WARREN PARK PRIMARY SCHOOL

SCIENCE – A Progressive Learning Journey

TOPIC	RECEPTION – FUNDAMENTAL CONCEPTS
UNDERSTANDING THE WORLD (EXPECTED)	Know similarities and differences in relation to objects, materials and places. Can discuss their own environment and how environments vary. Observe plants and animals and discuss changes, similarities and differences.
UNDERSTANDING THE WORLD (EXCEEDING)	Know that the environment and living things are influenced by human activity. Describe some actions of people that influence the environment they live in(positive and negative). Know some properties of basic materials and suggest possible uses.
RECEPTION AGE ACCOMPLISHED	

WARREN PARK PRIMARY SCHOOL
SCIENCE – A Progressive Learning Journey

TOPIC	YEAR ONE – SUBSTANTIVE AND DISCIPLINARY KNOWLEDGE
ANIMALS AND HUMANS	Identify and Name a variety of common fish and amphibians. Identify and Name a variety of common reptiles, mammals and birds. Understand the terms: Carnivore, Herbivore and Omnivore – Identify and Name a variety of animals that are carnivores, herbivores and omnivores – Identify shared characteristics of carnivores, herbivores and omnivores. Describe the structure of a variety of animals (fish, reptiles, birds, amphibians, mammals) – Compare the structure of a variety of animals (fish, reptiles, birds, amphibians, mammals) Identify, Name and Label the basic parts of the human body. Understand which body parts are associated with which of the senses – Understand how senses leads to responses – Give examples of how we respond to our senses.
	asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment identifying and classifying using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.
PLANTS	Identify (recognise) a variety of common, garden plants – Name a variety of common garden plants. Identify (recognise) a variety of common, wild plants – Name a variety of common, wild plants. Understand the terms deciduous and evergreen – Identify (recognise) common, deciduous and evergreen trees – Name common, deciduous and evergreen trees. Identify the basic structure of common flowering plants and trees (leaves, flowers, petals, stem, root, truck, seed, branches, fruit) Describe the basic structure of common flowering plants and trees (Roots are at the bottom. Roots feed the plant)
	asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment identifying and classifying using their observations and ideas to suggest answers to questions

WARREN PARK PRIMARY SCHOOL

SCIENCE – A Progressive Learning Journey

SEASON CHANGES	Observe changes across all four seasons. Observe and describe weather associated with the four seasons. Describe how day length varies (Summer = Longer and Winter = Shorter)
EVERYDAY MATERIALS	Distinguish between an object and the material from which it is made (bench/wood). Identify and Name a variety of everyday materials (wood, plastic, glass, metal, rock, water) Describe the simple physical properties of everyday materials (wood, plastic, glass, metal, rock, water) – Establish materials that may be good for certain jobs based on their properties. Compare and group materials on the basis of ther properties.
	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.

YEAR ONE AGE ACCOMPLISHED

WARREN PARK PRIMARY SCHOOL
SCIENCE – A Progressive Learning Journey

TOPIC	YEAR TWO – SUBSTANTIVE AND DISCIPLINARY KNOWLEDGE
ANIMALS AND HUMANS	Be aware that animals, including humans, have offspring that grow into adults – Understand that all living things will eventually die. Explore and describe the basic needs of animals, including humans, for survival (water, warmth, food (light) – Understand what sources there are for theses necessities. Describe the importance for humans of exercise, eating the right amounts of different foods, and hygiene (increases survival chances).
	observing closely, using simple equipment performing simple tests using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.
PLANTS	Observe and describe how seeds and bulbs grow into mature plants. Explore how plants need water, light and a suitable temperature to grow and stay health – Describe how plants need water, light and a suitable temperature to grow and stay healthy. Understand that environmental change can affect the living things that live there.
	asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment identifying and classifying using their observations and ideas to suggest answers to questions
LIVING THINGS + HABITATS	Understand that things are either living, dead or have never been alive – Explore and compare the difference between things that are living, dead, and have never been alive. Understand that different animals live in different places – Describe how different habitats provide the basic needs for different kinds of animals. Understand and give examples of the fact that animals and their habitats depend on each other – Recognise that living things are adapted to survive. Identify and name a variety of plants and animals in their habitats, including micro-habitats. Describe how animals obtain their food from plants and other animals using a simple food chain – Identify and name different food sources.

WARREN PARK PRIMARY SCHOOL

SCIENCE – A Progressive Learning Journey

	asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.
EVERYDAY MATERIALS	Indentify and compare a variety of everyday materials for practical uses (wood, plastic, cardboard, metal, brick, glass, paper). Explore how the shapes of some solid objects can be changed by squashing, stretching, twisting and bending.
	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.
YEAR TWO AGE ACCOMPLISHED	

WARREN PARK PRIMARY SCHOOL
SCIENCE – A Progressive Learning Journey

TOPIC	YEAR THREE PROGRESSION – SUBSTANTIVE AND DISCIPLINARY KNOWLEDGE
ANIMALS AND 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 other animals have skeletons and muscles for support, protection and movement.
	asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests using straightforward scientific evidence to answer questions or to support their findings.
PLANTS	Identify and describe the functions of different parts of flowering plants (roots, stem/trunk, leaves, flowers) – Investigate the way in which water is transported within plants. Explore the requirements of plants for life and growth (air, light, water, nutrients and room to grow) – Describe how the plants obtains these necessities and the adaptions they go through. Explore the role of the flower in the life cycle of flowering plants – Know that plants normally grow from seeds or bulbs – Relates seeds with reproduction.
	asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, and discuss fair tests making systematic and careful observations gathering, recording, classifying and presenting data identifying differences, similarities or changes related to simple scientific ideas and processes
FORCES + MAGNETS	Compare and explore how things move on different surfaces – Identify the effects that pushing and pulling have on a moving object. Notice that some forces require contact between objects but magnetic forces can work at a distance. Observe how magnets attract and repel each other and attract some materials but not others – Describe magnets as having two poles – Identify factors which effect the strength of a magnetic force. Compare and group together everyday materials on the basis of whether or not they are attracted to a magnet and identify some magnetic materials. Predict whether magnets will attract or repel depending on which way they are facing.

WARREN PARK PRIMARY SCHOOL

SCIENCE – A Progressive Learning Journey

	setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements. 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
ROCKS	Understand that there are different types of rock – Compare and group different rocks on the basis of their appearance and physical properties. Describe, in simple terms, how fossils are formed when things that have lived are trapped within rock – Understand that fossils provide evidence of living things changing over time. Recognise that soils are made from rocks and organic matter.
	asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.
LIGHT	Recognise that they need light to be able to see and that darkness is the absence of light – Notice that light is reflected from surfaces and suggest materials that are excellent reflectors – Know that light travels in straight lines, from the object to the eye. 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 source is blocked by an opaque object – Find and explore patterns in the way that the size of shadows change.
	setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements. 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
YEAR THREE AGE ACCOMPLISHED	

WARREN PARK PRIMARY SCHOOL
SCIENCE – A Progressive Learning Journey

TOPIC	YEAR FOUR PROGRESSION – SUBSTANTIVE AND DISCIPLINARY KNOWLEDGE
ANIMALS + HUMANS	Describe the simple functions of the basic parts of a human digestive system. Identify the different types of teeth in humans and their functions – Compare the similarities and differences between human and animal teeth. Understand the terms: predators, prey, producers and consumers – Construct and Interpret a variety of food chains, identifying predators, prey, producers and consumers – Understand that a food chain is a transference of energy – Recognise that different food chains occur in different habitats.
	asking relevant questions and using different types of scientific enquiries to answer them making systematic and careful observations reporting on findings from enquiries, including oral and written explanations and displays identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.
LIVING THINGS + HABITATS	Recognise that living things can be grouped in a number of ways, using their characteristics. Explore and use classification keys to help group, identify and name a variety of living things in the local and wider environment. Recognise that environments can change naturally or via human impact and the dangers this can pose – Observe how change affects different living things in different ways.
	asking relevant questions and using different types of scientific enquiries to answer them gathering, recording, classifying and presenting data in a variety of ways to help in answering questions using straightforward scientific evidence to answer questions or to support their findings.
ELECTRICITY	Identify common appliances that run on electricity (Mains and Battery) – Understand the terms CONDUCTOR and INSULATOR and apply to everyday appliances. Recognise some common conductors and insulators of electricity and associate metals with being good conductors. Construct a simple series circuit, identifying and naming its basic parts – Identify whether a bulb will light in a simple circuit based on whether it is part of a complete loop with a battery/cell. Recognise that a switch opens and closes a circuit and associate this with whether or not a bulb will light.
	asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests

WARREN PARK PRIMARY SCHOOL

SCIENCE – A Progressive Learning Journey

	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment 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 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
STATES OF MATTER	Compare and group materials according to whether or not they are solids, liquids or gases – Identify the properties of solids, liquids and gases. Observe that some materials change state when heated or cooled – Measure/record the temerapture that this change occurs – Begin to question if the change can be reversed – Understand that the temperature a substance changes state at is always the same. Understand and give examples of the terms: EVAPORATION and CONDENSATION – Identify the part played by evaporation and condensation in the water cycle. Begin to associate the rate of evaporation with temperature – Explore and experiment evaporation using changing temperatures.
	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 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
SOUND	Identify the difference between a SOURCE and the SOUND – Identify how sounds are made, associating them with something vibrating – Recognise that vibrations travel through a medium to the ear. Find patterns between the pitch of a sound and the 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 – Explore other ways to change a sound's volume
	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment 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
YEAR FOUR AGE ACCOMPLISHED	

WARREN PARK PRIMARY SCHOOL
SCIENCE – A Progressive Learning Journey

TOPIC	YEAR FIVE PROGRESSION – SUBSTANTIVE & DISCIPLINARY KNOWLEDGE
ANIMALS + HUMANS	Recognise and discuss that humans change throughout their life (birth, puberty, adulthood) – Describe the changes as humans develop to old age. Understand that different animals evolve at different rates and live to different ages.
	identifying scientific evidence that has been used to support or refute ideas or arguments.
LIVING THINGS + HABITATS	Understand the terms: mammal, amphibian, insect, bird and reptile – Identify animals that fall into the categories based on their appearance and make-up. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the process of reproduction in plants & animals – Compare the similarities & differences in reproduction between a human and a selected animal.
	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments.
FORCES	Explain that unsupported objects fall toward Earth because of gravity acting between the two. Understand the terms: air resistence, friction and water resistence – Identify the effects of air resistence, friction and water resistence that act between objects or moving surfaces. Recognise that mechanisms including levers, pulleys and gears allow a smaller force to have greater effect.
	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

WARREN PARK PRIMARY SCHOOL

SCIENCE – A Progressive Learning Journey

PROPERTIES + MATERIAL CHANGES	Understand and give exaples of: TRANSPARENT, OPAQUE, TRANSLUSCENT, SOLUABLE and INSOLUABLE – Compare and group materials based on properties (hardness, solubility, transparency, conductivity both thermal and electrical, and their response to magnetism). Know the difference between: MIXTURE and SOLUTION – Know that some materials will dissolve in liquid to form a solution – Describe how to recover a substance from a solutuion. Use knowledge of solids, liquids and gases to decide how mixtures may be separated, including sieving, filtering and evaporating. Give reasons, after testing, for the uses of everyday materials (metals, woods and plastic). Demonstrate that dissolving, mixing and changes of state can be reversible changes – Explain how some changes create a new material and these changes are usually not reversible. Include changes associated with burning.
	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
EARTH AND SPACE	Know that Earth is one of a number of planets in OUR solar system – Describe movement of the Earth and other planets in relation to the Sun. Understand that larger objects have a greater gravitational pull – Describe the movement of the Moon in relation to the Earth. Use the idea of the Earth's rotation to explain day and night and the apparent movement across the sky.
	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary using test results to make predictions to set up further comparative and fair tests identifying scientific evidence that has been used to support or refute ideas or arguments.
YEAR FIVE AGE ACCOMPLISHED	

WARREN PARK PRIMARY SCHOOL
SCIENCE – A Progressive Learning Journey

TOPIC	YEAR SIX PROGRESSION – SUBSTANTIVE & DISCIPLINARY KNOWLEDGE
ANIMALS AND HUMANS	Identify and name the main parts of the human circulatory system – Know that the heart pumps blood through vessels to the muscles; the muscles take oxygen and nutrients from the blood, and oxygen is taken into the blood via the lungs. Recognise the impact of diets, drugs, exercise and lifestyle on their bodies. Describe the way in which nutrients and water are transported in animals including humans (absorbed into the blood stream by the vessels).
	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests
LIVING THINGS + HABITATS	Describe how living things are classified into broad groups based on observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Classify animals using characteristics and keys – Give reasons for classifying plants and animals based on specific characteristics.
	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Identifying scientific evidence that has been used to support or refute ideas or arguments.
ELECTRICITY	Understand that CURRENT is the amount of electricity in a circuit – Understand that electricity is measured in volts – Associate brightness and volume with the number or voltage of cells in the circuit. Explore, compare and give reasons for the variations in the performance of components (brightness of bulbs, loudness of buzzers, switch position) Use recognised symbols when representing a simple circuit in a diagram. Recognise and give examples of the energy output created by electricity (KINETIC, SOUND, LIGHT, HEAT) – Understand that these show there is electricity present.
	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

WARREN PARK PRIMARY SCHOOL

SCIENCE – A Progressive Learning Journey

EVOLUTION AND INHERITANCE	Recognise and give examples that living things have changed over time – Know and explore how fossils provide evidence that living things inhabited Earth many years ago. Recognise that living things produce offspring of the same kind but they can vary and are not identical to their parents. Identify how different plants and animals are adapted to suit their environment in different ways – Recognise that adaptation may lead to evolution and provide examples. Recognise that competition exists for resources and mates – Understand that the living things that are best suited/adapted are most likely to reproduce.
	planning different types of scientific enquiries to answer questions taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of using scientific, classification keys, tables, scatter graphs, bar and line graphs identifying scientific evidence that has been used to support or refute ideas or arguments.
LIGHT	Recognise that light appears to travel in straight lines – Use the idea that light travels in straight lines to explain how objects are seen by reflecting light into our eye. Understand that we see things because light travels from a light source to eyes or from a light source to an object and then into our eye – Describe the difference between a smooth material and a rough material regarding its light reflection. Using the idea of light travelling in straight lines, understand why shadows have the same shape as the object that cast them.
	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Identifying scientific evidence that has been used to support or refute ideas or arguments. Using test results to make predictions to set up further comparative and fair tests
YEAR SIX AGE ACCOMPLISHED	