



Science Yearly Overview and Key Questions

	Autumn	Spring	Summer
EYFS ELGs	<p><u>The Natural World</u> 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</p>		
Foundational Knowledge	<p>Name some common plants / vegetation, e.g. grass, tree, bush, daisy, dandelion (and other plants and tree names local to their environment, e.g. reeds / lily pads in a school pond). Examine change over time, for example, the life cycle of different plants / fruit / vegetables, growing plants from seeds and plants which go to seed (collect seeds). Talk about simple plant parts and what happens to them. Use language such as leaves, roots, stem and petal. Talk about simple similarities and differences in plants.</p>		
Year 1/2 Cycle A	<p><u>Seasonal changes and daily weather BIOLOGY</u> NC: observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies What are the four seasons? What's the weather like in Autumn, Winter, Spring and Summer? Why does day become night?</p> <p><u>Plants – trees BIOLOGY</u> NC: identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p>	<p><u>Everyday Materials PHYSICS</u> NC: distinguish between 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 of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties What are materials?</p> <ul style="list-style-type: none"> • What are things made of in school? • How can I describe materials? • Which materials are waterproof and which are not? • Which materials are transparent and which are opaque? 	<p><u>Re-visit 1: Plants Structure of plants common and wild plants trees BIOLOGY</u> NC:• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees</p> <ul style="list-style-type: none"> • What do I remember about plants? • Remember: What are the parts of a plant? • Remember: What are deciduous and evergreen trees? <p><u>Revisit 2: Animals including humans BIOLOGY</u></p>

Identify and describe the basic structure of a variety of common flowering plants, including trees

- What are the parts of a plant?
- What are wild plants and where do you find them?
- What are garden plants and where do you find them?
- What makes a tree?
- What types of tree are there?
- What's the difference between trees?

Animals including humans

BIOLOGY

NC: 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

- What is an animal?
- What are mammals?
- What are birds?

Revisit 1: Animals, including humans

BIOLOGY

NC: 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

- What features do animals have?
- What are the features of the animal group?

NC: 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

- What do I remember about animals?
- Can I compare animals?
- What makes me an animal?

	<ul style="list-style-type: none"> • What are reptiles? • What is similar and what is different? What does food tell us about an animal? What makes me an animal? • What senses do I have? 		
<p>Year 1/2 Cycle B</p>	<p><u>Living things and their habitats</u></p> <p><u>BIOLOGY</u></p> <p>NC: explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including microhabitats. 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.</p> <ul style="list-style-type: none"> • What is alive and what is not? • What do all living things have in common? • Where do plants and animals live? • What plants and animals live in our local environment? • What are food chains? • How are they connected? • Why do plants and animals need each other? 	<p><u>Uses of everyday materials</u></p> <p><u>PHYSICS</u></p> <p>NC: identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p> <ul style="list-style-type: none"> • What are materials used for? • What happens when we squash, bend, twist or stretch a material? • What's the right material for the job? What's the most absorbent material? • Who invented waterproofing? <p><u>Revisit: Living things and their habitats/materials</u></p> <p>NC: explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>identify that most living things live in habitats to which they are suited and describe how</p>	<p><u>Plants</u></p> <p><u>BIOLOGY</u></p> <p>NC: observe and describe how seeds and bulbs grow into mature plants</p> <p>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p> <ul style="list-style-type: none"> • How do seeds germinate and what happens? • What happens when bulbs sprout? • What do plants need to thrive and be healthy? • What can happen if plants don't get the things they need? • What do I notice about plants around the school? How are they healthy? How are they unhealthy? • How do seeds and bulbs grow? • What do plants need to be healthy? <p><u>Revisit : Animals including humans</u></p> <p><u>BIOLOGY</u></p>

	<p><u>Animals, including humans</u></p> <p><u>BIOLOGY</u></p> <p>NC: 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</p> <ul style="list-style-type: none"> • REMEMBER: what is an animal? • How do animals change as they mature? How do we change as we mature? • What do all animals need to stay alive? Keeping healthy: why do we exercise? Why do we eat different types of food? 	<p>different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>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</p> <p>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p> <ul style="list-style-type: none"> • What is it made from? • What is alive, what is not alive and what has never been alive? • What materials do our pets have or need? Why is that? 	<p>NC: notice that animals, including humans, have offspring which grow into adults</p> <p>find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p> <ul style="list-style-type: none"> • What do I know about animals including humans?
<p>Year 3 / 4 Cycle A</p>	<p><u>Living things and habitats</u></p> <p><u>BIOLOGY</u></p> <p>NC: recognise that living things can be grouped in a variety of ways</p> <p>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p>	<p><u>Animals including humans</u></p> <p><u>BIOLOGY</u></p> <p>NC: describe the simple functions of the basic parts of the digestive system in humans</p> <p>identify the different types of teeth in humans and their simple functions</p>	<p><u>Electricity</u></p> <p><u>PHYSICS</u></p> <p>NC: identify common appliances that run on electricity</p> <p>construct a simple series electrical circuit, identifying and naming its basic parts,</p>

recognise that environments can change and that this can sometimes pose dangers to living things

- What are the characteristics of living things?
- What animals are vertebrates? What animals are invertebrates?
- What groups are plants classified in?
- What is classification?
- How do I use a key?
- What are classification keys?
- What happens if the environment in a habitat changes?

States of Matter

CHEMISTRY

NC: compare and group materials together, according to whether they are solids, liquids or gases

observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)

identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

- What is matter?
- What does 'state' mean?
- What are solids, liquids and gases?

Melting: how do materials change state?

- Evaporating: how do materials change

construct and interpret a variety of food chains, identifying producers, predators and prey

What teeth do

humans have?

- What do they do?
- Why do we have teeth?
- How does our mouth and teeth help digestion?
- What's the process?
- Can teeth tell us what animals eat?

Revisit: Living things and their habitats

NC: recognise that living things can be grouped in a variety of ways

explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment

recognise that environments can change and that this can sometimes pose dangers to living things

- What animals are vertebrates and invertebrates?
- What groups are plants classified in?

Explain it: what's a

classification key and

how do you use it?

including cells, wires, bulbs, switches and buzzers

identify whether or not a lamp will light in a simple series circuit, based on whether or not

the lamp is part of a complete loop with a battery
recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
recognise some common conductors and insulators, and associate metals with being good conductors

- What appliances use electricity?
- What sort of power makes them work?
- What are the everyday appliances that run on electricity - battery or mains?
- What are the components in a simple series circuit? Test it – what happens when a circuit is open or closed?
- What are the effects of changing circuit components and batteries?

Sound

PHYSICS

NC: 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

	<p>state?</p> <ul style="list-style-type: none"> • Condensing: how do materials change state? <p>Summary: how do materials change their state of matter?</p>		<p>and the strength of the vibrations that produced it</p> <p>recognise that sounds get fainter as the distance from the sound source increases</p> <ul style="list-style-type: none"> • What is sound? <p>Remember particles from states of matter How does sound travel? What is the pitch and loudness of sound?</p>
<p>Year 3 / 4 Cycle B</p>	<p><u>Rocks</u></p> <p><u>CHEMISTRY</u></p> <p>NC: compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p>	<p><u>Forces and Magnets</u></p> <p><u>PHYSICS</u></p> <p>NC: compare how things move on different surfaces</p>	<p><u>Light</u></p> <p><u>PHYSICS</u></p> <p>NC: recognise that they need light in order to see things and that dark is the absence of light</p> <p>notice that light is reflected from surfaces</p>

describe in simple terms how fossils are formed when things that have lived are trapped within rock

recognise that soils are made from rocks and organic matter

- How are rocks formed?
- What types of rocks are there?
- Can rocks change?
- How can we test a rock to see if it is limestone or chalk?
- Is soil just dirt? What makes soil?
- How are fossils formed?

Animals including humans

BIOLOGY

NC: 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

- What effect does the food we eat have?
- Where is my skeleton and what does it do?
- Where are my muscles and what do they do?

Revisit Rocks

- How are rocks formed and what types

notice that some forces need contact between 2 objects, but magnetic forces can act at a distance

observe how magnets attract or repel each other and attract some materials and not others compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials

describe magnets as having 2 poles

predict whether 2 magnets will attract or repel each other, depending on which poles are facing

- What are contact forces?
- How do surfaces affect the motion of an object?
- How does friction affect moving objects?
- What is a noncontact force? How is this different to a contact force?
- How do magnets attract and repel?
- Which materials are magnetic?

Plants

BIOLOGY

NC: identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers

explore the requirements of plants for life and

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

- Do we need light to see things?
Remember: what are light sources and what are not light sources?
- How are shadows formed?
- What happens to the size of a shadow when the object moves closer to, or away from, the light source?

Revisit: Animals including animals

- REMEMBER: what effect does the food we eat have?
- Remember: where is my skeleton and what does it do?
- Remember: where are my muscles and what do they do?

are there?

- Remember: how can rocks change?
- Remember: how are fossils formed and how do we know?

growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant

investigate the way in which water is transported within plants

explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal

- What are the parts of a flowering plant? What do they do?
- Do all plants need the same things to thrive and grow?
- How do leaves make food for the plant
How does water move through a plant?
- What do flowers do?
What is pollination?

Properties and changes of materialsCHEMISTRY

NC: 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

know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution

use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating

give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic

demonstrate that dissolving, mixing and changes of state are reversible changes explain that some changes result in the formation of new materials, and that this kind

ForcesPHYSICS

NC: 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, water resistance and friction, that act between moving surfaces

recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect

- When is friction helpful and when is it not? What's the effect of air resistance?
- What's the effect of water resistance?
- Who was Galileo Galilei?

Earth in Space
PHYSICS

NC: describe the movement of the Earth and other planets relative to the sun in the solar system

Living things and their habitats
BIOLOGY

NC: describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals

- What's the difference between a mammal and an amphibian?
- Life cycle differences – what's the difference between an insect and a bird? What is similar and what is different between the life cycles of a mammal, an insect, an amphibian and a bird?
- Summer birds – who was Maria Merion and what did she do?
- The science of life - how do living things reproduce?
- Plants and animals: what's the life process of reproduction?

	<p>of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</p> <ul style="list-style-type: none"> • What properties do materials have? How do we use them • What is a solution and what is a mixture? How can we separate materials from a mixture? • How can we separate materials from a solution? • What changes are reversible? What changes are irreversible? <p><u>Animal including humans</u></p> <p><u>BIOLOGY</u></p> <p>NC: describe the changes as humans develop to old age</p> <p>What is the human timeline</p> <p>How do we change into adults?</p> <p>How does human and animal lifespan compare?</p>	<p>describe the movement of the moon relative to the Earth</p> <p>describe the sun, Earth and moon as approximately spherical bodies</p> <p>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p> <ul style="list-style-type: none"> • What are the planets in our solar system? • How does our view of the Moon change in a lunar month? • Why does the rotation of Earth result in night and day? • Why is the Earth's tilt (axis) responsible for the seasons? 	<p>FORCES continued</p> <p>NC: explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</p> <ul style="list-style-type: none"> • How do levers help us? • How do pulleys and gears help us?
<p>Year 6</p>	<p><u>Electricity</u></p> <p><u>PHYSICS</u></p> <p>NC: associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>compare and give reasons for variations in how components function, including the brightness</p>	<p><u>Animals including humans (water transport)</u></p> <p><u>BIOLOGY</u></p> <p>NC: describe the ways in which nutrients and water are transported within animals, including humans</p> <ul style="list-style-type: none"> • Remember circulation and digestion: how are these two systems connected? 	<p><u>Living things and their habitats</u></p> <p><u>BIOLOGY</u></p> <p>describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</p>

of bulbs, the loudness of buzzers and the on/off position of switches
use recognised symbols when representing a simple circuit in a diagram

- What is electricity?
- How does it work?
- How do we build and represent a series circuit?
- What are the components in a series circuit?
- How does the number of cells and voltage affect components in a circuit?
- What are the effects and consequences of changing circuit components and batteries?

Animal including humans (circulatory system)

BIOLOGY

NC: 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

- What is blood made of and why do we need it?
- Why do our bodies need nutrients and how are they transported?

- Where are the kidneys and what do they do?
- How do kidneys keep us healthy?

Light

Physics

NC: 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

- How does light travel
- What colour is light made of?
- Reflection - how does light help us to see objects?
- Which surfaces make the best reflectors? Why do we see objects as a particular colour?
- What happens to the appearance of objects when placed in water?

give reasons for classifying plants and animals based on specific characteristics

- Who was the scientist Carl Linnaeus and what did he do?
- How do we classify vertebrates?
- How do we classify invertebrates we know?
- How do we classify invertebrates we don't know? (Sponges, Jellyfish and Flatworms) What are microorganisms?
- How do I classify plants?

Evolution and Inheritance

BIOLOGY

NC: recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents

identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

- How have living things changed over time? How do we know?
- How has life evolved over time?
- What is DNA and what does it do?
- Are all offspring identical to their parents? Darwin and Wallace – what evidence did they share to argue the case for evolution? Survival of the

- What is our circulatory system?
- What is our heart like inside? How does it work?
- Who influenced what we know about our circulatory system?
- What can we do to keep healthy?

fittest - how have animals adapted and evolved to suit their environment?

School Visits 2024/25

Rainbow fish (EYFS/Y1)	Blackpool Zoo	<u><i>The Natural World</i></u> <i>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.</i>
Seahorses (Y1/Y2)	Blackpool Zoo	<i>NC: explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including microhabitats. 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.</i>

Turtles (Y3)	Visit to Lowther Gardens (workshop with the Fylde Rangers)	<p>NC: identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</p> <p>investigate the way in which water is transported within plants</p> <p>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p>
Marlins (Y4)	Visit to Martin Mere for a Pond dipping workshop	<p>NC: recognise that living things can be grouped in a variety of ways</p> <p>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>recognise that environments can change and that this can sometimes pose dangers to living things</p>
Dolphins (Y5)	Planetarium session at Rossall School	<p>NC: describe the movement of the Earth and other planets relative to the sun in the solar system</p> <p>describe the movement of the moon relative to the Earth</p> <p>describe the sun, Earth and moon as approximately spherical bodies</p> <p>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p>

Sharks (Y6)

Conservation project with the Fylde Rangers

describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals
give reasons for classifying plants and animals based on specific characteristics

