Science at Broomhill First School

National Curriculum Expectations

Purpose of Study - A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

Key Stage 1 Y1/2

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

Y1 Plants - 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

Y3/4

Working scientifically - During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.

Y1 Animals, including humans - Pupils should be taught 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 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

Y1 Everyday materials - 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

Y1 Seasonal changes - Pupils should be taught to:

- observe changes across the 4 seasons
- observe and describe weather associated with the seasons and how day length varies

Y2 Living things and their habitats - 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 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

Y3 Plants - Pupils should be taught to:

- 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 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

Y3 Animals, including humans - Pupils should be taught to:

- 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

Y3 Rocks - Pupils should be taught to:

- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- 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

Y3 - Light - Pupils should be taught to:

- recognise that they need light in order 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

Y3 - Forces and magnets

- compare how things move on different surfaces
- notice that some forces need contact between 2 objects, but magnetic forces can act at a distance

Y2 Animals, including humans - Pupils should be taught to:

- 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

Y2 Uses of everyday materials - 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

- 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

Y4 Living things and their habitats - Pupils should be taught to:

- 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

Y4 Animals, including humans - Pupils should be taught to:

- 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

Y4 States of matter - Pupils should be taught to:

- 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

Y4 Sound - Pupils should be taught to:

- 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

	Y4 Electricity - Pupils should be taught to: ● identify common appliances that run on electricity ● construct a simple series electrical circuit, identifying and naming its basic parts, 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

Long term plan Cycle 1

	Autumn Term		Spring Term		Summer Term	
EYFS	*Changes and Growing* • Discuss simple changes as they have grown from being a baby.	*Woodland and Nature* • Explore the natural world • Begin to observe and talk about living things in the local environment. • Describe what they see, hear, feel whilst outside • Understand the changing seasons on the natural world around them (Autumn) • Describe simply how weather changes as the seasons change. • Care for growing seeds and plants and describe observable features of different types of plants and trees. • Name and describe basic features of plants and trees.	*Space, Nature* • Explore the natural world around them (Sun, Moon, Stars. Beginning to learn about space) • Ask or answer a simple scientific question. • Ask a relevant scientific question to find out more, explain how things work and why they might happen. • Begin to talk about and name the body parts of common animals. • Identify common features for different groups of animals, including wild and domestic animals – Nocturnal animals. • Understand that shadows are made when a solid object blocks a source of light	*Materials* • Explore and test materials to build houses for the 3 little pigs. • Understand the changing seasons on the natural world around them (Spring)	*Animals and Habitats* • Explore the natural world around them, making observations and drawing pictures of animals and plants. • Identify common features for different groups of animals, including wild and domestic animals. • Learn about habitats (natural home or environment of a living thing). • Name and sort everyday items into groups of the same material.	*Changes and Growing* *Lifecycles* • Observe and describe living things and their habitats within the local environment. • Notice and begin to describe patterns of weather in summer and winter. • Describe simply how weather changes as the seasons change. • Begin to name and group plants and trees according to their observable features. • Use a magnifying glass to make close observations. • Explore the natural world around them and give simple descriptions, following observation, of changes. • Learn about the lifecycle of a caterpillar/butterfly. • Care for growing seeds and plants. • Describe some ways that plants or animals should be cared for in order for them to survive. • Name and describe basic features of plants and trees. • Represent scientific observations by mark making, drawing or creating simple charts and tables (Coloured flowers investigation). • Offer explanations for why things happen, making use of vocabulary, such as, because, then and next.

Year 1/2	Animals, including 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. (PSHE link) • 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)	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. • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	Space • Understand that we live on a planet that orbits around the sun • Know that the sun is a star • Know that Earth has one moon, which orbits the it • Know that Earth belongs in the Solar System • Name the 8 planets in the Solar System • The key characteristics of the planets • Understand that the sun is a star and that life on Earth depends on its energy • Understand that the planets can be catergorised, e.g. gas giants. • Explore ways in which humans have left Earth (e.g. unmanned satellites, Space Station, travel to the moon, future missions to Mars) Light and dark (linked to the sun, moon and Earth) • Observe the apparent movement of the sun during the day • Observe light coming from a light source. Observe light being blocked by an object to create a shadow (links to RE shadow puppets and Chinese New Year). • Investigate how to make	Plants • Identify and describe the basic structure of a variety of common flowering plants, including trees • 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. *Designing Experiments* • Suggest what might happen • Suggest an idea to test from observations • Follow demo, spoken & picture instructions *Analysis and Evaluation* • Describe simple patterns in data, charts • Describe changes that have happened • Suggest a different way to do things	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 and name a variety of plants and animals in their habitats, including microhabitats	

			a place lighter and darker. • Know light and dark safety.			
Year 3/4	Animals, including humans • 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 animals have skeletons and muscles for support, protection and movement.	Electricity • Identify common appliances that run on electricity • Construct a simple series electrical circuit, identifying and naming its basic parts, 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	Sound History Link: Greek Amphitheatres • 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	Living Things and their Habitats • 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.	States of Matter • 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 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	Plants • Identify & describe the functions of different parts of flowering plants: roots, stem, leaves and flowers • Explore the requirements for plant life and 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 role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal

Long term plan Cycle 2

	Autumn Term		Spring Term		Summer Term	
EYFS	*Changes and Growing* • Recognise and discuss how they	*Machines and electricity*	*Dinosaurs* • Ask a relevant scientific question to find out more,	*Magnetism* • Identify that materials have different properties and	*Changes and Growing* *Plants and Animals*	*Seaside Environments* • Explore the natural world around them (seaside)

	have changed from when they were babies.	• Ask or answer a simple scientific question. • Explore how things work. • Recognise a machine as a man-made device. • Identify parts of a machine (e.g. a car). • Identify products that use electricity to make them work. • Play with and explore battery-powered toys and models. • Explore and describe electrical and non-electrical light sources.	explain how things work and why they might happen. • Know some facts about dinosaurs. • Make a shadow bigger or smaller using toys, play equipment and a light source – dinosaur silhouettes. • Explore the natural world around them • Begin to understand the concepts of freezing and melting. • Observe a volcano experiment. • Represent scientific observations by mark making, drawing or creating simple charts and tables.	explore and sort magnetic and non-magnetic materials through play and exploration. • Understand the changing seasons on the natural world around them (Spring)	• Understand some important processes and changes in the natural world (growing plants). • Describe observable features of different types of plants and trees. • Describe some ways that plants or animals should be cared for in order for them to survive. • With support, observe, record and talk about materials and living things. • Explore the natural world around them (farming) • Observe and describe living things and their habitats within the local environment (farms).	• Describe what they see, hear and feel whilst outside. • Learn about sea creatures • Learn about seabirds (link to KS2 class name) • Make observations about animals. • Be familiar with basic scientific concepts such as floating, sinking, experimentation • Make predictions
Year 1/2	Animals, including Humans *What do living things need to survive?* • 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	Everyday Materials *How do we choose materials?* • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical	Animals, including Humans *Are all animals the same?* • 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)	Living Things and their Habitats *What is alive, dead or was never alive?* • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • Explore and compare the differences between things that are living, dead, and things that have never been alive • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and	Plants *Are all plants the same?* • 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. • identify and name a variety of plants and animals in their habitats, including microhabitats	Living Things and their Habitats *Across the world, are all habitats the same?* • 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

	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 (link to history)	properties of a variety 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.	• explore and compare the differences between things that are living, dead, and things that have never been alive	identify and name different sources of food.		plants, including trees • 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 micro-habitats
Year 3/4	Light • Recognise that they need light in order 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	Animals including Humans • 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.	Living Things and their Habitats • 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	Rocks • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • Describe in simple terms how fossils are formed when things that have lived are trapped within rock.	Forces and Magnets • Compare how things move on different surfaces • Notice that some forces need contact between two objects and some forces 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	Plants • Identify & describe the functions of different parts of flowering plants: roots, stem, leaves and flowers • Explore the requirements for plant life and growth (air, light, water, nutrients from soil, and room to

	there are ways to protect their eyes. • Recognise that shadows are formed when the light from a light source is blocked by a solid object. • Find patterns in the way that the size of shadows change	• Construct and interpret a variety of food chains, identifying producers, predators and prey	sometimes pose dangers to living things.	• Recognise that soils are made from rocks and organic matter.	everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing	grow) and how they vary from plant to plant • Investigate the way in which water is transported within plants • Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal

Year	Topic/Learning	Knowledge/Skills taught	Links in learning/Assessment Tasks
Year 1/2	**Animals, including Humans**	I can notice that animals, including humans, have offspring which grow into adults I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air). I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Assessment Tasks** Eat Well Plate - Complete in D and T Exercise Quiz Life cycle of animals **Insight Assessments** • **Understand the need for a range of food and the importance of hygiene and exercise** • **Describe the life cycle of an animal** • **Know the basic needs of animals included humans** **I know how to ask simple questions**
	Everyday Materials	I can 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. I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**Assessment Tasks** Materials Quiz **Insight Assessments** • **Identify, name and describe materials** • **Know why a material might be used for a specific job** • **I know how to carry out simple tests** • **I know how to use simple data to answer questions**

Space Light and Dark	I know that we live on Earth and that the Earth orbits around the sun I know that the sun is a star I know that the Earth has a moon that orbits it I know that the Earth is part of the Solar System I can name the 8 planets in our solar system and can give characteristics of them I can talk about how humans have left Earth to explore Space Light and Dark I can explain what happens to the sun each day I can create an object to block the sun and create a shadow I know how to make a place lighter and darker I can talk about how to keep safe when it is dark.	**Assessment Task** Name the planets Create an object to block the sun **Insight Assessment** • **Identify and name planets** • **I know how to carry out simple tests**
Plants (Y1)	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. I can begin to compare some living things.	**Assessment Tasks** Naming plants Parts of Plants Parts of a tree **Insight Assessments** • **Name the parts of a plant and tree** • **Name a variety of plants (common, wild and garden plants)** • **I know how to use simple equipment to make observations**
Classifying Animals/Life cycles (Y1)	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. I can begin to compare some living things.	**Assessment Tasks** Label the basic parts of the human body Classifying animals Living and non-living **Insight Assessments** • **Classify animals by their group and what they eat** • **Sort animals by living and non-living** • **I know how to identify and classify things**

	Cycle 2 **Y1/2 Animals, including Humans Y2**	I can notice that animals, including humans, have offspring which grow into adults I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air). I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Assessment Tasks** Eat Well Plate - Complete in D and T Exercise Quiz Life cycle of animals **Insight Assessments** • **Understand the need for a range of food and the importance of hygiene and exercise** • **Describe the life cycle of an animal** • **Know the basic needs of animals included humans** **I know how to ask simple questions**
	Everyday Materials (Y1)	I can distinguish between an object and the material from which it is made I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock I can describe the simple physical properties of a variety of everyday materials I can compare and group together a variety of everyday materials on the basis of their simple physical properties.	**Assessment Tasks** Naming Materials Describing Materials **Insight Assessments** • **Identify, name and describe materials** • **Know what material an object is made from** • **I know how to identify and classify things**
	Y2 Animals, including humans	I can notice that animals, including humans, have offspring which grow into adults I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air). I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Assessment Tasks** Eat Well Plate - Complete in D and T Exercise Quiz Life cycle of animals **Insight Assessments** • **Understand the need for a range of food and the importance of hygiene and exercise** • **Describe the life cycle of an animal** • **Know the basic needs of animals included humans** • **I know how to ask simple questions**

	Habitats/Food Chains	I can explore and compare the differences between things that are living, dead, and things that have never been alive. I can 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	**Assessment Tasks** Food chains activity Classifying - Alive, Dead, Never Alive **Insight Assessment** • **I know how to use simple equipment to make observations** • **I know how to explain to others what I have found out**
	Plants	I can observe and describe how seeds and bulbs grow into mature plants. I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	**Assessment Tasks** Stages of growth Growing Plants healthily **Insight Assessments** • **Know what plants need to grow** • **Explain how seeds and bulbs grow into plants** •
	Living things and their habitats	I can discuss animals and plants, and how they depend on each other. I can identify and name a variety of plants and animals in their habitats, including micro- habitats. I can 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 can compare objects, living things or events.	**Assessment Tasks** Natural Habitats Match animals and habitats Sources of food **Insight Assessments** • **Classify things that are living, dead and that have never been alive.** • **Match animals to their natural habitats** • **Name sources of food for animals** • **Explain a simple food chain** • **I know how to identify anf classify things**

Year 3/4	**Animals including humans**	I can identify that humans and some other animals have skeletons and muscles for support, protection and movement. I can recognise that living things can be grouped in a variety of ways.	**Assessment Tasks** The Human Skeleton Muscles Quiz **Insight Assessments** • **Describe the skeletal and muscular system of a human** • **Discuss how living things can be classified** • **I know how to ask relevant scientific questions** • **I know how to use observations and knowledge to answer scientific questions.**
	Electricity	I can identify common appliances that run on electricity I can construct a simple series electrical circuit, Identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers I can 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 I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit I can recognise some common conductors and insulators, and associate metals with being good conductors.	**Assessment Tasks** Label the circuit Appliances quiz Insulators and conductors quiz **Insight Assessments** • **Know the components in a series circuit** • **Identify appliances that need electricity** • **Recognise conductors and insulators** • I know how to identify differences, similarities and changes related to an enquiry. • I know how to draw conclusions and suggest improvements.

Sound	I can identify how sounds are made, associating some of them with something vibrating. I can recognise that vibrations from sounds travel through a medium to the ear. I can find patterns between the pitch of a sound and features of the object that produced it. I can find patterns between the volume of a sound and the strength of the vibrations that are produced. I can recognise that sounds get fainter as the distance from the sound source increases.	**Assessment Tasks** Words associated with sound quiz Label parts of the ear **Insight Assessments** • **Know how sounds are made and travel through the ear** • **I know how to make predictions with a reason.** • **I know how to use findings to report in different ways, including oral and written explanations, presentations**
Living things and their habitats	I can explore and use classification keys to help group, Identify and name a variety of living things in their local and wider environment I can recognise that environments can change and that this can sometimes pose dangers to living things.	**Assessment Tasks** Food chains matching Classifying animals table **Insight Assessments** • **Classify animals into their group**
Forces & Magnets	I can compare how things move on different surfaces I can notice that some forces need contact between two objects, but magnetic forces can act at a distance I can observe how magnets attract or repel each other and attract some materials and not others I can 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 I can describe magnets as having two poles I can predict whether two magnets will attract or repel each other, depending on which poles are facing.	**Assessment Tasks** Magnets sorting Friction ordering **Insight Assessments** • **Know about attracting and repelling in magnets.** • **Know how objects move on different surfaces** • **I make careful and accurate observations including the use of standard units.**

Plants	I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers I can 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 I can investigate the way in which water is transported within plants	**Assessment Tasks** Plant labelling Quiz about growth **Insight Assessment** • **I make careful and accurate observations including the use of standard units.**
Light	I can recognise that they need light in order to see things and that dark is the absence of light. I can notice that light is reflected from surfaces. I can recognise that light from the sun can be dangerous and that there are ways to protect their eyes. I can recognise that shadows are formed when the light from a light source is blocked by a solid object. I can find patterns in the way that the size of shadows change.	**Assessment Tasks** Shadows Activity Reflection Quiz **Insight Assessments** • **Explain that there are shadow changes during the day** • **Know that light is reflected from the surface** • **I know how to make predictions with a reason.** • **I know how to use findings to report in different ways, including oral and written explanations, presentations**
Animals including humans	I can describe the simple functions of the basic parts of the digestive system in humans I can identify the different types of teeth in humans and their simple functions I can construct and interpret a variety of food chains, Identifying producers, predators and prey.	**Assessment Tasks** Digestive system quiz Construct a food chain **Insight Assessments** • **Classify animals into their group**

Living things and their habitats	I can explore and use classification keys to help group, Identify and name a variety of living things in their local and wider environment I can recognise that environments can change and that this can sometimes pose dangers to living things.	**Assessment Tasks** Food chains matching Classifying animals table **Insight Assessments** • **Classify animals into their group Identify producers, predators and prey in a food chain** • **I know how to ask relevant scientific questions** • know how to use observations and knowledge to answer scientific questions. I gather, record, classify and present data in different ways to answer scientific questions.
Rocks	I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties I can describe in simple terms how fossils are formed when things that have lived are trapped within rock I can recognise that soils are made from rocks and organic matter.	**Assessment Tasks** Rocks Quiz Soil Quiz **Insight Assessments** • **Compare and group rocks** • **Know how soil is made** • **Know the difference between sedimentary, igneous and metamorphic.** • **I gather, record, classify and present data in different ways to answer scientific questions.**
States of matter	I can compare and group materials together, according to whether they are solids, liquids or gases I can 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) I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	**Assessment Tasks** **Insight Assessments** • **I know how to use equipment including thermometers and data loggers to make measurements.** • I know how to set up a test to compare two

	Plants	I can explore the part that flowers play in the life cycle of flowering plants, I can talk about pollination, seed formation and seed dispersal.	**Assessment Tasks** Function of plant parts Transportation Life cycles Food chains matching Classifying animals table **Insight Assessments** • **Know the functions of different parts of plants and trees** • **Classify animals into their group** • **Identify producers, predators and prey in a good chain** • **I know how to set up a test to compare two things.** • **I know how to set up a test and explain why it is fair.** • **I know how to identify differences, similarities and changes related to an enquiry.** • **I know how to draw conclusions and suggest improvements.**