Wharton CE Primary School
Science Progression Grid - 2021

Proverbs 22 v 6 Train up a child in the way they should go and they will not depart from it

The progression grid outlines the specific knowledge which pupils are expected to learn in each phase, along with the specific vocabulary which supports this understanding.

Scientific Enquiry – The skills every pupil needs to ensure they can be a scientist

	At EYFS:	At Year 1:	At Year 2	At Lower Key Stage Two:	At Upper Key Stage Two:
Skills	Children know about similarities and differences in relation to places, objects, materials and living things Children talk about the features of their own immediate environment and how environments might vary from one another Children describe shapes, spaces, and measures	Ask simple questions Identify and classify Use their observations and ideas to suggest answers to questions Gather and record data to help in answering questions	Ask simple questions and recognise that they can be answered in different ways Observe closely, using simple equipment Perform simple tests Identify and classify Use their observations and ideas to suggest answers to questions Gather and record data to help in answering questions	Ask relevant questions and use different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identify differences, similarities or changes related to simple scientific ideas and processes E9: use straightforward scientific evidence to answer questions or to support their findings	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Make measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions to set up further comparative and fair tests Report and present 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 Identify scientific evidence that has been used to support or refute ideas or arguments

Being a Scientist – Exemplifying scientific behaviours which ensure pupils know more and remember more					
Skills	**At EYFS:** Children make observations of animals and plants and explain why some things occur, and talk about changes Children use what they have learnt about media and materials in original ways, thinking about uses and purposes	**At year 1:** Enable pupils to experience and observe phenomena They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time They should begin to use simple scientific language to talk about what they have found out	**At Year 2:** Enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should continue to be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways.	**At lower key stage 2:** Pupils in years 3 and 4 should be given a range of scientific experiences to enable them to raise their own questions about the world around them. They should start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. They should begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done. They should also recognise when and how secondary sources might help might help them to answer questions that cannot be answered through practical investigations. Pupils should use relevant scientific language to discuss their ideas and communicate their findings.	**At Upper Key Stage Two:** Pupils in years 5 and 6 should use their science experiences to: explore ideas and raise different kinds of questions; select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. They should use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment. They should make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them; choose the most appropriate equipment to make measurements and explain how to use it accurately. They should decide how to record data from a choice of familiar approaches; look for different causal relationships in their data and identify evidence that refutes or supports their ideas. They should use their results to identify when further tests and observations might be needed; recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. They should use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time.

Science 1 Vocabulary	At EYFS:	Year 1:	Year 2	Lower Key stage 2	Upper Key stage 2
	questions answers equipment measure test explore observe compare notice patterns identify sort group order observe changes complexity describe similar/similarities different/differences	questions answers equipment gather measure record results evidence table chart test explore observe compare notice patterns secondary sources identify classify sort group order observe changes over time complexity using scientific diagrams and labels, describe similar/similarities different/differences	pictogram tally chart block diagram Venn diagram order link stop watch	types of scientific enquiry answer changes observations appearance present data/evidence/results keys bar charts data loggers magnifying glass microscope increase decrease classification keys, tables, scatter graphs, bar comparative tests fair tests careful accurate tables	Opinion fact variables accuracy precision degree of trust classification keys scatter graphs line graphs causal relationships support/refute

Biology: Animals including Humans					
Knowledge	**EYFS** **Make observations of animals and plants and explain why some things occur, and talk about changes.** **Living things** – Body parts of familiar animals. What owls and other birds eat. Nocturnal and diurnal animals. Adult and baby animals. Pet shop animals. How animals move. Sounds animals make.	**Year 1** Identify, describe, compare the structure of common animals and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Identify, name, draw and label the basic parts of the human body and say which part of the body links with each sense.	**Year 2** Notice that animals, including humans, have offspring which grow into adults Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Lower Key Stage 2:** 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. 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 and prey.	**Upper Key Stage 2:** Describe the changes as humans develop to old age. Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans.

Skills	**EYFS** Ask questions Demonstrate curiosity about the world around them. Make predictions with support or prompting, talk about what they think might happen based on their own experiences. Decide how to carry out an enquiry Respond to prompts to say what happened to objects, living things or events. Take measurements Use senses and simple equipment to explore the world around them, e.g. binoculars and magnifying glasses. Record data Talk to an adult about what has been found/found out. Present data Talk to an adult about what has been found/found out.	**Year 1:** Use observations to compare and contrast animals at first hand or through videos and photographs Describe how they identify and group animals Group animals according to what they eat Use their senses to compare different textures, sounds and smells.	**Year 2:** Observe, through video or first-hand observation and measurement, how different animals, including humans, grow Ask questions about what things animals need for survival and what humans need to stay healthy Suggest ways to find answers to their questions.	**Lower Key Stage 2:** Identify and group animals with and without skeletons and observe and compare their movement Explore ideas about what would happen if humans did not have skeletons Compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat Research different food groups and how they keep us healthy and design meals based on what they find out. Compare the teeth of carnivores and herbivores, and suggest reasons for differences Find out what damages teeth and how to look after them Draw and discuss their ideas about the digestive system and compare them with models or images.	**Upper Key Stage 2:** Research the gestation periods of other animals and compare them with humans Find out and record the length and mass of a baby as it grows. Explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.

Animals Vocabulary	Natural Wild Wildlife native. Places Habitats Woodland Desert Ocean Jungle Arctic. Microhabitats: - Log, tone, tree, dead leaves, soil. Seaside	basic needs water food air breathing survival exercise food types fruit and vegetable bread, rice, potato, pasta milk and dairy foods foods high in fat or sugar meat, fish, egg, beans hygiene clean wash healthy medicine drugs	offspring babies young grow change adults older/younger baby/toddler/child/teenager	digestive system nutrition nutrients mouth teeth canines incisor molar pre-molar saliva tongue rip, tear, chew, grind, cut oesophagus (gullet) stomach small intestine large intestine rectum anus carnivore herbivore ominvore producer consumer predator prey	circulatory system heart blood blood vessels pumps oxygen carbon dioxide lungs water diet exercise lifestyle life cycle reproduction sexual asexual mammal amphibian insect bird fish reptile eggs live young

Biology: Plants					
Knowledge	**EYFS** Design practical, attractive environments, for example, taking care of the flowerbeds or organising equipment outdoors.	**Year 1** Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees	**Year 2** Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	**Lower Key Stage 2** Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers Know 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 Observe and know the way in which water is transported within plants Know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	
skills		Observe closely, using magnifying glasses- including trees - compare and contrast plants Describe how they were able to identify and group them, and draw diagrams of different plants Keep records of how plants have changed over time, for example the leaves falling off trees and buds opening.	Observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth Set up a comparative test to show that plants need light and water to stay healthy.	Compare the effect of different factors on plant growth Look for patterns in the structure of fruits that relate to how example, the amount of light, the amount of fertiliser Discover how seeds are formed by observing the different stages of plant life cycles over a period of time putting cut, white carnations into coloured water and the seeds are dispersed. Observe how water is transported in plants, for example, by observing how water travels up the stem to the flowers.	

Plants vocabulary		Year 1 names of locally found wild plants, garden plants, flowering plants, and trees. leaf/leaves flower blossom petal fruit berry root bulb seed trunk branch stem bark stalk vegetable names of flowers grown names of vegetables grown	Year 2 seeds bulbs fully grown water light damp/wet/dry dark/light hot/warm/cool/cold use comparatives e.g. hotter grow/growth healthy shoot seedling wither/limp die dry/crispy soil earth	Lower Key Stage 2 part role leaf/leaves flower blossom petal fruit berry root bulb seed trunk branch stem bark stalk water light air nutrients soil fertiliser damp/wet/dry dark/light hot/warm/cool/cold use comparatives e.g. hotter grow/growth healthy transported life cycle pollination seed formation seed dispersal	

Biology: Living things and their habitats					
Knowledge			**Year 2** The difference between living, dead and that which was never alive. What a habitat is, how these can be the same or different, and how some animals and plants suit one habitat more than another The names of key plants and animals from a variety of habitats and adaptations Know how these animals and plant depend on each other for survival. Understand interdependency and importance of a food chains, explained thorough diagrams, written and spoken presentations	**Lower Key stage 2** 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	**Upper Key Stage 2** Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics.

skills			**Year 2:** Sort and classify things according to whether they are living, dead or were never alive, and recording their findings using charts. Describe how they decided where to place things, exploring questions such as: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions Describe the conditions in different habitats and micro-habitats Construct a simple food chain including humans	**Lower Key Stage 2:** Use and make simple guides or keys to explore and identify local plants and animals Make a guide to local living things Raise and answer questions based on their observations of animals and what they have found out about other animals that they have researched.	**Upper Key stage 2:** Observe and compare the life cycles of plants and animals in their local environment with other plants and animals and differences around the world Ask pertinent questions and suggest reasons for similarities Observe changes in an animal over a period of time (for grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulb. comparing how different animals reproduce and grow. Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics.

Living things vocabulary			**Year 2:** living dead never been alive move grow feed have offspring/young/babies name local habitats e.g. a pond e.g. a woodland e.g. a meadow name micro-habitats e.g. under log e.g. on stony path e.g. under bushes damp/wet/dry dark/light hot/warm/cool/cold suited/suitable basic needs depend food food chain shelter	**Lower Key Stage 2:** classification keys environment fish amphibians reptiles birds mammals vertebrates invertebrates name some invertebrates human impact name positive human impact name negative human impact	**Upper Key Stage 2:** organism micro-organisms fungus mushrooms arachnid mollusc insect crustacean

Biology: Inheritance and evolution					
Knowledge					**Upper Key Stage 2:** Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
Skills					Observe and raising questions about local animals and how they are adapted to their environment Compare how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels Analyse the advantages and disadvantages of specific adaptations, such as being on two feet rather than four, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.
Vocabulary					evolution suited adapted/adaptation characteristics vary/variation inherit/inheritance

Chemistry – Everyday Materials (Inc. Rocks)					
Knowledge		Year 1: Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Year 2: Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Lower Key Stage 2: 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. 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.	Upper Key Stage 2: Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic Demonstrate that dissolving, mixing and changes of state are reversible changes Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Skills		**Year 1:** Performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'	**Year 2** Comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs) Observe closely, identifying and classifying the uses of different materials, and recording their observations.	**Lower Key Stage 2:** Observe rocks, including those used in buildings and gravestones, and explore how and why they might have changed over time; Use a hand lens to help them to 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 and explore how fossils are formed. Explore different soils, identify similarities and differences between them and 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. Grouping and classifying a variety of materials; Exploring the effect of temperature on substances such as chocolate, butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party). Research the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. Observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing drying or snowmen melting.	**Upper Key Stage 2:** Carrying out tests to answer questions, for example, 'Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it melting, or for making blackout curtains?' Compare materials in order to make a switch in a circuit Observe and compare the changes that take place, for example, when burning different materials or baking bread or cakes. Research and discuss how chemical changes have an impact on our lives, for example, cooking, and discuss the creative use of new materials such as polymers, super-sticky and super-thin materials.

Materials Vocabulary		Year 1: object material wood plastic glass metal water rock brick paper fabrics elastic foil card/cardboard rubber wool clay hard soft stretchy stiff bendy/floppy waterproof absorbent breaks/tears rough smooth shiny dull see through not see through	Year 2: suitable/unsuitable use/useful property rigid flexible strong/weak reflective non reflective transparent opaque translucent shape changed push/pushing pull/pulling twist/twisting squash/squashing bend/bending stretch/stretching pinch/pinching poke/poking roll/rolling squeeze/squeezing	Lower Key Stage 2: states of matter solid liquid gas powder grain/granular crystals change state ice/water/steam water vapour heated/heating cooled/cooling temperature degrees celsius melt freeze solidify melting point molten boil boiling point evaporate/evaporation condense/condensation water cycle precipitation transpiration	Upper Key Stage 2: solubility electrical conductivity thermal conductivity dissolve solution soluble insoluble solute solvent particle mix/mixture filtering sieving reversible changes new material not usually reversible burning gas given off rusting

Physics Forces and magnets

Knowledge				**Lower Key Stage 2** 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, depending on which poles are facing.	**Upper Key Stage 2** Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.
Skills				**Lower Key Stage 2:** Compare how different things move and group them Raise questions and carry out tests to find out how far things move on different surfaces and gathering and recording data to find answers their questions; Explore the strengths of different magnets and find a fair way to compare them Sort materials into those that are magnetic and those that are not; Look for patterns in the way that magnets behave in relation to each other and what might affect this: the strength of the magnet or which pole faces another Identify how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.	**Upper Key Stage 2:** Explore falling paper cones or cup-cake cases, and design and make a variety of parachutes and carry out fair tests to determine which designs are the most effective. Explore resistance in water by making and testing boats of different shapes Design and make products that use levers, pulleys, gears and/or springs and explore their effects.

Vocabulary				Force pull/pulling non-contact force magnet bar magnet button magnet attract magnetic material iron non-magnetic material north pole south pole poles steel metal repel horseshoe magnet ring magnet strength magnetic force contact force push/pushing	Fall Gravity water resistance friction moving surfaces mechanisms levers pulleys gears transfers air resistance Earth

Physics : Seasonal changes & Light					
Knowledge		**Year 1:** Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies.		**Lower Key Stage 2:** 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.	**Upper Key Stage 2:** Know that light travels in straight lines Use this to explain that objects are seen because they reflect light into the eye Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Skills		**Year 1:** Make tables and charts about the weather; and make displays of what happens in the world around them, including day length, as the seasons change.		**Lower Key Stage 2:** Looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.	**Upper Key Stage 2:** Decide where to place rear-view mirrors on cars; and shadows by using shadow puppets design and making a periscope and use the idea that light appears to travel in straight lines to explain how it works. Investigate the relationship between light sources, objects, objects looking bent in water and coloured filters (they do extend their experience of light by looking a range of phenomena including rainbows, colours on soap bubbles, not need to explain why these phenomena occur).
Seasonal change and Light Vocabulary		**Year 1** season spring summer autumn winter weather hot/warm cool/cold sun/sunny cloud/cloudy wind/windy rain/rainy	**Year 1 continued….** snow/snowing hail/hailing sleet frost fog/mist ice/icy rainbow thunder lightning storm light/dark day/night	**Lower Key Stage 2:** light light source names of light sources e.g. torch dark/darkness reflect reflective mirror shadow block direct/ direction transparent opaque translucent	**Upper Key Stage 2:** Absorb filter refraction reflection light source spectrum object Rainbow Shadows Travels mirrors straight periscope

Physics : Electricity					
Knowledge				**Lower Key Stage 2:** 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.	**Upper Key Stage 2:** 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.
Skills				**Lower Key Stage 2**: Observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.	**Upper Key Stage 2:** Systematically identify the effect of changing one component at a time in a circuit; designing and making a set of traffic lights, a burglar alarm or some other useful circuit.

Electricity Vocabulary				electricity appliances/device mains plug electrical circuit complete circuit circuit diagram circuit symbol components cell battery positive/negative connect/connection loose connection short circuit wire crocodile clip bulb bright/dim switch buzzer motor fast(er)/slow(er) conductor insulator metal/non metal	terminal volume voltage current resistance

Physics: Sound & Earth and Space					
Knowledge				**Lower Key Stage 2:** 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.	**Upper Key Stage 2:** Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe the movement of the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately spherical bodies Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.
Skills				**Lower Key Stage 2:** Finding patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses Make earmuffs from a variety of different materials to investigate which provides the best insulation against sound Make and play their own instruments by using what they have found out about pitch and volume.	**Upper Key Stage 2:** Compare the time of day at different places on the Earth through internet links and direct communication; creating simple models of the solar system; Construct simple shadow clocks and sundials, calibrated to show midday and the start and end of the school day Find out why some people think that structures such as Stonehenge might have been used as astronomical clocks.

Sound & Earth And Space Vocabulary				Sound sound source noise vibrate/vibration travel solid/liquid/gas pitch tune high/low volume loud/quiet fainter muffle strength of vibrations insulation instrument percussion strings brass woodwind tuned instrument	Earth planets Sun solar system Moon celestial body sphere/spherical rotate/rotation spin night and day Mercury Venus Mars Jupiter Saturn Uranus Neptune Pluto 'dwarf' planet orbit geocentric model heliocentric model shadow clocks sundials astronomical clocks