Science	Autumn	Spring 1	Spring 2	Summer 1	Summer 2
LKS2 YEAR A	States of matter (Year 4)	Electricity (Year 4)	Rocks (Year 3)	Animals Including humans (Year 4)	Light (Year 3)
Knowledge	-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 (°C) -identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	-identify common appliances that run on electricity -construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers -identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery -recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit -recognise some common conductors and insulators, and associate metals with being good conductors.	-compare and group together different kinds of rocks on the basis of their appearance and simple physical properties describe in simple terms how fossils are formed when things that have lived are trapped within rock recognise that soils are made from rocks and organic matter.	-describe the simple functions of the basic parts of the digestive system in humans -identify the different types of teeth in humans and their simple functions -construct and interpret a variety of food chains, identifying producers, predators an prey.	-recognise that they need light in order to see things and that dark is the absence of light -notice that light is reflected from surfaces -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 light source is blocked by an opaque object -find patterns in the way that the size of shadows change.
vocabulary	solid – iron, ice melt freeze liquid	appliances electricity electrical circuit cell wire bulb	appearance physical properties properties – hard/soft shiny/dull rough/smooth	human digestive system mouth tongue – mixers, moistens,	light see dark reflect surface natural

	evaporate condense gas container changing state - chocolate, butter, cream, heated heat cooled cool degrees Celsius (°C) thermometer water cycle - evaporate, evaporation, condense condensation Temperature - melting, melt ice - warm/cool water - warm/cool water vapour	buzzer danger electrical safety sign insulators wood rubber plastic glass conductors metal water switch open closed	absorbent/not absorbent fossils - sedimentary rock soils - rock, organic matter uses - buildings, grave stones grains crystals	saliva teeth - incisors - cutting, slicing canines - ripping, tearing molars - chewing, grinding oesophagus transports stomach acids enzymes small intestine - absorbs water vitamins large intestine - compacts carnivore herbivore brush floss not too many sweets food chain Sun producers prey predators	star Sun Moon shadow blocked solid artificial torch candle lamp sunlight dangerous protect eyes
Scientific skills	Grouping and classifying a variety of different materials. -Exploring the effect of temperature on substances such as chocolate,	-Observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some	Observing rocks, including those used in buildings and gravestones.	Comparing the teeth of carnivores and herbivores. -Suggesting reasons for differences.	Looking for patterns in what happens to shadows when the light source moves or the distance between

	butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party). - Researching the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. -Observing and recording evaporation over a period of time, such as a puddle in the playground or washing on a line. -Investigating the effect of temperature on washing drying or snowmen melting. -Additional suggestion from Lancashire for working scientifically opportunities which enhance learning and support using ICT. -This unit provides an ideal opportunity for using data logging equipment to detect/measure and compare temperatures.	materials can and some cannot be used to connect across a gap in a circuit.	-Exploring how and why they might have changed over time. -Using a hand lens or microscope to help them. -Identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. -Research and discuss the different kinds of living things whose fossils are found in sedimentary rock. -Explore how fossils are formed. -Explore different soils. -Identify similarities and differences between them. -Investigate what happens when rocks are rubbed together or what changes occur when they are in water. -Raise and answer questions about the way soils are formed.	-Finding out what damages teeth and how to look after them. -Drawing and discussing their ideas about the digestive system. -Comparing them with models or images.	the light source and the object changes.

LKS2 Science Rolling Programme

Science	Autumn	Spring 1	Spring 2	Summer 1	Summer 2
LKS2 YEAR B	Animals including humans (Year 3)	Sound (Year 4)	Forces and magnets (Year 3)	Plants (Year 3)	Living things and their habitats (Year 4)
Knowledge	-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	-identify how sounds are made, associating some of them with something vibrating -recognise that vibrations from sounds travel through a medium to the ear -find patterns between the pitch of a sound and 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.	-compare how things move on different surfaces -notice that some forces need contact between two objects, but magnetic forces can act at a distance -observe how magnets attract or repel each other and attract some materials and not others -compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials -describe magnets as having two poles -predict whether two magnets will attract or repel each other,	-identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers -explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant -investigate the way in which water is transported within plants -explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	-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.

			depending on which poles are facing.		
vocabulary	nutrition vitamins minerals fat protein carbohydrates fibre water skeletons - support, protection skull - brain ribs - heart, lungs movement joint muscles - movement, pull, contract, relax diet	vibrate vibration vibrating air medium ear hear sound volume pitch faint fainter loud louder string percussion woodwind brass insulate	force push pull open surface magnet magnetic attract repel magnetic poles North South	structure - flowering plants roots, stem/trunk, leaves, flowers requirements for life and growth - air, light, water, nutrients from soil, room to grow function - nutrients, support, reproduction makes its own food needs vary, fertiliser life cycle - flowers pollination, seed formation, seed dispersal	environment flowering non-flowering plants animals vertebrate environment Dangers! vertebrate - fish, amphibians, reptiles, birds, mammals invertebrates - snails, slugs, worms, spiders, insects plants - flowering plants (including grasses), non-flowering (including mosses and ferns human impact - positive - nature reserves, ecologically planned parks, garden ponds negative - population, development,

					litter, deforestation
Skills	Comparing and contrasting the diets of different animals (including their pets). -Decide ways of grouping them according to what they eat. -Researching different food groups and how they keep us healthy. -Designing meals based on what they find out. Identifying and grouping animals with and without skeletons. -Observing and comparing their movement. -Exploring ideas about what would happen if humans did not have skeletons.	Finding patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. -They might make ear muffs from a variety of different materials to investigate which provides the best insulation against sound. -They could make and play their own instruments by using what they have found out about pitch and volume.	Comparing how different things move and grouping them. -Raising questions and carrying out tests to find out how far things move on different surfaces. - Gathering and recording data to find answers to their questions. -Exploring the strengths of different magnets and finding a fair way to compare them. -Sorting materials into those that are magnetic and those that are not. -Looking for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another.	Comparing the effect of different factors on plant growth, for example the amount of light, the amount of fertiliser; -Discovering how seeds are formed by -Observing the different stages of plant cycles over a period of time; -Looking for patterns in the structure of fruits that relate to how the seeds are dispersed. -Observing how water is transported in plants, for example, by putting cut, white carnations into coloured water. -Observing how water travels up the stem to the flowers	Using and making simple guides or keys [sorting, grouping, comparing, classifying] to explore and identify local plants and animals. -Making a guide [sorting, grouping, comparing, classifying] to local living things. -Raising and answering questions based on their observations of animals. -What they have found out about other animals that they have researched.

			-Identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.		