

Year 4 Overview

	Key Objectives (knowledge) Physics	WS Key Areas	Vocabulary
Electricity	<ul style="list-style-type: none"> recognise some common conductors and insulators, and associate metals with being good conductors. associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. use recognised symbols when representing a simple circuit in a diagram. 	<p>ENQUIRY TYPES:</p> <ul style="list-style-type: none"> Carrying out simple comparative and fair tests Finding things out using a wide range of secondary sources of information <p>WS KEY SKILLS:</p> <ul style="list-style-type: none"> Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs 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 argument 	cell, battery, lamp, wire, buzzer, motor, circuit, current, filament, electrical insulator, electrical conductor, mains electricity, switch, terminal, electrons, electrical insulator, electrical conductor, mains, resistor, resistance, generate, generator, coal, gas, oil, fossil fuels, nuclear, neutrons, atoms, biomass-fired power stations, wind turbine, wave hub, tidal flow, hydro-electric, grid, pylon, transmission, transformer, solar panels
Forces	<ul style="list-style-type: none"> Compare how different things move on different surfaces To know that friction is a force that slow moving objects and may prevent objects from starting to move To know when objects are pushed or pulled, an opposing pull or push can be felt To know how to measure forces and identify the direction in which they act 	<p>ENQUIRY TYPES:</p> <ul style="list-style-type: none"> Comparative & fair tests Noticing patterns/pattern seeking <p>WS KEY SKILLS:</p> <ul style="list-style-type: none"> Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, including taking repeat readings when appropriate 	Force, friction, Newton, force meter, gravity, air resistance, push, pull, exert, unbalanced force, mass, gravity, meter, friction, smooth, rough, movement

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Living things and their habitats</p>	<ul style="list-style-type: none"> • 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 • Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals, carnivores, herbivores, omnivores and invertebrates. 	<p>ENQUIRY TYPE:</p> <ul style="list-style-type: none"> • Grouping & Classifying • Finding things out using secondary sources of information <p>WS KEY SKILLS:</p> <ul style="list-style-type: none"> • Identifying differences, similarities or changes related to simple scientific ideas and processes • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • using straightforward scientific evidence to answer questions to support findings • Making systematic and careful observations and, where appropriate • taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. 	<p>environment, impact, positive, negative, litter, pollution, biodiversity, ecosystem, habitat, derelict, graffiti, traffic, destroy, create, habitat, global issue, destruction, deforestation, rainforest, pollution, climate change, food chain, producer, consumer, human impact, invertebrate, vertebrate, classification, fish, amphibian, reptile, bird, mammal, backbone, hair, scales, feathers, eggs, wings, beak, lungs, gills, cold blooded, warm blooded, suckle, sort, group, classify, features, observations, key, distinguish, head, thorax, abdomen, wing, segment, antennae, insects, arachnids (spiders), crustaceans, myriapods, molluscs, worms</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Animals including humans</p>	<ul style="list-style-type: none"> • Identify that humans and some animals have skeletons and muscles for support, protection and movement • Describe the basic parts of the digestive system in humans • Construct and interpret a variety of food chains, identifying producers, predators and prey 	<p>ENQUIRY TYPES COVERED:</p> <ul style="list-style-type: none"> • Using secondary sources of information to answer questions • Grouping & classifying <p>WS KEY SKILLS:</p> <ul style="list-style-type: none"> • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Identifying differences, similarities or changes related to simple scientific ideas and processes. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions 	<p>mouth, oesophagus, stomach, small intestine, large intestine, rectum, anus, digestive system, digestion, food, plants, animals, food chain, food web, producer, consumer, predator, prey, food chain, food web, energy, herbivore, omnivore, carnivore, digestion, digestive system, mechanical process, chemical process, enzymes</p>

States of Matter

- Describe, 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 ($^{\circ}\text{C}$)
- identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

ENQUIRY TYPES:

- Grouping & classifying
- Observing changes over time
- Carrying out comparative and fair tests
- Finding things out using secondary sources of information

WS KEY SKILLS:

- Identifying differences, similarities or changes related to scientific ideas and processes
- Setting up simple practical enquiries, comparative and fair tests
- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data logger
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- Using straightforward scientific evidence to answer questions or to support their findings
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables

solid, liquid, hard, soft, pour, flow, pile, pool, surface, horizontal, runny, viscous, transparent, opaque, sticky, grain, powder, force, ice, water, melt, observe, measure, fair test, variable, shape, size, temperature, solid, liquid, melt, melting, freeze, freezing, solidify, solidifying, heating, cooling, states of matter, change of state, temperature, melting point, freezing point, process, gas, air, carbon dioxide, helium, oxygen, bubbles, empty, evaporate, wind, variable, control, vapour