Subject: Science

Programme of Study: Cycle B

Y1/2

EYFS
'Understanding the World':

- Children know about similarities and differences in relation to places, objects, materials and living things.
- They talk about the features of their own immediate environment and how environments might vary from one another.
- They make observations of animals and plants and explain why some things occur, and talk about changes

KS1 Programmes of Study
Working Scientifically:
During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions.

Key Stage 1: Year One

Plants:

- 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.

Animals including humans:

- 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.

Seasonal Changes:

- observe changes across the four seasons
- observe and describe weather associated with the seasons and how day length varies.

Everyday Materials:

- 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.

Key stage 1: Year Two

Plants:

- observe and describe how seeds and bulbs grow into mature plants
- find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Animals including humans:

- 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.

Living things and their habitats:

- 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.

Uses of everyday materials:

- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

SEASONAL CHANGE (Y1) ***[Y1 – Seasonal Changes]***	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Lesson 1 (x3 lessons- one each term)	• Observe changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies		• Observe changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies		• Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies	
Notes & Guidance	Pupils should observe and talk about changes in the weather and the seasons. **Note!** Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.					
"LET'S THINK LIKE SCIENTISTS" ***Use these questions to develop research skills and speaking and listening***	How do the leaves look different? Use all of your senses- what has changed? What has stayed the same? What is happening in our school grounds? When did you see the first shoots pushing through? Which bulbs that we planted are beginning to push through? Where are they? Which plants do we think they are? How are January and February the same as the other months? How are January and February different to the other months? Which season are we in? How are our school grounds the same and different? How has the temperature changed? Are January and February colder or warmer than September to December?					
Working Scientifically Skills	• Making tables and charts about the weather • Making displays of what happens in the world around them, including day length, as the seasons change Opportunities which enhance learning and support using ICT across the curriculum: • This unit provides an ideal opportunity for using data logging equipment to record temperatures					
Key Vocabulary	Autumn / Breezy / Changing / Chilly / Cloudy / Cool / Cooler / Darker / Fog / Fruits / Rainy / Warm / Windy					
Cultural Capital Opportunities CULTURAL CAPITAL	Utilise our forest school and use ideas to take photographs (for comparison later) and go on sense walk					

TOPIC 4: OUR LOCAL ENVIRONMENT (Y2) *[Y2 - Living things and their habitats]*	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Lesson 2: Sort it!	• explore and compare the differences between things that are living, dead, and things that have never been alive					
Lesson 3: Explore!	• explore and compare the differences between things that are living, dead, and things that have never been alive					
Lesson 4: Find a micro-habitat	• 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 • Different kinds of plants and animals live in different kinds of places. • There are different kinds of habitat near school which need to be cared for • Habitats provide the preferred conditions for the animals/plants that live there (compare local habitats and less familiar examples).					
Lesson 5: Food Chain Pairs	• 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					
Lesson 6: Extending the Food Chain	• 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					
Subject Knowledge (Rising Stars)	LIVING THINGS: Our environments are full of things that are living, dead and things that have never been alive. In order for something to be classified as alive, there are certain things that it needs to do. At Year 2 this must be communicated in simple terms, as it can be a difficult concept to grasp. Basically, living things are able to move, breathe, grow, reproduce (in humans, babies), get rid of waste (in humans, 'wee' and 'poo') and eat. They also need to be able to know when something changes, e.g. gets colder, warmer (sensitivity). These ideas are more difficult to understand with plants, because we cannot see them move, breathe, get rid of waste or make their own food. It is much easier for children to recognise these things in themselves, their pets and animals in the locality. FOOD CHAINS: Simple rules for food chains are: A food chain tells us who eats who. Food chains do this by using arrows. The arrows means 'is eaten by', so the plant is eaten by an animal, which is eaten by another animal.					
"LET'S THINK LIKE SCIENTISTS" ***Use these questions to develop research skills and speaking and listening***	LIVING THINGS: How could you prove to someone that you were alive? Is a snail alive or dead? How do you know? How do we know that dinosaurs were once alive? HABITATS What is your habitat like? If you could choose a different habitat to live in, where would you like to live? Why? Why do you think people should look after different habitats and not destroy them? FOOD CHAINS: Which animals do you know that eat other animals? Which animals do you know that only eat plants? What do you eat, -animals, plants or both? How could we identify seasonal and daily weather patterns to inform planting and growing? What are the key physical features around school grounds? Which areas do you think are suitable for growing plant?, e.g. steep, shady, damp, sunny. What is the school soil like? Can you identify where different plants come from? E.g. cacti etc.					
Working Scientifically Skills	• Ask simple questions and recognise that they can be answered in different ways • Observe closely, using simple equipment • Perform simple tests. Identify and classify • Use observations and ideas to suggest answers to questions • Gather and record data to help in answering questions • Sorting and classifying things as to whether they are living, dead or were never alive. • Recording their findings using charts • Describing how they decided where to place things, • Exploring questions such as: 'Is a flame alive? Is a deciduous tree dead in winter?' • Talking about ways of answering their questions. • Constructing a simple food chain that includes humans (e.g. grass, cow, human); • Describing the conditions in different habitats and micro-habitats (under log, on stony path, under bushes); • Finding out how the conditions affect the number and type(s) of plants and animals that live there.					
Key Vocabulary	live/ carnivore / dead/ food chain/ habitat/ herbivore/ micro-habitat/ never alive/ omnivore/ predator/ prey					
Cultural Capital Opportunities	Invite into class: -Local gardener to give a masterclass session on planting and caring for seeds and plants -Work with school cook to use school produce Visit: -Local park or botanic gardens Local greengrocer -A garden centre -An allotment to interview and get advice from people who grow flowers and vegetables.					

TOPIC 1: WHO AM I? (Y1) *[Y1 - Animals including humans]*	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Lesson 1: My Body Apron		• Identify, name, draw and label the basic parts of the human body Recognise that humans are animals. • Compare and describe differences in their own features (eye, hair, skin colour, etc.). • Recognise that humans have many similarities.				
Lesson 2: Smell Table		• say which part of the body is associated with each sense				
Lesson 3: What's the Taste?		• say which part of the body is associated with each sense				
Lesson 4: My Eyes		• say which part of the body is associated with each sense				
Lesson 5: Using my Hands		• say which part of the body is associated with each sense				
Lesson 6: Using Our Ears to Hear		• say which part of the body is associated with each sense				

Subject Knowledge (Rising Stars)	SIGHT: How the eye works is complex and, at this level, children need to know that in order to see objects we need light, so the opposite is true: without light (pure darkness) we cannot see things. At this stage, children may not have experienced complete darkness so think they can 'see' in the dark. Light is reflected off objects and travels in a straight line to the eye. The brain then makes sense of the signals sent from the eye to tell us what we can see.	TASTE: Humans have taste buds (children can see these using a digital microscope). When we eat, the food rubs against the taste buds which send messages to the brain to tell us what the taste is. There are five tastes: sweet, sour, bitter, salty and umami (savoury, e.g. fish, mushrooms, yeast). Most children can recognise sweet, sour and salty, but may find bitter a difficult taste to identify. Sight and smell also play an important part in taste. If we remove smell, the taste changes (try holding your nose as you eat a banana – what does it taste like?).	TOUCH: When we touch something, the nerves in our skin send messages to our brain which tells us whether something is hot or cold and what it feels like, such as sharp or sticky. We also sense pressure – something pushing against our skin.	HEARING: Sound is made when something moves or vibrates. Just as with light having a source, there are sources of sound. If you hit a drum, the part you hit (the skin) vibrates. This in turn vibrates (shakes) the air molecules next to the drum, which vibrates air molecules next to them until all the air molecules in your ear are vibrated. Inside the ear, tiny hairs then vibrate and messages are sent via nerves to the brain. As you move away from the source of the sound, it gets fainter because the sound has further to travel and as the vibration moves through the air, it doesn't only travel to your ear but in many other directions as well.	SMELL: We smell something because it gives off particles that travel to our noses; tiny hairs inside it send signals to the brain that tell us what the smell is. Our brain tells us whether we like it or not.

"LET'S THINK LIKE SCIENTISTS" ***Use these questions to develop research skills and speaking and listening***	Use the human graph as a starting point for discussion and other activities, e.g.: What could you use to measure Paul? Working in pairs, how could you measure each other? Do you think you are shorter or longer than one of Paul's legs? How could you find out? What do you think it would be like to be really tall? What would be the useful things about being tall? What kind of things would be hard? Would you like to be really tall? Why do you think that?	
Working Scientifically Skills	• Observe closely, using simple equipment. • Identify and classify. Gather and record data to help in answering questions.	• Compare and contrast animals (humans) at first hand or through videos and photographs. • Using their senses to compare different textures, sounds and smells
Key Vocabulary	backbone / chin / ears / elbow / eye socket / eyes / fingers / foot / feet / head / hear / hearing / hip / human / joints / knee / leg / neck / nose / ribs / see / senses / sight / smell / spine / taste / thigh / toes / tongue / touch /vertebrae / wrist	
Cultural Capital Opportunities CULTURAL CAPITAL	Invite into class: -Nurse to talk to children about, for example, keeping healthy and their job. -An optician and audiologist to talk about eyes and ears. -Sports person or trainer to talk about keeping parts of the body fit and healthy. Visit: -Museums with interactive exhibits on the human body and the senses. -An optician to see equipment and talk with staff	

HEALTHY ME (Y2) (Y2)Animals including humans	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Lesson 2: What Makes Me Happy?			• find out about and describe the basic needs of animals, including humans, for survival (water, food and air)			
Lesson 3: How does exercise help me?			• describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene			
Lesson 4: Why do we need food?			• describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene			
Lesson 5: Swapping Snacks			• describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene			
Lesson 6: Spraying germs			• describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene			
Key Knowledge	Children need to be helped to make healthy eating choices. We can do this by teaching children that eating too much sugar, fat and salt can affect out health. Children need a balanced diet, so that, when they get older they don't have problems with joints and hearts etc. Many foods have a lot of sugar in them, however it must be hard for children to understand how much sugar they can eat a day. You could show or give children sugar cubes, then show a snack such as a bowl of ice cream and sauce and put eight sugar cubes next to it, or eight teaspoons of sugar; and an apple, with no sugar cubes. Hands on and visual clues such as this will help children to understand how much sugar is in their food, and help them make decisions. One sugar cube = one teaspoon of sugar, = approximately four grams.					
"LET'S THINK LIKE SCIENTISTS" ***Use these questions to develop research skills and speaking and listening***	What makes me happy? How can I help myself to be safe and happy? How can I help my friends to be happy? How can keeping fit help me?					
Working Scientifically Skills	• Observe closely. • Perform simple tests. • To Identify and classify. • Use observations and ideas to suggest answers to questions. • Gather and record data in answering questions.					
Key Vocabulary	calm / calves / cough / exercise / feed / fitness / food / fruit / germs / happiness / health / healthy / hygiene /hygienic / muscle / needs / sneeze / stomach / thighs / vegetables					
Cultural Capital Opportunities CULTURAL CAPITAL	Invite into class -Nurse – this could be a parent or someone from the local surgery to talk to children about, e.g. keeping healthy, and their job. -Sports person or trainer to talk about keeping fit and healthy. -A chef or nutrition expert to talk about healthy food choices. Visit -Opticians to find out about eye and hearing tests. -Local sports and fitness centre to work with a trainer on new activities. -Local greengrocer or supermarket to look at and sample fruit and vegetables. -A pizza restaurant to make nutritious pizza. -Chemist to find out how to stop spreading germs					

TOPIC 4: PLANTS AND ANIMALS WHERE WE LIVE (Y1) (Y1) Plants	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Lesson 1: Which Plants and Animals live here?				• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals flowering plants, including trees		
Lesson 2: Adopt a tree				• 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		
Lesson 3: Leaves				• 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.		
Lesson 4: Birdwatching				• 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 omnivore.		
Lesson 5: Making Bird Feeders				• 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 omnivore.		
Lesson 6: Which group does the animal belong to?				• 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 omnivore.		
Key Knowledge	In this topic, children explore their local environment (school grounds or local park) to find out about the plants and animals that live in their locality. Many of the activities could also be carried out in a local botanic garden or arboretum, which has a section on local plants. Children will learn to name and identify common wild and garden plants, including trees, so they are familiar with common names and able to use these in Year 2 and beyond. This topic can also be linked to activities in the Seasonal changes section at the end of this book					
"LET'S THINK LIKE SCIENTISTS" ***Use these questions to develop research skills and speaking and listening***	Which birds and plants would Little Red Riding Hood find in our park? What might she grow in her own garden? How can we grow our own salad? Why are humans not like tigers? How will eating my 'five a day' help to keep me healthy?					
Working Scientifically Skills	• Ask simple questions and recognise that they can be answered in different ways. • Observe closely, using simple equipment. • Perform simple tests. • Identify and classify. • Use their observations and ideas to suggest answers to questions. • Gather and record data to help in answering questions.					
Key Vocabulary	Amphibians/animals / birds / fish/flowers/ habitat / identify / mammal / plants /reptile/ sort / tree / twigs/stem					

Cultural Capital Opportunities	Invite into class -Botanist or zoologist from a local university or STEM ambassador. -Representative from a wildlife or nature charity, e.g. RSPCA. -Someone from the local parks department. Visit -Local park. -Local arboretum or botanical gardens. -Local animal rescue

TOPIC 5: YOUNG GARDENERS (Y2) Plants	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Lesson 2: What is growing in our school grounds?					• identify and name a variety of plants and animals in their habitats, including microhabitats	
Lesson 3: What shall we grow?					• observe and describe how seeds and bulbs grow into mature plants	
Lesson 4: What do seeds need for germination?					• find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	
Lesson 5: What do plants need to grow?					• find out and describe how plants need water, light and a suitable temperature to grow and stay healthy • Observe and describe how seeds and bulbs grow into mature plants • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. • Plants are living and eventually die	
Lesson 6: Growing bulbs (pg.56) Using KS1 vegetable patch					• find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	
Key Knowledge	Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.					
"LET'S THINK LIKE SCIENTISTS" ***Use these questions to develop research skills and speaking and listening***	Can you name/identify these common plants? How do you know? Can you describe their leaves/petals? Do seeds need light to germinate? How do you know? What key things do plant needs to grow? How do seed grows? What happens from seed-grown plant?					
Working Scientifically Skills	• Ask simple questions and recognise that they can be answered in different ways. • Observe closely, using simple equipment. • Perform simple tests. • Identify and classify. • Use observations and ideas to suggest answers to questions. • Gather and record data to help in answering questions.					
Key Vocabulary	annual / compost / flower /fruit / germinate / germination / fruit / health / healthy / leaf / plant / root / seed / seedling / soil / stem / vegetable / properties / materials / bulb					
Cultural Capital Opportunities CULTURAL CAPITAL	Invite into class: -Local gardener to give a masterclass session on planting and caring for seeds and plants -Work with school cook or a chef to use school produce Visit: -Local park or botanic gardens Local greengrocer -A garden centre – children could be taught how to plant seeds etc. -An allotment to interview and get advice from people who grow flowers and vegetables					

TOPIC 3: HOLIDAY (Y1) (Y1 Everyday Materials)	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Lesson 1: Packing a case						• distinguish between an object and the material from which it is made • compare and group together a variety of everyday materials on the basis of their simple physical properties
Lesson 2: Sunglasses						• describe the simple physical properties of a variety of everyday materials
Lesson 3: Identify & Classify Seashore Animals						• identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
Lesson 4: Marine animal puppets						• describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)
Lesson 5: Classroom Rockpool						• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, and including pets).
Lesson 6: Messy Humans						• identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • distinguish between an object and the material from which it is made • 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.
Key Knowledge	In this topic, children will plan what they need to pack for a holiday, and explore the different animals they might encounter at the seaside and the human impact on the environment. You could begin by voting on where in the UK or the world children would like to visit on holiday and work with the most popular place, researching where it is, climate, food, etc. with children deciding what they would need to take.					
"LET'S THINK LIKE SCIENTISTS" ***Use these questions to develop research skills and speaking and listening***	Making lists for packing a case for holiday; or a list of favourite things we did on holiday. Holiday adventure … what happened next? Packing – how much will go into a case? Comparing weight – lighter / heavier than. Foreign coins – comparisons. How many legs? Crabs, lobsters, starfish – calculations.					
Working Scientifically Skills	• Ask simple questions and recognise that they can be answered in different ways. • Observe closely, using simple equipment. • Perform simple tests. • Identify and classify. • Use observations and ideas to suggest answers to questions. • Gather and record data to help in answering questions.					
Key Vocabulary	animals / banded wedge shell/ beach / cockle / fish / habitat / limpet / mussel / periwinkle shell / pollution/ protect/ razor clam / recycle / rock pool / rubbish / sand / sea / shell / shell crab /Sun / sunglasses / sunscreen / turtles					
Cultural Capital Opportunities CULTURAL CAPITAL	Invite into class: -Marine biologist. -Geologist to discuss the different rocks found on beaches. -Photographer to talk about how to take interesting holiday photographs.					

	-Parent or someone from the local community who is a pilot, train driver, etc. Visit: -A train station or railway museum: look at trains, how do they work, size of wheels, how they have changed. -An airport: look at systems, e.g. conveyor belts, IT systems, e.g. check-in, safety around the airport, where do planes get their fuel, ear defenders for people taxiing planes. -Marine centres. -Beach with a marine biologist. Lighthouse

Full Critical Skills and Knowledge Coverage

Please note all of these are covered and revisited/consolidated in each of the units taught **over the year.**

YEAR 1/2

(National Curriculum Statutory Requirements)

BIOLOGY					CHEMISTRY		PHYSICS
Plants		**Animals, including humans**		**Living things and their habitats**	**Everyday materials (incl. uses of)**		**Seasonal changes**
Year 1	**Year 2**	**Year 1**	**Year 2**	**Year 2**	**Year 1**	**Year 2**	**Year 1**
Pupils should be taught to: ▪ 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. **Pupils might work scientifically by:** ▪ Observing closely, perhaps using magnifying glasses. ▪ Comparing and contrasting familiar plants. ▪ Describing how they were able to identify and group them, and ▪ Drawing diagrams showing the parts of different plants including trees. ▪ Keeping records of how plants have changed over time, for example the leaves falling off trees and buds opening. ▪ Comparing and contrasting what they have found out about different plants.	**Pupils should be taught to:** ▪ Observe and describe how seeds and bulbs grow into mature plants **A.F. – describe the main changes as seeds and bulbs grow into mature plants** ▪ Observe and describe how seeds and bulbs grow into mature plants **A.F. describe basic needs of plants for survival and the impact of changing these** ▪ Observe and describe how seeds and bulbs grow into mature plants ▪ Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. ▪ Plants are living and eventually die **Pupils might work scientifically by:** ▪ Observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or ▪ Observing similar plants at different stages of growth; ▪ Setting up a comparative test to show that plants need light and water to stay healthy.	**Pupils should be taught to:** (Plants) ▪ Observe and describe how seeds and bulbs grow into mature plants **A.F. describe and compare the observable features of animals from a range of groups** ▪ observe and describe how seeds and bulbs grow into mature plants **A.F. name and locate parts of the human body, including those related to the senses** (Animals/ Humans) ▪ Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. ▪ Recognise that humans are animals. ▪ Compare and describe differences in their own features (eye, hair, skin colour, etc.). ▪ Recognise that humans have many similarities. **Pupils might work scientifically by:** ▪ Using their observations to compare and contrast animals (humans) at first hand or through videos and photographs. ▪ Using their senses to compare different textures, sounds and smells.	**Pupils should be taught to:** ▪ Observe and describe how seeds and bulbs grow into mature plants THIS OBJECTIVE IS COVERED WITHIN THE PSHE TOPICS IN CYCLE B TERM 6 **A.F. – describe the main changes as young animals, including humans, grow into adults** ▪ observe and describe how seeds and bulbs grow into mature plants **A.F. describe the basic needs of animals for survival** ▪ observe and describe how seeds and bulbs grow into mature plants **A.F. describe the importance of exercise, balanced diet and hygiene for humans** Pupils should be taught to: ▪ Notice that animals, have offspring which grow into adults. ▪ Find out about and describe the basic needs of animals, for survival (water, food and air). **Pupils might work scientifically by:** ▪ Observing, through video or firsthand observation and measurement, how different animals grow; Asking questions about what things animals need for survival suggesting ways to find answers to their questions.	**Pupils should be taught to:** ▪ Observe and describe how seeds and bulbs grow into mature plants **A.F. identify whether things are alive, dead or have never lived.** ▪ observe and describe how seeds and bulbs grow into mature plants ▪ observe and describe how seeds and bulbs grow into mature plants **A.F. name different plants and animals and describe how they are suited to different habitats** ▪ observe and describe how seeds and bulbs grow into mature plants **A.F. describe how animals get their food from other animals and/or from plants, and use simple food chains to describe these relationships** Pupils should be taught to: ▪ 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	**Pupils should be taught to:** ▪ Observe and describe how seeds and bulbs grow into mature plants **A.F. use their knowledge and understanding of the properties of materials, to distinguish objects from materials** ▪ observe and describe how seeds and bulbs grow into mature plants **A.F. identify materials** ▪ observe and describe how seeds and bulbs grow into mature plants ▪ observe and describe how seeds and bulbs grow into mature plants Pupils should be taught to: ▪ 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. **Pupils might work scientifically by:**	**Pupils should be taught to:** ▪ Observe and describe how seeds and bulbs grow into mature plants **A.F. compare the suitability of materials for different uses.** ▪ observe and describe how seeds and bulbs grow into mature plants Pupils should be taught to: ▪ Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses ▪ Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching ▪ Some materials can be found naturally; others have to be made **Pupils might work scientifically by:** ▪ Comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); ▪ Observing closely, ▪ Identifying and classifying the uses of different materials, and ▪ Recording their observations.	**Pupils should be taught to:** ▪ Observe and describe how seeds and bulbs grow into mature plants ▪ observe and describe how seeds and bulbs grow into mature plants **A.F. describe seasonal changes** Pupils should be taught to: ▪ Observe changes across the four seasons. ▪ Observe and describe weather associated with the seasons and how day length varies. **Pupils might work scientifically by:** ▪ Making tables and charts about the weather and ▪ Making displays of what happens in the world around them, including day length, as the seasons change. Additional suggestion from Lancashire for working scientifically opportunities which enhance learning and support using ICT across the curriculum This unit provides an ideal opportunity for using data logging equipment to record temperatures

		(Animals, other animals) ▪ 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, and including pets). ▪ Find out and describe how animals look different to one another. ▪ Group together animals according to their different features. ▪ Recognise similarities between animals: ▪ Structure: head, body, way of moving, senses, body covering, tail. ▪ Animals have senses to explore the world around them and to help them to survive. ▪ Recognise that animals need to be treated with care and sensitivity to keep them alive and healthy. ▪ Animals are alive; they move, feed, grow, use their senses and reproduce. **Pupils might work scientifically by:** ▪ Using their observations to compare and contrast animals (humans) at first hand or through videos and photographs. ▪ Describing how they identify and group them. ▪ Grouping animals according to what they	Pupils should be taught to: ▪ Notice that humans, have offspring which grow into adults. ▪ Find out about and describe the basic needs of 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. ▪ Medicines can be useful when we are ill. ▪ Medicines can be harmful if not used properly. **Pupils might work scientifically by:** ▪ Observing, through video or firsthand observation and measurement, how humans grow. ▪ Recording their findings using charts. ▪ Asking questions about what things animals [humans]. need for survival and what humans need to stay healthy. Suggesting ways to find answers to their questions.	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. ▪ Different kinds of plants and animals live in different kinds of places. ▪ There are different kinds of habitat near school which need to be cared for ▪ Habitats provide the preferred conditions for the animals/plants that live there (compare local habitats and less familiar examples). **Pupils might work scientifically by:** ▪ Sorting and classifying things as to whether they are living, dead or were never alive. ▪ Recording their findings using charts ▪ Describing how they decided where to place things, ▪ Exploring questions such as: 'Is a flame alive? Is a deciduous tree dead in winter?' ▪ Talking about ways of answering their questions. ▪ Constructing a simple food chain that includes humans (e.g. grass, cow, human); ▪ Describing the conditions in different habitats and microhabitats (under log, on stony path, under bushes); ▪ Finding out how the conditions affect the number and type(s) of plants and animals that live there. Working scientifically skills:	▪ performing simple tests to explore questions, for example: – 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'	Thinking about unusual and creative uses for everyday materials.	

		eat. ▪ Using their senses.		This topic develops the following working scientifically skills: Ask simple questions and recognise that they can be answered in different ways. Observe closely, using simple equipment. Perform simple tests. Identify and classify. Use observations and ideas to suggest answers to questions. Gather and record data to help in answering questions.			

Keep Y1 and Y2 separate – record on separate sheets

Assessment – Cycle B – Y1/2 AUTUMN TERM 1 (first half term) Seasonal Change & Our Local Environment (Y2)							
NC POS **SEASONAL CHANGE (Y1)** **Lesson 1: September** • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies *Note these skills are assessed at three points in the year (Autumn/Spring/Summer)	**Children's initials**	**TOPIC 4: OUR LOCAL ENVIRONMENT (Y2) Living Things** • explore and compare the differences between things that are living, dead, and things that have never been alive	**Children's initials**	**TOPIC 4: OUR LOCAL ENVIRONMENT (Y2) Habitats** • 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	**Children's initials**	**TOPIC 4: OUR LOCAL ENVIRONMENT (Y2) Food Chains** • 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	**Children's initials**
All children can (Em) • Children can make simple observations about the weather/clothing worn/animals seen		**All children Can (Em)** • Children need support with the idea of things that have never been alive. • Children need support with the idea of things that have never been alive. • Children need support with sorting objects into different categories. • Children need support with applying their ideas in the context of outdoors..		**All children Can (Em)** • Children understand that a house is where they live but are unable to relate this to the word habitat. • Children recognise where plants and animals live. • Children make a habitat for animals, they require support to link the habitat to basic needs of animals.		**All children Can (Em)** • Em. Children need support from others to find the other parts of their food chain. • Children are able to make a food chain with 2 or 3 animals and plants with help.	
Most children can (ex) • Children can link the seasons to the length of the day • Children can record their observations using graphs and diagrams		**Most children Can (ex)** • Children can sort into groups of alive, dead and never been alive to a given group. • Children can say why the battery operated dog has never been alive • Children can say why objects are living, dead or never been alive. • Children can apply their understanding in the context of outdoors.		**Most children Can (ex)** • Children know that a habitat is where plants and animals live because it provides for basic needs. • Children can identify micro-habitats and know that plants and animals live there. • Children make a habitat and include some plants and can say how the habitat meets the needs of those living things.		**Most children Can (ex)** • Children are able to complete their paired food chain. • Children are able to complete their food chain (3 or more elements) independently	
Some children can (Exc) • Children can use varied vocabulary to discuss the seasons • Children can make their own suggestions for how to record findings and make comparisons		**Some children can (Exc)** • Children apply their understanding to a wide range of things. • Children apply their understanding to a wide range of things. • Children apply their understanding to a wide range of things inside and outside the classroom		**Some children can (Exc)** • Children apply the idea of habitat and micro-habitat locally and globally e.g. desert, rainforest. • Children know that microhabitats provide food, shelter etc. that things need to live there. • Children talk about terms of how the plants and animals are suited to the habitat and know what might happen to the plants and animals if something		**Some children can (Exc)** • Children apply what they know by suggesting linking other food chains to their own. • Children apply what they know by suggesting extending their food chain. • Children research food chains	

		• Children apply their understanding and are able to justify through discussion their choices, using scientific language		changed.			
Assessment notes / evaluation – include SEN / PP next step learning and areas that need more focus		**Assessment notes / evaluation – include SEN / PP**					

	Working below expectations	Working within Expected Standard	Working above expected
Target	**14 – 20%** **(no more than 2 children)**	**80 %- 86%**	**20%**
Term 1			
Term 2			
Term 3			

Assessment – Cycle B – Y1/2 AUTUMN TERM 2 (2nd half term) Who am I? (Y1)			
NC POS **TOPIC 1: WHO AM I? (Y1)** **My Body** **(Y1)** • identify, name, draw and label the basic parts of the human body	**Children's initials**	**TOPIC 1: WHO AM I? (Y1)** **My Senses** • and say which part of the body is associated with each sense	**Children's initials**
All children can (Em) • With support, children identify and match pictures. • With support, children talk about the different parts of the body • With support, be able to name basic body parts, e.g. arm, leg. • With support, be able to use labels to record basic parts of the body. • When prompted with questions, children describe the smells and which part of the body they are using. • With support to focus on using their sense of smell, children make observations.		**All children Can (Em)** • Children begin to link the idea of taste as one of the five senses and that we taste using our mouths. • Children describe what they taste. • Children know they are using their hands to feel things and describe textures. • With support, children can point to and name their ears. • Children describe their observations.	
Most children can (ex) • Children identify and match pictures independently. • Children know that they see with their eyes and the sense is sight. • Children can name basic parts of the body. • Be able to name a wide range of parts of the body, e.g. ankle, wrist. • Be able to use, e.g. a word mat, to find correct words to label parts of the body. • Children use descriptive language to describe the smells and can say that they use their nose to smell. • Children are able to make observations using their sense of smell.		**Most children Can (ex)** • Children can say that taste is one of the five senses and know we taste with our mouth • Children identify the taste, e.g. type of food. • Children know they are using their hands and this is their sense of touch. They can use scientific vocabulary to describe textures. • Children use their observations to answer questions about the sounds they hear. • Children point to and name the ear and say that they can hear with it.	
Some children can (Exc) • Children are able to explain reasons for their choices. • Children name different parts of the eye. • Children name different parts of the human skeleton and compare similarities and differences with other animal skeletons. • Be able to give some more scientific names for parts of the body, e.g. spine, skull, ribs. • Be able to label using more scientific language for parts of the body. • Children are able to make comparisons between their observations. • Children compare different smells, independently order them from worst to most pleasant, bring things from the school grounds or home to add to the collection and explain that smell is one of the five senses.		**Some children can (Exc)** • Children go beyond by talking about different kinds of taste, e.g. sweet, sour, bitter. • Children identify the taste, e.g. sweet, sour, bitter. • Children know that the sense of touch is one of the five senses and can use scientific vocabulary to describe textures. • Children confidently talk about what they can hear with their ears and how to look after them. Exc. Children use scientific language when answering questions about sounds they hear, e.g. sense, hearing, ears, high, low.	

Assessment notes / evaluation – include SEN / PP next step learning and areas that need more focus	**Assessment notes / evaluation – include SEN / PP**

	Working below expectations	Working within Expected Standard	Working above expected
Target	**14 – 20%** **(no more than 2 children)**	**80 %- 86%**	**20%**
Term 1			
Term 2			
Term 3			

Assessment – Cycle B – Y1/2 Spring Term 1 (1st half term) Seasonal Change (see above) and Healthy Me (Y2)			
NC POS **HEALTHY ME (Y2) (links to PSHE)** • find out about and describe the basic needs of animals, including humans, for survival (water, food and air)	**Children's initials**	**HEALTHY ME (Y2) (links to PSHE)** • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	**Children's initials**
All children can (Em) • Children can describe what makes them **healthy**.		**All children Can (Em)** **Subject Knowledge:** • Children begin to link exercise with different parts of the body. • Children know that they need food to stay alive. • With support children can say why a fruit kebab is a healthy snack. **Working Scientifically:** • Children are supported in observing and recording changes in their body during exercise. • Children require support to read a graph and talk about the data.	
Most children can (ex) • Children know that being **heathy** is important to how they feel.		**Most children Can (ex)** **Subject Knowledge:** • Children can say how different activities help parts of the body • Children say why fruit kebabs are a healthy snack. • Children can say that they need food to live, grow, be active and stay healthy. **Working Scientifically:** • Children record observations. • Children read a bar graph and answer questions using the data.	
Some children can (Exc) • Children know that they need water, food etc. and that being **healthy** is also important to being well.		**Some children can (Exc)** **Subject Knowledge:** • Children can say how the activities affect the body. • Children link the importance of choosing healthy food to live, grow, be active and stay healthy • Children can compare the effect of fruit kebab and 'other snacks' on their health. **Working Scientifically:** • Children use data to make links between exercise and changes in their body. • Children make draw conclusions using the data.	
Assessment notes / evaluation – include SEN / PP next step learning and areas that need more focus			

	Working below expectations	Working within Expected Standard	Working above expected
Target	**14 – 20%** **(no more than 2 children)**	**80 %- 86%**	**20%**
Term 1			
Term 2			
Term 3			

Assessment – Cycle B – Y1/2 Spring Term 2 (2nd half term) Plants and Animals where we live (Y1)			
NC POS **PLANTS AND ANIMALS WHERE WE LIVE (Y1)** Our Local Area: • 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.	**Children's initials**	**PLANTS AND ANIMALS WHERE WE LIVE (Y1)** Birds & Animals: • 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 omnivore.	**Children's initials**
All children can (Em) **Subject knowledge:** • Children require support to find and observe different plants. • Children are supported, e.g. by choice cards to name a tree, parts of a tree. • Children are supported to name the tree the leaf comes from. **Working Scientifically** • Children are supported to identify a narrow range of plants and animals. Children require support to make observations about the tree and talk about them. • Children require support in asking questions about their leaf collection.		**All children Can (Em)** **Subject knowledge:** • Children need help to say what a bird is, e.g. beak, feathers. • Children need help to identify different birds **Working Scientifically** • Children require help to use identification sheets and record birds they see. • Children require help to use identification sheets and record birds they see. • Children require support to carry out this activity. .	
Most children can (ex) **Subject knowledge:** • Children identify plants, including trees. • Children name the tree, its parts and know whether it is deciduous or coniferous. • Children use the 'Tree spotter' sheet to identify the name of the tree that the leaf came from and decide whether it is deciduous or coniferous. **Working Scientifically** • Children use hand lenses and use observations to identify plants and animals and answer questions. • Children are able to make and record a range of observations about the tree • Children use their 'Question wristbands' to ask questions and use observations to answer them.		**Most children Can (ex)** **Subject knowledge:** • Children describe features of birds. • Children describe features of birds that help them use the bird feeder they have made. **Working Scientifically** • Children identify birds and record observations using a tally chart • Children identify birds and record observations using a tally chart. • Children ask questions, to identify animals and use a tally charts to record findings	
Some children can (Exc) **Subject knowledge:** • Children name some plants, including trees. • Children know the name of the tree and its parts and whether it is deciduous or coniferous and can compare it to other trees in the area. • Children name the tree the leaf came from without using the Tree spotter sheet. **Working Scientifically** • Children apply knowledge from observations to identify living things and answer their own questions. • Exc. Children use their observations to ask new questions and suggest answers to them. • Children independently ask questions and use observations to answer them.		**Some children can (Exc)** **Subject knowledge:** • Children describe features of birds and can compare to other animals. • Children describe and compare the features of different birds and can suggest ways that they could feed other birds, e.g. different sizes and beaks. **Working Scientifically** • Children make their own tally charts to use at home or at play times • Children make their own tally charts to use at home or at play times. • Children ask questions, identify animals, and ask and answer their own new questions.	
Assessment notes / evaluation – include SEN / PP next step learning and areas that need more focus			

	Working below expectations	Working within Expected Standard	Working above expected
Target	**14 – 20%** **(no more than 2 children)**	**80 %- 86%**	**20%**
Term 1			
Term 2			
Term 3			

Assessment – Cycle B – Y1/2 Summer Term 1 (1st half term) Seasonal Change (see above) and Young Gardner's (Y2)			
TOPIC 5: YOUNG GARDENERS (Y2) • identify and name a variety of plants and animals in their habitats, including microhabitats • observe and describe how seeds and bulbs grow into mature plants	**Children's initials**	**TOPIC 5: YOUNG GARDENERS (Y2)** • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	**Children's initials**
All children Can (Em) **Subject knowledge:** • Children require support to name plants • Children are able to plant their seeds with help. • Children recognise that each seed has germinated, they require support in recognising that the seeds are a sequence of growth. **Working Scientifically** • Children require support to identify plants and flowers • Children require support e.g. question stems to ask their own questions. • Children are supported to grow and observe seeds		**All children Can (Em)** **Subject knowledge:** • Children can describe each plant, they require support to link cause and effect. • Children can observe and describe a bulbs grow into a plant. **Working Scientifically** • Children require support to carry out their test, and make observations. • Children are supported in observing and recording bulb growth.	
Most children Can (ex) **Subject knowledge:** • Children name common plants in the school grounds • Children follow instructions to plant their seeds and know what they have to do to help them grow into mature plants. • Children are able to describe how the seed grows and use scientific language. **Working Scientifically** • Children name common plants and flowers using identification resources • Children ask questions about the seeds they are growing • Children plan, carry out their test and use standard measures to record growth.		**Most children Can (ex)** **Subject knowledge:** • Children are able to describe that plants need water, light and right temperature to grow. • Children describe how bulbs grow into mature plants using examples e.g. hyacinth bulb **Working Scientifically** • Children plan, carry out their test and use standard measures to record growth and use data to draw a conclusion. • Children observe, record and talk about how bulbs grow.	
Some children can (Exc) **Subject knowledge:** • Children name common plants and choose to use ID sheet or book to identify less well known. • Children apply existing and new subject knowledge on growing plants to make decisions about how they grow their own plants. • Children predict what the next set of plants will look like in the sequence. **Working Scientifically** • Children choose to observe plants in detail and apply existing personal knowledge of plants and flowers. • Children ask questions for the working wall on a range of plants. • Children use their results to draw simple conclusions.		**Some children can (Exc)** **Subject knowledge:** • Children apply their understanding to plan and carry out new activities e.g. putting plants in a freezer, using translucent containers. • Children apply their knowledge of how to grow a seed into a healthy plant to bulbs. **Working Scientifically** • Children use their knowledge about plant growth to explain the data • Children describe the similarities and differences between observations of seeds growing and bulbs	
Assessment notes / evaluation – include SEN / PP next step learning and areas that need more focus			

	Working below expectations	Working within Expected Standard	Working above expected
Target	**14 – 20%** **(no more than 2 children)**	**80 %- 86%**	**20%**
Term 1			
Term 2			
Term 3			

Assessment – Cycle B – Y1/2 Summer Term 2 (2nd half term) Holidays (Y1)			
NC POS **TOPIC 3: HOLIDAY (Y1)** **Materials** • distinguish between an object and the material from which it is made • compare and group together a variety of everyday materials on the basis of their simple physical properties • describe the simple physical properties of a variety of everyday materials • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	**Children's initials**	**TOPIC 3: HOLIDAY (Y1)** **Materials** **By the Seaside** • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)	**Children's initials**
All children Can (Em) **Subject knowledge:** • Children name items but they require support to talk about properties of materials. • Children identify objects. • Children can describe how they made their sunglasses and if things looked lighter or darker with them on. **Working Scientifically** • Children carry out a supported comparative test and describe what they did and what happened.		**All children Can (Em)** **Subject knowledge:** • With support, children can name animals • Children can say which animal they have and talk about its main features, e.g. beak, fur, legs. • With support, children can name animals. **Working Scientifically** • Children need support to move from sorting the object to sorting the object according to the material it is made from	
Most children Can (ex) **Subject knowledge:** • Children group items linked to properties such as waterproof • Children identify objects and classify according to their properties • Children name which materials they used for their sunglasses and how they changed what they saw. **Working Scientifically** • Children carry out a simple test and use observations to say what happened.		**Most children Can (ex)** **Subject knowledge:** • Children use pictures to identify different animals • Children can talk about the animal (or let the animal 'talk' to say what it is, where it lives, etc.). • Children name animals according to their structure. **Working Scientifically** • Children can identify and sort according to the material objects are made from.	
Some children can (Exc) **Subject knowledge:** • children can explain items are made from a particular material, e.g. flip flops are plastic which is waterproof. Working Scientifically • Children identify objects according to their properties. • Children make links to the properties of the material and their use in sunglasses. **Working Scientifically** • Children use test results to make links between their observations and to ask new questions.		**Some children can (Exc)** **Subject knowledge:** • Children identify different animals using similarities and differences in their structure. • Children carry out extensive research at home and at school and share a wide range of information using scientific vocabulary • Children make comparisons between the structure of different animals and apply this to identifying them. **Working Scientifically** • Children use properties to identify and classify materials and suggest why those properties might harm animals.	
Assessment notes / evaluation – include SEN / PP next step learning and areas that need more focus			

	Working below expectations	Working within Expected Standard	Working above expected
Target	**14 – 20%** **(no more than 2 children)**	**80 %- 86%**	**20%**
Term 1			
Term 2			
Term 3			