

Science Curriculum Overview

‘Children leave Rood End with an enthusiasm and curiosity for science and understand how it can influence their futures’

	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
Year 1	Animals including humans	Seasonal changes	Everyday materials	Seasonal changes	Seasonal changes	Plants
Objectives	I can name a variety of common animals I can understand carnivore, herbivore and omnivore I can identify the main parts of the human body I can explore human senses I can compare the structure of a variety of animals	I can observe changes over time	I can name a variety of everyday materials I can say what material an object is made from I can describe the properties of materials I can explore if a material is waterproof I can explore if a material is absorbant I can classify a material according to its properties	I can observe changes over time	I can observe changes over time	I can name a variety of plants I can name a variety of garden plants, fruits and vegetables I can compare different types of trees I can describe the basic structure of a plant I can identify seeds in a plant I can observe the growth of a plant
Investigations	Exploring human senses		Material matching. Grouping materials according to their properties. Is a material waterproof? Will a material absorb liquid?			Plant hunt at the local park Investigate the structure of a plant Investigate seeds in a fruit Investigate the growth of a plant
Key Vocab	human, animal, carnivore, herbivore, omnivore, body, senses, mammals, birds, reptiles, amphibians, fish	Seasons, Autumn, Spring, Summer, Winter	material, object, properties, waterproof, absorbant, classify,	Seasons, Autumn, Spring, Summer, Winter	Seasons, Autumn, Spring, Summer, Winter	plant, tree, fruit, vegetable, seed, grow
Equipment			Measuring cylinder			Magnifying glass
Experiences		Visits to the park		Visits to the park	Visits to the park	
Year 2	Living things and their habitats	Animals including humans	Everyday materials			Plants
Objectives	I can describe and name a variety of plants and animals in their habitat I can name a variety of animals and describe their habitats I can explore how different plants and animals depend on each other I can create a simple food chain I can compare things that are living, dead and never been alive I can identify that most living things live in habitats to which they are suited	I can explain that animals have offspring that grow into adults I can observe how humans grow into adults I can describe a simple life cycle I can describe the basic needs of animals for survival I can investigate what humans need to stay healthy	I can describe the properties of different materials I can identify different objects made from the same material I can compare the suitability of different materials I can explore why some materials are more suitable for certain uses I can investigate the most suitable material for a particular use I can explore how the shapes of solid objects can be changed			I can explore how some plants contain seeds. I know that seeds and bulbs have a store of food inside them I can describe how seeds/bulbs grow into mature plants I can explore what plants need to grow and be healthy I can explain what plants need to grow and be healthy
Investigations	Identifying plants and animals in their environment. Identifying animals in microhabitats. Investigate dead, living and never alive. Investigate the most suitable habitat (choice chamber)	Human growth investigation What do humans need to stay healthy?	Properties of materials investigation. Materials that objects are made from. Best paper for a drinking straw. Most suitable material for a raincoat. Explore how the shapes of solid objects can be changed.			Investigate seeds inside fruit Investigate what is inside a seed What do seeds need to germinate? What do plants need to grow and be healthy?
Key Vocab	Plant, animal, habitat, microhabitat, depend, food chain, dead, living, never alive, suitable, suited	animal, human, adult, grow, offspring, life cycle, water, food, air, survival, healthy	properties, material, object, suitable, unsuitable			Plant, grow, food, seed, bulb, healthy, germinate,
Equipment	Pooter, magnifying glass,					magnifying glass
Experiences	Trip to park					
Year 3	Rocks	Forces and magnets	Light	Animals including humans		Plants
Objectives	I can identify the 3 different types of rocks I can observe the physical properties of rocks I can investigate what soil is made from I can describe how fossils are formed I can discuss how different living things have become fossils I can plan and deliver an oral presentation	I can identify push, pull and magnetic forces I can compare how things move on different surfaces I can record data I can identify some magnetic materials I can explore the strength of different magnets I understand how the properties of magnets make them useful in everyday items	I understand that we need light to see things I can observe how light is reflected from surfaces I understand that sunlight can be dangerous I can explain how shadows are formed I can observe how shadows change I can describe how and why shadows change	I can explore why humans have skeletons I can compare animal and human skeletons I can report on a scientific enquiry I can identify and group animals with and without skeletons I know that humans need the right type of nutrition to survive		I can identify the different parts and functions of a flowering plant I can investigate how water is transported in plants I can make systematic and careful observations I can explore the requirements of plants for life and growth I can explore different types of seed dispersal I can describe the life cycle of a flowering plant
Investigations	Observing and grouping igneous, sedimentary and metamorphic rocks. Observing permeable and impermeable rocks. What is soil made from? How fossils are formed.	Push, pull or magnetic force. How things move on different surfaces (friction). Magnetic and non-magnetic materials. The strength of different magnets.	Identifying light sources How light reflects and travels in straight lines How shadows are formed How and why shadows change	Types and purpose of muscles. Comparing animal and human skeletons Planning a healthy menu		How water is transported in plants Different types of seed dispersal
Key Vocab	Rock, igneous, metamorphic, sedimentary, permeable, impermeable, organic matter, fossil, palaeontologist, geologist	Force, magnet, magnetic, non-magnetic, push, pull, friction, surface, attract, repel	light, dark, darkness, shadow, reflect, sunlight,	human, animal, skeleton, muscle, diet, nutrition		Plant, flowering, transported, life, grow, life-cycle
Equipment	Magnifying glass, pipette, funnel, beaker, filter paper	magnet	torch, mirror, smoke machine,	Animal and human x-rays		

Experiences			Smoke machine in class	P.E coach activity		Sticky buds dispersal activity
Year 4	States of matter	Animals including humans	Sound	Electricity		Living things and their habitats
Objectives	I can compare and group solids and liquids Needs updating on MTP	I can identify different parts of the digestive system I can explore how teeth are damaged and how to keep them healthy I can describe the basic parts of the digestive systems I can compare different animals teeth I can construct a food chain	I can identify how sounds are made I can recognise that vibration from sounds travel to the ear I can find patterns between the pitch of a sound and the object that created it I can match two sounds I can recognise how sound gets fainter as the distance from it increases I can record results in different ways	I can identify common appliances that run on electricity I can construct a simple electrical circuit I can construct a simple electrical circuit with various components I can explore conductors and insulators I can make a switch that opens and closes a circuit I can make a circuit with a purpose		I can group vertebrate and invertebrates I can sort vertebrate animals into groups I can sort invertebrtaes into groups I can classify living things according to their characteristics I can identify and group a variety of living things I can identify and group a variety of living things in the local environment
Investigations		That our teeth are part of our digestive system. Comparing different animals' teeth.	That sound is made by something vibrating. High pitch and low picth. Making and matching two sounds. How sound gets fainter as the distance from it increases.	Constructing a simple circuit. Making a switch that opens and closes a circuit. Exploring conductors and insulators. Constructing a circuit with a purpose.		Identify and classify living things in the local environment
Key Vocab		animal, human, digestive system, teeth, food chain, producer, predator, prey	Sound, pitch, high, low, vibrate, ear, fainter, louder	Electricity, circuit, components, switch, battery, mains electricity, conductor, insulator, safety		habitat, living things, vertebrate, invertebrate, characteristics, environment
Equipment		Mirror, animal and human x-rays	test tubes	circuit equipment, batteries		pooters
Experiences						Trip to the canal
Year 5	Properties and changes of materials	Forces and Magnets	Earth and space	Living things and their habitats		Animals including humans
Objectives	I can explore how some materials dissolve in a liquid to form a solution I can explore reversible changes I can explore how a mixture might be separated I can explain that some changes in materials are not reversible I can explore thermal conductivity I can group materials according to their properties	I can explore the force of gravity I can identify the effects of air resistance I can identify the effects of water resistance I can identify the effects of friction I can explore how some mechanisms allow a small force to have a greater effect	I can name the planets in the solar system I can describe the movement of the planets relative to the sun I can describe the movement of the moon relative to the earth I can explain how the Earth rotates on its axis I can explain how the Earths rotation is linked to day and night I can understand how ideas about the solar system have changed	I can describe sexual reproduction in a flowering plant I can describe asexual reproduction in plants I can describe the life cycles of mammals and birds I can explore the difference between animal life cycles I can explore life cycles from around the world I can investigate the work of an animal behaviourist or naturalist		I can describe the stages in the growth and development of humans School nurse puberty talk I can describe the changes humans experience in puberty I can describe the gestation period of a variety of animals I can explore how a human grows before birth I can describe how humans change in old age
Investigations	That some materials will dissolve in a liquid. Reversible changes. Seperating materials in different ways. Irreversible changes. Exploring thermal conductivity. Grouping materials according to their properties.	Exploring gravity. Air resistance (parachutes) Water resistance. Exploring friction. Exploring how levers affect forces.	Describe the movement of the planets relative to the sun.	Flowering plant dissection. Planting different fruits and vegetables. Do they grow?		Formulate a healthy lifestyle plan for and elderly person How humans grow before birth
Key Vocab	material, properties, changes, dissolve, liquid, solution, soluble, reversible, irreversible, separate, thermal conductivity, magnetic	Force, gravity, resistance, friction, mechanism, lever, gears, water, air	Earth, space, planets, sun, rotate, axis, day, night, solar system, Geocentric, Heliocentric	Living things, plants, habitats, asexual, sexual, reproduction, life cycle, mammals, birds, behaviourist, naturalist		Animals, humans, growth, development, puberty, gestation period, birth, old age, healthy
Equipment	Funnel, filter paper, beakers, sieve, magnet,	Stop watches, tall cyllinders (1000ml), bicycle wheel,	inflatable planets	tweezers		
Experiences		Making parachutes		Dissect a flower		School nurse visit
Year 6	Animals including humans	Light	Evolution	Electricity		Living things and their habitats
Objectives	I can name and locate the main body organs I can explain the function of the heart I can describe the human circulatory system I can describe the function of the lungs I can take measurements and interpret results I can describe the respiratory system I can describe the impact of exercise, diet and drugs on our bodies	I can explore how light travels to the eye I can explore how light travels in straight lines I can explore how shadows relate to the object that cast them I can describe the main functions of the eye I can experiment with making rainbows	I can identify reasons for extinction. I can research using internet resources I can explain a paleontologist's findings and contributions to understanding I can describe and explain inheritance I can describe a naturalist's findings and contributions to understanding I can explore how environmental changes affect animals I can describe how different plants are adapted to their environments	I can match component images to components I can investigate how components in a circuit can be affected by voltage I can use recognised symbols to draw a circuit diagram I can explore the dangers of electricity I can design a circuit with a purpose		I can give reasons for classifying living things based on their similarities and differences I can describe how living things are classified into groups I can classify a creature based on its characteristics I can describe and investigate microorganisms I can identify the characteristics of different types of microorganisms I can use what I have observed to make a conclusion I can classify organisms found in my local habitat
Investigations	Research the function of the human heart How the circulatory system works Function of the lungs/ measuring lung capacity	Light travels in staright lines How shadows relate to the object that cast them How rainbows are formed	How environmental changes affect animals	How components in a circuit are affected by voltage Design a circuit with a purpose		What conditions make mould grow? Create a field guide for a local habitat Creating and classifying a new creature
Key Vocab	animal, human, organs, oxygen, lungs, heart, intestines, liver,kidney, brain, oesophagus,stomach, oxygen, carbon dioxide, drugs, exercise	Light, shadow, rainbow, eye, pupil, iris, retina	Evolution, extinction, palaeontologist, inheritance, adapt, naturalist, environment, environmental, animals, plants, living things	Electricity, component, voltage, symbols, danger, purpose		Habitat, living things, classify, chracteristics, organisms, microorganisms
Equipment	Tape measures	Smoke machine, mirror, torch		circuit equipment		
Experiences		Smoke machine				Trip to local habitat