

Science Lower KS2

Highlighted are the types of enquiry when working scientifically. These include: comparative / fair testing • research • observation over time • pattern seeking • identifying, grouping and classifying • problem solving

Y3/4					
Autumn	Spring	Summer	Autumn	Spring	Summer
Rocks Y3 1. I can compare and group rocks on the basis of their appearance and physical properties. Identifying, grouping, classifying 2. I can explore the different types of rocks in my local environment. Identifying, grouping, classifying 3. I can describe what a fossil is and how they are formed. Research 4. I can state that soil is made up of rocks and organic matter. I can investigate different soils. Identifying, grouping, classifying	Animals including Y3 humans (biology) 1. I can explain that humans get their nutrition from what they eat. I can name the nutrition groups within food Research Identifying, grouping, classifying 2 I will understand how to use a food label to know if the food will support good health Research, problem solving 3 I know what food groups support keeping bones healthy Research 4 I know why we need a skeleton and the importance of bones for support, protection and movement. Research 5. I can explain the importance of muscles for support, protection and movement. Research 6. I can set up a simple practical enquiry and communicate my results – Do people with longer legs jump further? Do people with longer	Plants Y3 (biology) I can explore the requirements for life and growth. (experiment throughout) 1. I can name the parts of a flowering plant and their functions . Research Identifying, grouping, classifying 2. I will know how water is transported in flowering plants (Carnation) Observation over time 3. I can investigate the life cycle of a flowering plant. Research 4. I understand how seeds can be distributed by flowering plants Research Identifying, grouping, classifying 5. I can explore the important parts that flowers play in the life cycle of plants including pollination, seed formation and seed dispersal.	Forces (magnets) Y3 (physics) 1. I can compare how different things move. Identifying, grouping, classifying. 2. I can plan and conduct a fair test to compare how objects move on different surfaces Pattern seeking. Comparative/fair test 3. I can explore how magnetic forces act at a distance Pattern seeking. Comparative/fair test 4. I can compare and group various everyday materials based on whether they are attracted to a magnet Identifying, grouping, classifying. 5. I can predict whether two magnets will attract or repel each other, depending on which poles are facing Problem solving I can record my findings using simple scientific vocabulary. I can use my results to draw simple conclusions.	Electricity Y4 (physics) 1. I can identify common appliances that use electricity. Identifying, grouping, classifying 2. I can name the components in a circuit and construct a simple circuit. Identifying, grouping, classifying 3. I can explain why the components in a circuit do not work – identifying if a lamp will light or not in a simple circuit. Problem solving Comparative/fair testing 4. I can explain how a switch works. Comparative/fair testing 5. I can define what an electrical conductor or insulator is and associate metals with being good conductors. (Investigation) Comparative/fair testing Pattern Seeking	Living things and habitats (biology) Y4 1 I can classify living things according to common characteristics. Identifying, grouping, classifying 2. What are the main characteristics of mammals . 3.. I can identify and research invertebrates. Identifying, grouping, classifying 4. I can research vertebrates. Identifying, grouping, classifying What are the five main groups of vertebrates? 4. I can use classification keys. Identifying, grouping, classifying 5.. I can research the danger that changing environments could have on animals. Research

	arms throw further? Pattern seeking. Comparative/fair test.		Investigation – number of paper clips a magnet can attract. Pattern seeking. Comparative/fair test.		
Outcome Pupils should explore different kinds of rocks and soils , including those in the local environment.	Outcome Importance of nutrition; introduction to the main body parts associated with the skeleton and muscles; finding out how different parts of the body have special functions	Outcome To learn the relationship between structure and function: the idea that every part has a job to do; explore questions that focus on the role of the roots and stem in nutrition and support; leaves for nutrition and flowers for reproduction.	Outcome Observe that magnetic forces can act without direct contact; explore the behaviour and everyday uses of different magnets	Outcome Simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices. Pupils should draw the circuit as a pictorial representation,	Outcome Children will create a decision tree to classify animals, they will use a given table to sort animals by their characteristics
Vocabulary Absorb, imprint, leaf litter, magma, man-made, metamorphic, molten, natural, nutrients, permeable, porous, prehistoric, preserve, pressure, properties, rock, sediment, soil, surface, volcano, weathered.	Vocabulary Nutrients, nutrition, carbohydrates, protein, fats, vitamins, minerals, water, fibre, skeletons, bones, joints, endoskeleton, exoskeleton, hydrostatic, invertebrates, muscles, contract relax.	Vocabulary Air, light, water, nutrients, soil, support, anchor, reproduction, pollination, dispersal, transportation, flower, energy, growth, seedling, carbon dioxide, oxygen, sugar, material, photosynthesis, chlorophyll	Vocabulary Force magnet contact repel non-magnetic iron north and south pole	Vocabulary Battery, bulb, buzzer, cell, circuit, component, conductor, current, device, electricity, energy, fuel, generate, insulator, mains, motor, power, source, switch, wires	Vocabulary Environment, flowering, nonflowering, plants, animals, vertebrates, fish, amphibians, reptiles, mammals, invertebrate, human impact, nature reserves, deforestation.
	Animals inc humans (biology) Y4 1.I can out and name the parts of the digestive system Identifying, grouping, classifying. 2.I can describe the function of the digestive system Identifying, grouping, classifying. 3.I can identify the different types of teeth in humans and their different functions Identifying, grouping, classifying. 4.I know why tooth hygiene is important – experiment Observations over time Comparative/fair testing	Animals including humans 1 I can classify organisms as producers, predators or prey? Identifying, grouping, classifying. 2. I can construct food chains from information. Research 3. I can compare teeth of herbivores and carnivores and suggest reasons for differences. Identifying, grouping, classifying. Problem Solving	States of matter Y4 1.I can identify a substance as either a solid, a liquid or a gas. I can compare and group materials together, according to whether they are solids, liquids or gases. Identifying, grouping, classifying. 2. I can observe that some materials change state when they are heated or cooled. (chocolate crisps) Comparative/fair testing	Sound Y4 (physics) 1. I can identify how sounds are made and associate them with something that vibrate. Research 2.I can recognise that vibrations from sound travel through a medium to the ear and start with particles vibrating. Comparative/fair testing. 3..I can observe that the length of time a material vibrates for depends on that material's physical properties. Comparative/fair testing. Pattern seeking - investigation	Light Y3 (physics) 1.I can state that darkness is an absence of light. Problem solving Shoebox experiment. 2.I can say that light is reflected from objects, and that opaque objects make the best reflectors. Comparative/fair testing. 3.I can describe why the sun can be dangerous to our eyes and how to protect them. Research 4.I can say that we have shadows because a shape blocks the light. Comparative/fair testing

	5. I can design a poster explaining the importance of brushing our teeth		<p>3. I can observe that some materials change state when they are heated or cooled. (observe water in different states.) Comparative/fair testing.</p> <p>4. I will understand the part played by evaporation and condensation in the water cycle. Research</p> <p>5. I can identify the rate of evaporation and temperature. Observations over time. (Hand print on paper towel- check before lunch, after, afternoon.)</p>	<p>4. I can measure the vibrations produced by instruments and find patterns between volume and vibrations. Pattern seeking</p> <p>5. I can explore ways to change the pitch of sound by creating an instrument with high and low sounds. Pattern seeking</p> <p>6. I can recognise that sounds get fainter as the distance from the source increases. Pattern Seeking</p>	<p>5. I can understand that a shadow has a similar shape as the object blocking the light. Pattern seeking</p> <p>6.. I can find patterns in the ways of changing the size of a shadow Pattern seeking</p>
	Outcome Introduction to the main body parts associated with the digestive system; explore questions that help pupils to understand their special functions.	Outcome Children will produce food chains for three different animals. They will be able to use scientific language to explain them.	Outcome Explore a variety of everyday materials and develop simple descriptions of the states of matter; observe water as a solid, a liquid and a gas; note the changes to water when it is heated or cooled and link to the water cycle	Outcome Explore and identify the way sound is made through vibration in a range of different musical instruments from around the world; and find out how the pitch and volume of sounds can be changed in a variety of ways.	Outcome To explore what happens when light reflects off a mirror or other reflective surfaces; shadows, how they are formed and what might cause the shadows to change.
	Vocabulary Digestive system, tongue, mouth, teeth, oesophagus, stomach, gall bladder, small intestine, pancreas, large intestine, liver, tooth, canine, incisor, molar, premolar, producer, consumer. Incisors, canines, molars	Vocabulary Producers, predator, prey, food chain, habitat, carnivore, herbivore, omnivore.	Vocabulary change collection condensation evaporation freeze gas solid liquid	Vocabulary Amplitude, decibel, electricity, energy, frequency, medium, pitch, power, sound waves, source, transmit, travel, vibrations, volume	Vocabulary Angle, bright, dark, dim, electricity, emits, light, mirror, opaque, product, reflects, shadows, source, sunglasses, surface, torch, translucent, transparent.