



Year 2

Year 2 • Living Things and their Habitats

Unit overview

KEY KNOWLEDGE

Know the differences between things that are living, dead and those that have never been alive. Describe how habitats and microhabitats provide conditions for living things to live, grow and feed. Identify and name plants and animals in their habitats. Describe food chains and identify sources of food.

KEY VOCABULARY

living, dead, non-living, movement, respiration, breathing, energy, sensitivity, sight, touch, hearing, smell, taste, growth, reproduction, offspring, excretion, waste, nutrition, habitat, microhabitat, conditions, adapted, adaptation, light, temperature, water, humidity, food chain, feeding, sort, group, classify, criteria, spider key

PRIOR LEARNING

Retrieves Year 1 plants and animals, feeding groups, local species, materials, light and seasonal changes; links to Year 2 growth and survival.

DISCIPLINARY KNOWLEDGE & SKILLS

Use and remember science words; use simple models to describe. • Group by difference, similarity or change. • Use science vocabulary to compare conditions. • Use spider keys and identification resources. • Add science labels/information to diagrams. • Recall and apply knowledge independently.

ENQUIRY TYPES

Researching; classification; finding patterns; observing over time; fair testing

SCIENTISTS / STEM LINKS

David Attenborough – wildlife broadcaster and conservation communicator; Jane Goodall – primatologist and expert on chimpanzee behaviour.

WHY THIS? WHY NOW?

Retrieves Year 1 plants, animals, diets and local observations. Pupils now distinguish living/dead/never alive, relate organisms to habitats and microhabitats and construct food chains. This prepares for KS2 classification, ecosystems, environmental change and adaptation.

CAREERS LINK

Ecologist • Conservationist • Ranger • Environmental scientist
Gatsby: BM4 – link habitats and food chains to environmental work; BM5 – encounter a conservation professional; BM6 – habitat survey in a local green space.

Year 2 • Living Things and their Habitats

Learning sequence • knowledge, disciplinary skills and enquiry

Learning objectives / key knowledge	Disciplinary knowledge / skills	Enquiry opportunities	Enquiry type
What makes something living? Know the seven processes of life (MRS GREN).	Use and remember science words; use simple models to describe.	Practical examples of movement, respiration, sensitivity, growth, reproduction, excretion and nutrition.	Researching; classification; finding patterns; observing over time; fair testing
What makes something non-living? Distinguish living, dead and never alive.	Group by difference, similarity or change.	School safari; classify examples; describe abiotic factors.	
What is a habitat and microhabitat? Know that habitats provide what living things need.	Use science vocabulary to compare conditions.	Explore local habitats/microhabitats; compare light, warmth and moisture.	
How are living things suited to habitats? Identify and sample local organisms safely.	Use spider keys and identification resources.	Use pooters/nets/trays; map where organisms are found; explain patterns.	
What is a food chain? Put living things in feeding order and use arrows to show transfer.	Add science labels/information to diagrams.	Construct food chains from familiar organisms; trace food sources.	
Can you construct food chains? Apply food-chain knowledge to local and unfamiliar habitats.	Recall and apply knowledge independently.	Use collected specimens/fact cards to construct and explain food chains.	

Year 2 • Animals Including Humans

Unit overview

KEY KNOWLEDGE

Animals, including humans, have offspring which grow into adults; compare life cycles. Animals need water, food and air (oxygen) to survive. Understand the importance of exercise, a balanced diet and hygiene.

KEY VOCABULARY

baby, offspring, toddler, child, adolescent, teenager, adult, reproduction, growth, water, hydrated, food, nutrition, diet, balanced, air, oxygen, breathing, respiration, exercise, fitness, heart rate, pulse, hygiene, microbes, bacteria, viruses, fungi, number line, table of results, cause, effect, pictogram, block chart, bar chart, axes, coordinate

PRIOR LEARNING

Builds on Year 1 body parts, senses, animal groups and diets, and on Year 2 living processes and habitats.

DISCIPLINARY KNOWLEDGE & SKILLS

Measure and record; describe change over time. • Use and remember science words; compare patterns. • Use science to describe cause and effect. • Construct simple tables/charts from data. • Measure labelled divisions; record pulse/breathing data. • Use science facts to explain observations and safe choices.

ENQUIRY TYPES

Finding patterns; observing over time; fair testing; researching; data handling

SCIENTISTS / STEM LINKS

Florence Nightingale – hygiene and health; scientists and health professionals who study exercise, nutrition and microbes.

WHY THIS? WHY NOW?

Builds on Year 1 body parts, senses, animal groups and diets. Pupils extend this to growth, life cycles, survival needs, exercise, diet and hygiene. This prepares for Year 3 nutrition and body systems and later work on circulation and healthy lifestyles.

CAREERS LINK

Doctor • Nurse • Dietitian • Physiotherapist • Sports scientist
Gatsby: BM4 – connect health science to careers; BM5 – encounter a health professional; BM6 – explore healthcare or sports-science workplaces virtually or locally.

Year 2 • Animals Including Humans

Learning sequence • knowledge, disciplinary skills and enquiry

Learning objectives / key knowledge	Disciplinary knowledge / skills	Enquiry opportunities	Enquiry type
What happens as we grow? Describe stages from offspring to adult and old age.	Measure and record; describe change over time.	Create human life-cycle timelines; compare height/size data.	Finding patterns; observing over time; fair testing; researching; data handling
Do other animals grow in the same way? Compare vertebrate/invertebrate life cycles.	Use and remember science words; compare patterns.	Observe/research tadpoles, chicks, butterflies or other animals over time.	
What do we need to survive? Know animals need water, food and oxygen.	Use science to describe cause and effect.	Explore breathing, hydration and food; link needs to habitats.	
How can we be more healthy? Know food groups and make balanced choices.	Construct simple tables/charts from data.	Sort foods; examine labels; compare sugar/energy and build a balanced diet.	
How does exercise keep us healthy? Know effects on heart, lungs and muscles.	Measure labelled divisions; record pulse/breathing data.	Compare heart rate/breathing before and after different exercise.	
How does hygiene keep us healthy? Know that good hygiene reduces spread of microbes.	Use science facts to explain observations and safe choices.	Handwashing/hygiene investigations and safe observation of contamination.	

Year 2 • Uses of Everyday Materials

Unit overview

KEY KNOWLEDGE

Describe the properties and uses of a range of everyday materials. Know that there are three states of matter and describe basic properties of solids, liquids and gases. Know that the shape of solid objects can be changed by squashing, bending, twisting and stretching. Secure the link object → material → property → application.

KEY VOCABULARY

object, material, wood, metal, plastic, wool, cotton, paper, cork, rock, glass, fabric, ceramic, rope, concrete, brick, rubber, sponge, elastic, foil, ice, water, water vapour, property, rigid, flexible, hard, soft, waterproof, absorbent, warm, cold, rough, smooth, dull, shiny, opaque, transparent, application, solid, liquid, gas, squash, bend, twist, stretch, force, sort, classify, equipment, variable, cause, effect, investigation, range, method

PRIOR LEARNING

Retrieves Year 1 object/material/property classification, simple property testing and choosing materials for a task.

DISCIPLINARY KNOWLEDGE & SKILLS

Classify and rank by property; explain application. • Use a range of equipment correctly; identify cause variable with support. • Link properties to applications and justify choices. • Select suitable equipment and follow a method. • Group by difference/similarity/change; follow instructions. • Describe changes and compare materials.

ENQUIRY TYPES

Classification; fair/comparative testing; finding patterns; problem solving

SCIENTISTS / STEM LINKS

John Dunlop – rubber and tyres; materials scientists and engineers who design materials for particular applications.

WHY THIS? WHY NOW?

Retrieves Year 1 material names, properties and uses. Pupils now compare suitability more deliberately, investigate changes caused by forces and begin to distinguish solids, liquids and gases. This prepares for Year 4 States of Matter and Year 5 material changes.

CAREERS LINK

Materials engineer • Architect • Product designer • Manufacturing technician
Gatsby: BM4 – connect testing and selection to design/manufacturing; BM5 – meet an engineer/designer; BM6 – explore a manufacturing or construction workplace.

Year 2 • Uses of Everyday Materials

Learning sequence • knowledge, disciplinary skills and enquiry

Learning objectives / key knowledge	Disciplinary knowledge / skills	Enquiry opportunities	Enquiry type
What properties do materials show? Compare and link properties to uses.	Classify and rank by property; explain application.	Sort and rank materials; compare same objects made from different materials.	Classification; fair/comparative testing; finding patterns; problem solving
Can you test a material for a property? Use equipment and enquiry to compare performance.	Use a range of equipment correctly; identify cause variable with support.	Investigate waterproofness, transparency, strength or absorbency.	
Which material is best for an application? Identify required properties and reject unsuitable materials.	Link properties to applications and justify choices.	Test candidate materials for a specific purpose.	
Can we improve a solution? Combine materials/properties and refine choices using evidence.	Select suitable equipment and follow a method.	Iterative problem-solving challenge such as padding, bridge or waterproofing.	
How are solids, liquids and gases different? Describe basic observable properties.	Group by difference/similarity/change; follow instructions.	Explore solids/liquids/air and classify substances by observed behaviour.	
How can we change the shape of a solid? Explore squash, bend, twist and stretch.	Describe changes and compare materials.	Test shape changes in different solids and compare permanent/reversible deformation.	

Year 2 • Plants

Unit overview

KEY KNOWLEDGE

Know and describe the stages as seeds and bulbs grow into mature plants. Know that plants need water, light and a suitable temperature to grow and stay healthy.

KEY VOCABULARY

leaf, leaf vein, mid-rib, stem, root, flower, bud, shoot, tap root, side root, seed, bulb, germinate, grow, cotyledon, seedling, adult, water, light, temperature, survive, reproduction, experiment, variable, observe, measure, cause, effect, comparative test, fair test, method, data range, predict, pattern

PRIOR LEARNING

Retrieves Year 1 plant structure, common plants, deciduous/evergreen trees and seasonal observations; also links to Year 2 living processes and habitats.

DISCIPLINARY KNOWLEDGE & SKILLS

Add science labels and information to diagrams. • Follow instructions in order; make simple predictions. • Identify a cause variable; suggest what might happen. • Observe, measure and describe change. • Describe patterns in data and link cause/effect. • Make conclusions and suggest improvements to methods.

ENQUIRY TYPES

Observing over time; fair/comparative testing; finding patterns; researching

SCIENTISTS / STEM LINKS

George Washington Carver – plant scientist and agricultural researcher; horticultural scientists and botanists.

WHY THIS? WHY NOW?

Builds on Year 1 plant structure and identification. Pupils now study germination and growth and investigate the need for water, light and suitable temperature. This prepares for Year 3 plant functions, reproduction and fair testing of growth variables.

CAREERS LINK

Plant scientist • Horticulturist • Farmer • Agricultural researcher
Gatsby: BM4 – connect plant growth to food and environmental careers; BM5 – encounter a grower/scientist; BM6 – visit a garden, allotment or farm.

Year 2 • Plants

Learning sequence • knowledge, disciplinary skills and enquiry

Learning objectives / key knowledge	Disciplinary knowledge / skills	Enquiry opportunities	Enquiry type
What are the parts of a plant? Revisit structure and identify more detailed features.	Add science labels and information to diagrams.	Use hand lenses and drawings to examine leaves, roots, flowers, seeds and bulbs.	Observing over time; fair/comparative testing; finding patterns; researching
How does a plant grow? Plant seeds/bulbs correctly and begin a life-cycle model.	Follow instructions in order; make simple predictions.	Plant seeds/bulbs and observe germination/growth over time.	
What do plants need to grow? Investigate light, water and warmth.	Identify a cause variable; suggest what might happen.	Set up comparative tests changing light, water, warmth or soil.	
How does a plant grow over time? Identify seed → germination → seedling → adult stages.	Observe, measure and describe change.	Measure/photo plants over time and link evidence to the life cycle.	
What do plants need to stay healthy? Compare growth under different conditions.	Describe patterns in data and link cause/effect.	Review test plants; compare measurements and observations.	
Can we explain a plant life cycle? Use accumulated evidence to describe growth and survival needs.	Make conclusions and suggest improvements to methods.	Complete life-cycle model and evaluate investigation findings.	

Year 2 • Building Circuits (Electricity)

Unit overview

KEY KNOWLEDGE

Know appliances that need electricity to work and identify mains, battery and rechargeable sources. Name circuit components and their symbols and use them correctly and safely. Build simple closed series circuits from instructions. Identify dangers and know how to use electricity safely at home and in the classroom.

KEY VOCABULARY

electricity, source, flow, transfer, circuit, closed, open, series, mains supply, battery, appliance, rechargeable, plug, socket, wire, bulb, buzzer, motor, conductive, non-conductive, component, switch, clips, symbol, risk, method, predict, prediction

PRIOR LEARNING

Builds on Year 1 materials (especially metals/plastics and their properties) and safe practical enquiry. It introduces the energy-transfer model for later KS2 electricity.

DISCIPLINARY KNOWLEDGE & SKILLS

Group by difference, similarity or change. • Notice risk and act on safety suggestions. • Suggest what might happen; use equipment correctly. • Add science labels/information to diagrams. • Follow spoken/written instructions; use diagrams to explain. • Plan a method, predict and conclude from observations.

ENQUIRY TYPES

Classification; problem solving; fair testing; researching; finding patterns

SCIENTISTS / STEM LINKS

Michael Faraday – foundational work on electricity and electromagnetism; electricians and electrical engineers.

WHY THIS? WHY NOW?

Builds on material properties and safe practical enquiry. Pupils are introduced to electrical sources, components, closed circuits and safe use. This provides an early conceptual foundation for the statutory Year 4 Electricity unit and later Year 6 circuit investigation.

CAREERS LINK

Electrician • Electrical engineer • Renewable-energy technician • Electronics designer
Gatsby: BM4 – link circuits to electrical careers; BM5 – encounter an electrician/engineer; BM6 – explore electrical systems in a workplace.

Year 2 • Building Circuits (Electricity)

Learning sequence • knowledge, disciplinary skills and enquiry

Learning objectives / key knowledge	Disciplinary knowledge / skills	Enquiry opportunities	Enquiry type
What things need electricity? Identify appliances and sort by source.	Group by difference, similarity or change.	Explore appliances and classify as mains, battery, rechargeable or other source.	Classification; problem solving; fair testing; researching; finding patterns
How can we use electricity safely? Identify common dangers and safe behaviours.	Notice risk and act on safety suggestions.	Create safety guidance from examples, videos and classroom/home scenarios.	
What is a circuit? Know a battery is an energy source and build a simple closed circuit.	Suggest what might happen; use equipment correctly.	Take apart a torch; build battery-wire-bulb circuits; model flow/transfer.	
What are the components of a circuit? Identify components and simple symbols.	Add science labels/information to diagrams.	Examine/draw batteries, wires, bulbs, buzzers, motors and switches.	
Can you build a circuit from a diagram? Construct and record working circuits.	Follow spoken/written instructions; use diagrams to explain.	Build circuits from diagrams and troubleshoot with support.	
Can you design a working circuit? Use different components to solve a simple problem.	Plan a method, predict and conclude from observations.	Make a torch/alarm or other simple device; compare conductive/non-conductive materials.	