact of drugs, exercise and lifestyle. • Explain evolution, inheritance, variation and adaptation.

	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Energy	• Observe changes in the natural world (seasons, weather). • Observe natural changes linked to energy (sunlight, warmth).	• Identify animals as carnivores, herbivores and omnivores (energy sources). • Recognise light sources and simple electrical appliances.	• Understand that animals get energy from food. • Describe simple food chains. • Recognise that electricity and light help us in daily life.	• Understand that plants make their own food and transport nutrients. • Describe how the digestive system extracts energy. • Explore light, reflection and shadows. • Explore sound: pitch, volume and vibrations.	• Explain how the circulatory system transports oxygen and nutrients. • Explore how sound travels and dissipates.	• Understand energy transfer in life cycles and reproduction. • Explain how light travels and how we see. • Investigate electrical circuits and components.	• Explain how inherited traits and adaptations support survival (energy efficiency). • Apply energy transfer ideas across light, sound, electricity and space.

CURRICULUM END POINTS

	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
The Earth	• Notice differences between environments. • Observe seasonal changes.	• Recognise day and night.	• Observe weather patterns and seasonal changes. • Compare habitats.	• Compare and group rocks; describe fossil and soil formation.	• Understand how environments change and can pose dangers.	• Describe the movement of Earth and planets relative to the Sun. • Describe the movement of the Moon relative to Earth..	• Explain Earth's place in the solar system using scientific models. • Understand gravity as a force acting within Earth's system.

	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Particle Theory	• Explore simple changes of state (melting, freezing).	• Distinguish between objects and materials. • Identify and describe everyday materials.	• Group materials by properties and suitability. • Observe heating and cooling (water cycle links)	• Recognise solids, liquids and gases. • Describe changes of state.	• Understand evaporation and condensation in the water cycle.	• Investigate properties of materials (solubility, conductivity, transparency). • Explore reversible and irreversible changes. • Separate mixtures using scientific processes	• Apply particle theory to explain chemical changes

	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Forces	• Explore pushes, pulls and movement in play.	• Recognise simple forces (push/pull)..	• Identify magnetic and non-magnetic materials.	• Explore magnets and magnetic forces	• Investigate contact and non-contact forces. • Explore air resistance, water resistance and friction. • Use levers, pulleys and gears.	• Understand gravity as a force. • Investigate resistance forces in more depth.	• Apply force concepts to explain planetary motion and physical phenomena.

FIELDWORK

Science						
Y1/2 (Cycle a)	**Autumn 1** *Magnets and Forces*	**Autumn 2**	**Spring 1** *Materials*	**Spring 2** *Materials*	**Summer 1** *Plants*	**Summer 2** *Plants*
	How does pushing harder or softer change how something moves?		Can we group materials by hard/soft, rough/smooth, or bendy/not bendy?	Which materials keep us safe when we are playing?	What different types of plants can we find around our school or playground?	Do plants grow better in the sun or the shade?

Science						
Y3/4 (Cycle a)	**Autumn 1** *Animals, Including Humans*	**Autumn 2** *Animals, Including Humans*	**Spring 1** *Light and Seeing*	**Spring 2** *Movement, Forces and Magnets*	**Summer 1**	**Summer 2** *Earth and Space*
	What different types of skeletons do animals have in our local environment?	What food chains can we find in our school grounds or local area?	Which objects make the clearest shadows and why?	Do magnets work better on some materials than others?		What different rocks can we find around our school grounds, and how can we describe their features?

Science						
Y5/6 (Cycle a)	**Autumn 1** *Living Things*	**Autumn 2** *Living Things*	**Spring 1** *Sound and Hearing*	**Spring 2** **Movement, Forces and Magnets**	**Summer 1** *Electricity*	**Summer 2** *Earth and Space*
	Which flowers in our school grounds are likely to be pollinated by insects or wind?	Can we create our own classification key for organisms found in our school? Why?	Does sound travel differently in open spaces compared to enclosed areas around school?	How does changing the shape of an object affect how quickly it falls?	Do weather conditions on the school field (dry or windy) change how static electricity works?	What changes do we notice in light and shadow around our school from morning to afternoon?

FIELDWORK

Science						
	Autumn 1 *Animals Including Humans*	**Autumn 2** *Animals Including Humans*	**Spring 1** *Earth and Space*	**Spring 2** *Electricity*	**Summer 1** *Living Things*	**Summer 2**
Y1/2 (Cycle b)	Where do different animals like to live, around our school?	Can we find living things at different stages of their life cycle?	What happens to plants, trees, and animals during different seasons?	Which part of the school grounds would be best to place a beat box at break?	What habitats can we find around our school, and what lives in them?	

Science						
	Autumn 1 *Sound and Hearing*	**Autumn 2** *Living Things*	**Spring 1** *Materials*	**Spring 2** *Electricity*	**Summer 1** *Plants*	**Summer 2**
Y3/4 (Cycle b)	Which area, outside, has the loudest pitch?	What evidence can we find in our fieldwork area that shows plants and animals carry out all seven life processes?	What evidence can we find outdoors that shows materials can change state when heated or cooled?	Which materials around our school are conductors and which are insulators?	How do seeds move around our school grounds? Where are most seeds found?	

Science						
	Autumn 1 *Animals Including Humans*	**Autumn 2** *Evolution*	**Spring 1**	**Spring 2**	**Summer 1** *Materials*	**Summer 2** *Light and Seeing*
Y5/6 (Cycle b)	How do our bodies change when we are active outside in different parts of the school grounds?	What taxonomic groups do the organisms in our school grounds belong to?			What is the best way to separate sand from other materials in our sand area?	How do light sources and objects affect the size, shape and position of shadows?

CAREER LINKS AND INFLUENTIAL PEOPLE

Science							
Y1/2 (Cycle a)		**Autumn 1** *Magnets and Forces*	**Autumn 2**	**Spring 1** *Materials*	**Spring 2** *Materials*	**Summer 1** *Plants*	**Summer 2** *Plants*
	Career	Electronics Engineer		Materials Scientist	Metallurgist	Landscape Designer	Soil Scientist
	Influential Person	Hans Christian Orsted		Builders Yard	Charles McIntosh	Joseph Hooker	Alfred Russel Wallace

Science							
Y3/4 (Cycle a)		**Autumn 1** *Animals, Including Humans*	**Autumn 2** *Animals, Including Humans*	**Spring 1** *Light and Seeing*	**Spring 2** *Movement, Forces and Magnets*	**Summer 1**	**Summer 2** *Earth and Space*
	Career	Radiologist	Animal Handler	Ophthalmologist	Radiographer		Glaciologist
	Influential Person	Jessica Leigh Dobson	Ian Wilmut & Keith Campbell	Thomas Young	William Gilbert		Mary Anning

Science							
Y5/6 (Cycle a)		**Autumn 1** *Living Things*	**Autumn 2** *Living Things*	**Spring 1** *Sound and Hearing*	**Spring 2** **Movement, Forces and Magnets**	**Summer 1** *Electricity*	**Summer 2** *Earth and Space*
	Career	Beekeeper	Wildlife Rehabilitator	ENT Surgeon	Controls Research Scientist	Electrical Engineer	Robotics Engineer
	Influential Person	Jane Goodall	Carl Linnaeus	Benjamin Machta	Isaac Newton	George Ohm	Tim Peak

CAREER LINKS AND INFLUENTIAL PEOPLE

Science							
Y1/2 (Cycle b)		**Autumn 1** *Animals Including Humans*	**Autumn 2** *Animals Including Humans*	**Spring 1** *Earth and Space*	**Spring 2** *Electricity*	**Summer 1** *Living Things*	**Summer 2**
	Career	Vet 	Food Scientist 	Weather Reporter 	High Voltage Engineer 	Farmer 	
	Influential Person	Sir David Attenborough 	Charles Elton 	Greta Thunberg 	Joseph Swan 	Steve Backshall 	

Science							
Y3/4 (Cycle b)		**Autumn 1** *Sound and Hearing*	**Autumn 2** *Living Things*	**Spring 1** *Materials*	**Spring 2** *Electricity*	**Summer 1** *Plants*	**Summer 2**
	Career	Audiologist 	Horticulturalist 	Water Cycle Scientist 	Electrician 	Horticulturist 	
	Influential Person	Alexander Graham Bell 	Joseph Paxton 	Charles MacIntosh 	Michael Faraday 	Joseph Banks 	

Science							
Y5/6 (Cycle b)		**Autumn 1** *Animals Including Humans*	**Autumn 2** *Evolution*	**Spring 1**	**Spring 2**	**Summer 1** *Materials*	**Summer 2** *Light and Seeing*
	Career	Midwife 	Palaeontologist 			Chemical Engineer 	Optician 
	Influential Person	William Harvey 	Charles Darwin 			Alfred Nobel 	Isaac Newton 

BRITISH VALUES, TRUST VIRTUES AND CATHOLIC SOCIAL TEACHINGS

Science

Y1/2 (Cycle a)	Autumn 1 *Magnets and Forces*	Autumn 2	Spring 1 *Materials*	Spring 2 *Materials*	Summer 1 *Plants*	Summer 2 *Plants*
British Values	Individual Liberty		Individual Liberty	Individual Liberty	Mutual Respect & Tolerance	Mutual Respect & Tolerance
Trust Virtues and Catholic Social Teachings	Responsibility		Resilience	Resilience	Stewardship	Stewardship

Science

Y3/4 (Cycle a)	Autumn 1 *Animals, Including Humans*	Autumn 2 *Animals, Including Humans*	Spring 1 *Light and Seeing*	Spring 2 *Movement, Forces and Magnets*	Summer 1	Summer 2 *Earth and Space*
British Values	Mutual Respect & Tolerance	Mutual Respect & Tolerance	Individual Liberty	Individual Liberty		Democracy
Trust Virtues and Catholic Social Teachings	Common Good	Common Good	Human Dignity	Self- Belief		Subsidiarity

Science

Y5/6 (Cycle a)	Autumn 1 *Living Things*	Autumn 2 *Living Things*	Spring 1 *Sound and Hearing*	Spring 2 **Movement, Forces and Magnets**	Summer 1 *Electricity*	Summer 2 *Earth and Space*
British Values	Mutual Respect & Tolerance	Mutual Respect & Tolerance	Individual Liberty	Individual Liberty	Individual Liberty	Democracy
Trust Virtues and Catholic Social Teachings	Common Good	Common Good	Human Dignity	Self- Belief	Responsibility	Subsidiarity

Love God, Love Learning, Love One Another.

BRITISH VALUES, TRUST VIRTUES AND CATHOLIC SOCIAL TEACHINGS

Science

Y1/2 (Cycle b)	Autumn 1 *Animals Including Humans*	Autumn 2 *Animals Including Humans*	Spring 1 *Earth and Space*	Spring 2 *Electricity*	Summer 1 *Living Things*	Summer 2
British Values	Individual Liberty	Mutual Respect & Tolerance	Democracy	Individual Liberty	Mutual Respect & Tolerance	
Trust Virtues and Catholic Social Teachings	Responsibility	Responsibility	Stewardship	Self- Belief	Stewardship	

Science

Y3/4 (Cycle b)	Autumn 1 *Sound and Hearing*	Autumn 2 *Living Things*	Spring 1 *Materials*	Spring 2 *Electricity*	Summer 1 *Plants*	Summer 2
British Values	Individual Liberty	Mutual Respect & Tolerance	Individual Liberty	Individual Liberty	Individual Liberty	
Trust Virtues and Catholic Social Teachings	Human Dignity	Common Good	Human Dignity	Self- Belief	Common Good	

Science

Y5/6 (Cycle b)	Autumn 1 *Animals Including Humans*	Autumn 2 *Evolution*	Spring 1	Spring 2	Summer 1 *Materials*	Summer 2 *Light and Seeing*
British Values	Mutual Respect & Tolerance	Mutual Respect & Tolerance			Individual Liberty	Individual Liberty
Trust Virtues and Catholic Social Teachings	Common Good	Subsidiarity			Responsibility	Self- Belief

SEND

The BHCET History curriculum has been designed to be delivered to the whole class. However, the tasks are adapted by class teachers to meet the needs of individual children. To ensure pupils with SEND achieve well, they should be exposed to the same learning as their peers; however, the way they evidence their learning through the tasks can be adapted.

Through scaffolding, tasks can be adapted to ensure all learners can access and evidence the same threshold concepts and learning objectives as their non-SEND counterparts. Scaffolding strategies can include providing sentence starters, a writing frame, vocabulary banks, sorting and matching cards or visual prompts. Reactive or proactive adaptations can make the BHCET curriculum accessible and achievable for all.

Other strategies of adaptation are outlined through the EEF's Five-a-Day principles, which include explicit instruction, metacognitive strategies, flexible grouping and the use of technology:

Scaffolding

'Scaffolding' is a metaphor for temporary support that is removed when it is no longer required. Initially, a teacher would provide enough support so that pupils can successfully complete tasks that they could not do independently. This requires effective assessment to gain a precise understanding of the pupil's current capabilities.
Examples: Support could be visual, verbal, or written. Writing frames, partially completed examples, knowledge organisers, sentence starters can all be useful. Reminders of what equipment is needed for each lesson and classroom routines can be useful. Scaffolding discussion of texts: promoting prediction, questioning, clarification and summarising.

Explicit Instruction

Explicit instruction refers to a range of teacher-led approaches, focused on teacher demonstration followed by guided practice and independent practice. Explicit instruction is not just "teaching by telling" or "transmission teaching" One popular approach to explicit instruction is Rosenshine's 'Principles of Instruction'.
Examples: Worked examples with the teacher modelling self-regulation and thought processes is helpful. A teacher might teach a pupil a strategy for summarising a paragraph by initially 'thinking aloud' while identifying the topic of the paragraph to model this process to the pupil. They would then give the pupil the opportunity to practise this skill. Using visual aids and concrete examples promotes discussion and links in learning.

Cognitive and Metacognitive Strategies

Cognitive strategies are skills like memorisation techniques or subject specific strategies like methods to solve problems in maths. Metacognitive strategies help pupils plan, monitor and evaluate their learning
Examples: Chunking the task will support pupils with SEND – this may be through provision of checklists, instructions on a whiteboard or providing one question at a time. This helps reduce distractions to avoid overloading working memory.
Prompt sheets that help pupils to evaluate their progress, with ideas for further support.

Flexible Grouping

Flexible grouping describes when pupils are allocated to smaller groups based on the individual needs that they currently share with other pupils. Such groups can be formed for an explicit purpose and disbanded when that purpose is met
Examples: Allocating temporary groups can allow teachers to set up opportunities for collaborative learning, for example to read and analyse source texts, complete graphic organisers, independently carry out a skill, remember a fact, or understand a concept. Pre-teaching key vocabulary, is a useful technique.

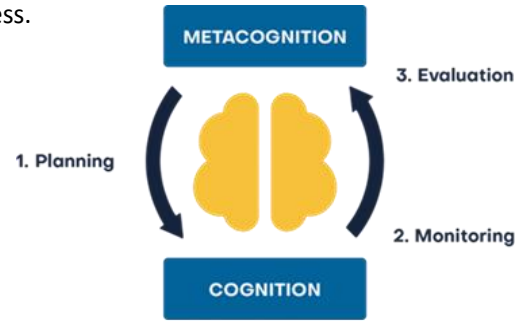
Use of Technology

Technology can assist teacher modelling. Technology, as a method to provide feedback to pupils and/ or parents can be effective, especially when the pupil can act on this feedback.
Examples: Use a visualizer to model worked examples. Technology applications, such as online quizzes can prove effective. Speech generating apps to enable note-taking and extended writing can be helpful.

ASSESSMENT

Assessment comprises two <u>linked</u> processes:

Formative Assessment: provides Assessment **<u>for</u>** Learning. Is a continuous process and an integral part of teaching and learning; informal observations, dialogue/effective use of questioning, consolidation activities, low stakes quizzing, routine marking; and pupil/peer assessment all contribute to the developing profile of progress. When pupils make changes and consider actions to their work, based on the activity, they are 'self-regulating' their work. Self-regulating activities can be termed Assessment **<u>as</u>** Learning. Self-regulated learners are aware of their strengths and weaknesses, and can motivate themselves to engage in, and improve, their learning. Pupils start by **planning** how to undertake a task, working on it while **monitoring** the strategy to check progress, then **evaluating** the overall success.



Metacognitive Regulation Cycle
(EEF Metacognition & Self regulation Guidance)

Summative Assessment: provides Assessment **<u>of</u>** Learning and is a judgement of attainment at key points throughout the year- using past knowledge to measure attainment and progress. Examples of this are standardised tests, tasks and end of term/annual assessments which include a sample of pupil's prior learning.

Assessment is a continuous process which is integral to teaching and learning and:

- Enables an informed judgement to be made about a pupil's understanding, skills, attitude to learning and successful acquisition of knowledge as they move through the curriculum.
- Incorporates a wide range of assessment techniques to be used in different contexts/purposes.
- Is accompanied by **clear assessment criteria** that enables effective marking and feedback, a reliable progress evaluation to be given and demonstrates clearly what a pupil must do to improve.
- Provides feedback recognising achievement, increasing pupil confidence/motivation.
- Supports learning by making clear to pupils: what they are trying to achieve; what they have achieved; what the learning gaps and misconceptions are and what the next steps in learning are.
- Allows regular subject specific extended writing and access to high quality text/ reading.
- Should be moderated and standardised to ensure **<u>purposeful, meaningful, and timely feedback.</u>**
- Includes feedback to pupils to help them understand what they need to improve, challenging them to achieve their target rather than a grade.

Allows leaders and staff to make timely adaptations to the curriculum.