

<u>Unit</u>	<u>Year Group Objectives</u>	<u>Working Scientifically Investigation (Enquiry type covered)</u> , Suggestions for demonstrating knowledge, suggestions for applying knowledge in familiar contexts & key vocabulary.
Plants	<p><u>Year 1:</u> Can I identify and name some common wild and garden plants? (including deciduous and evergreen trees) Can I identify and describe the structure of some flowering plants and trees?</p> <p><u>Year 2:</u> Can I observe and describe how seeds and bulbs grow into plants? Can I find out what plants need to stay healthy?</p>	<p><u>Year 1:</u></p> <ul style="list-style-type: none"> • Plants/Leaf investigation (Observation over time) • Can name trees and other plants that they see regularly • Can describe some of the key features of these trees and plants e.g. the shape of the leaves, the colour of the flower/blossom • Can point out trees which lost their leaves and those that kept them the whole year • Can point to and name the parts of a plant, recognising that they are not always the same e.g. leaves and stems may not be green • Can sort and group parts of plants using similarities and differences • Can use simple charts etc. to identify plants • Can collect information on features that change during the year • Can use photographs to talk about how plants change over time • Key Vocabulary: Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, names of trees in the local area, names of garden & wild flowering plants in the local area <p><u>Year 2:</u></p> <ul style="list-style-type: none"> • Plant growth in different conditions investigation (Observation over time and Comparative testing) • Can describe how plants that they have grown from seeds and bulbs have developed over time • Can identify plants that grew well in different conditions • Can spot similarities and difference between bulbs and seeds • Can nurture seeds and bulbs into mature plants identifying the different requirements of different plants • Key Vocabulary: As for year 1 plus - light, shade, sun, warm, cool, water, grow, healthy.

	<p><u>Year 3:</u></p> <p>Can I identify and describe the functions of different parts of flowering plants? (including trees)</p> <p>Can I Understand what plants need to survive and how these differs between plants</p> <p>Can I investigate water transportation within plants?</p> <p>Can I explore the lifecycle of flowering plants?</p>	<p><u>Year 3:</u></p> <ul style="list-style-type: none"> • Plant stem investigation (Observation over time and Comparative & fair testing) • Can explain the function of the parts of a flowering plant • Can describe the life cycle of flowering plants, including pollination, seed formation, seed dispersal, and germination • Can give different methods of pollination and seed dispersal, including examples • Can explain observations made during investigations • Can look at the features of seeds to decide on their method of dispersal • Can draw and label a diagram of their created flowering plant to show its parts, their role and the method of pollination and seed dispersal • Key Vocabulary: Photosynthesis, pollhen, insect/wind pollination, seed formation, seed dispersal – wind dispersal, animal dispersal, water dispersal
<p>Living Things and their Habitats</p>	<p><u>Year 2:</u></p> <p>Can I compare things that are living, dead and things that have never been alive?</p> <p>Can I identify that most living things live in habitats that they are suited to? Can I describe how different habitats provide for the basic needs of animals and humans?</p> <p>Can I identify plants and animals in their habitats/microhabitats?</p> <p>Can I use a simple food chain to identify and name different sources of food?</p>	<p><u>Year 2:</u></p> <ul style="list-style-type: none"> • Nature spotters investigation (Identifying and Classifying) • Can find a range of items outside that are living, dead and never lived • Can name a range of animals and plants that live in a habitat and micro-habitats that they have studied • Can talk about how the features of these animals and plants make them suitable to the habitat • Can talk about what the animals eat in a habitat and how the plants provide shelter for them • Can construct a food chain that starts with a plant and has the arrows pointing in the correct direction • Can sort into living, dead and never lived • Can give key features that mean the animal or plant is suited to its micro-habitat • Using a food chain can explain what animals eat • Can explain in simple terms why an animal or plant is suited to a habitat e.g. the caterpillar cannot live under the soil like a worm as it needs fresh leaves to eat; the seaweed we found on the beach cannot live in our pond because it is not salty • Key Vocabulary: Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, names of local habitats e.g. pond, woodland etc., names of micro-habitats e.g. under logs, in bushes etc.

Year 4:

Can I recognise that living things can be grouped in a variety of ways?

Can I use classification keys to identify living things?

Can I recognise the impact of changing environments on living things?

Year 5:

Can I describe the differences in lifecycles? (of a mammal, an amphibian, an insect and a bird)

Can I describe the process of reproduction in some plants and animals?

Year 6:

Can I describe how living things are classified into broad groups? (including microorganisms, plants and animals)

Can I give reasons for classifying plants and animals based on specific characteristics?

Year 4:

• **Living Local Survey Investigation (Identifying & Classifying)**

- Can name living things living in a range of habitats, giving the key features that helped them to identify them
- Can give examples of how an environment may change both naturally and due to human impact
- Can keep a careful record of living things found in different habitats throughout the year (diagrams, tally charts etc.)
- Can use classification keys to identify unknown plants and animals
- Can present their learning about changes to the environment in different ways e.g. campaign video, persuasive letter
- **Key Vocabulary:** Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate

Year 5:

• **Life cycle research task (Research)**

- Can draw the life cycle of a range of animals identifying similarities and differences between the life cycles
- Can explain the difference between sexual and asexual reproduction and give examples of how plants reproduce in both ways
- Can present their understanding of the life cycle of a range of animals in different ways e.g. drama, pictorially, chronological reports, creating a game
- Can identify patterns in life cycles
- Can compare two or more animal life cycles studied
- Can explain how a range of plants reproduce asexually
- **Key Vocabulary:** Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings

Year 6:

• **Outdoor keys investigation (Identifying & Classifying)**

- Can give examples of animals in the five vertebrate groups and some of the invertebrate groups

		<ul style="list-style-type: none"> • Can give the key characteristics of the five vertebrate groups and some invertebrate groups • Can compare the characteristics of animals in different groups • Can give examples of flowering and non-flowering plants • Can use classification materials to identify unknown plants and animals • Can create classification keys for plants and animals • Can give a number of characteristics that explain why an animal belongs to a particular group • Key Vocabulary: Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and non-flowering
<p>Animals including Humans</p>	<p><u>Year 1:</u></p> <p>Can I identify and name some common animals? (including fish, amphibians, reptiles, birds and mammals)</p> <p>Can I identify and name animals that are carnivores, herbivores and omnivores?</p> <p>Can I describe and compare the structure of some common animals? (including fish, amphibians, reptiles, birds and mammals)</p> <p>Can I identify, name, draw and label the parts of the human body and link body parts to the correct senses?</p>	<p><u>Year 1:</u></p> <ul style="list-style-type: none"> • Body parts investigation (Identifying and Classifying) • Scientist Study- Steve Irwin (Research) <p><u>Animals</u></p> <ul style="list-style-type: none"> • Can name a range of animals which includes animals from each of the vertebrate groups • Can describe the key features of these named animals • Can label key features on a picture/diagram • Can write descriptively about an animal • Can write a What am I? riddle about an animal • Can describe what a range of animals eat • Make first hand close observations of animals from each of the groups • Compare two animals from the same or different group • Classify animals using a range of features • Identify animals by matching them to named images • Classify animals according to what they eat <p><u>Humans</u></p> <ul style="list-style-type: none"> • Can play and lead 'Simon says'. • During PE lessons, can follow instructions involving parts of the body • Can label parts of the body on pictures and diagrams • Can explore objects using different senses • Can use first-hand close observations to make detailed drawings • Can name body parts correctly when talking about measurements and comparisons • 'My arm is x straws long.'

Year 2:

Can I notice that animals, including humans, have offspring which grow into adults?

Can I research and describe the basic needs of animals for survival? (water, food and air)

Can I explain the importance of exercise, hygiene and eating healthily for humans?

Year 3:

- 'My arm is x straws long and my leg is y straws long. My leg is longer than my arm.'
- 'We both have hands, but his are bigger than mine.'
- 'These people have brown eyes and these have blue.'
- Can talk about their findings from investigations using appropriate vocabulary
- 'My fingers are much better at feeling than my toes'
- 'We found that the crisps all taste the same.'
- **Key Vocabulary:** Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, Parts of the body including those linked to PSHE teaching (see [joint document produced by the ASE and PSHE association](#)) Senses, touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue
N.B. Although primarily fingers and hands, children should learn that we can feel objects with many parts of our bodies.

Year 2:

- **Hand spans investigation (Comparative testing and Pattern Seeking)**
- Can describe how animals including humans have offspring which grow into adults, using the appropriate names for the stages
- Can state the basic needs of animals, including humans, for survival.
- Can state the importance for humans of exercise, eating the right amounts of different types of food and hygiene.
- Can name foods in each section of the Eatwell guide
- Can describe, including using diagrams, the life cycle of some animals, including humans, and their growth to adults e.g. by creating a life cycle book for a younger child
- Can measure/observe how animals, including humans, grow.
- Show what they know about looking after a baby/animal by creating a parenting/pet owners' guide
- Explain how development and health might be affected by differing conditions and needs being met/not met.
- **Key Vocabulary:** Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples - meat, fish, vegetables, bread, rice, pasta)

Can I identify the right types of nutrition for animals, including humans, and that they cannot make their own food? (they get nutrition from what they eat).
Can I identify that humans and some other animals have skeletons for support, protection and movement?

Year 4:

Can I describe some parts and functions of the digestive system?
Can I identify types and functions of different teeth in humans?
Can I construct and interpret a variety of food chains? (identifying producers, predators and prey)

Year 5:

Can I describe the changes as humans develop to old age?

Year 3:

- **Skeleton investigation (Ask relevant questions and use different types of scientific enquiries to answer them)**
- Can name the nutrients found in food
- Can state that to be healthy we need to eat the right types of food to give us the correct amount of these nutrients
- Can name some bones that make up their skeleton giving examples that support, help them move or provide protection
- Can describe how muscles and joints help them to move
- Can classify food into those that are high or low in particular nutrients
- Can answer their questions about nutrients in food based on their gathered evidence
- Can talk about the nutrient content of their daily plan
- Use their data to look for patterns (or lack of) when answering their enquiry question
- Can give similarities e.g. they all have joints to help the animal move, and differences between skeletons
- **Key Vocabulary:** Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints

Year 4:

- **Teeth in liquid investigation (Comparative & fair testing and Observation over time)**
- Can sequence the main parts of the digestive system
- Can draw the main parts of the digestive system onto a human outline
- Can describe what happens in each part of the digestive system
- Can point to the three different types of teeth in their mouth and talk about their shape and what they are used for
- Can name producers, predators and prey within a habitat
- Can construct food chains
- Can use diagrams or a model to describe the journey of food through the body explaining what happens in each part.
- Can record the teeth in their mouth (make a dental record)
- Can explain the role of the different types of teeth

Year 6:

Can I identify and name the main parts of the human circulatory system?

Can I describe the functions of the heart, blood vessels and blood?

Can I recognise the impact of diet, exercise, drugs and lifestyle on the way our bodies function?

Can I describe the ways in which nutrients and water are transported within animals, including humans?

- Can explain how the teeth in animal skulls show they are carnivores, herbivores or omnivores.
- Can create food chains based on research
- **Key Vocabulary:** Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain

Year 5:

- **Growth Survey investigation -arm span/ foot length, etc. (Pattern seeking)**
- Can explain the changes that takes place in boys and girls during puberty
- Can explain how a baby changes physically as it grows and also what it is able to do
- Scientist Study – Jane Goodall (Research)
- **Key Vocabulary:** Puberty: the vocabulary to describe sexual characteristics

Year 6:

- **Heart rate investigation DATA LOGGERS (Comparative & fair testing and observation over time)**
- Can draw a diagram of the circulatory system and label the parts and annotate it to show what the parts do
- Produces a piece of writing that demonstrates the key knowledge e.g. explanation text, job description of the heart
- Use the role play model to explain the main parts of the circulatory system and their role
- Can use subject knowledge about the heart whilst writing conclusions for investigations
- Can explain both the positive and negative effects of diet, exercise, drugs and lifestyle on the body
- Present information e.g. in a health leaflet describing impact of drugs and lifestyle on the body
- **Key Vocabulary:** Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs and lifestyle

<p>Light</p>	<p><u>Year 3:</u></p> <p>Can I recognise that light is needed to see things? (and that dark is the absence of light)</p> <p>Can I observe light reflection on surfaces?</p> <p>Can I recognise the dangers of light from the Sun and how to protect myself?</p> <p>Can I recognise how shadows are formed? (when the light from a light source is blocked by an opaque object)</p> <p>Can I find patterns in the changes of shadow size?</p> <p><u>Year 6:</u></p> <p>Can I recognise that light appears to travel in straight lines?</p> <p>Can I explain that objects are seen because they give out or reflect light into the eye?</p> <p>Can I explain that we see things because light travels from light sources to our eyes/from light sources to objects and then our eyes?</p> <p>Can I explain why shadows have the same shape as the objects that cast them?</p>	<p><u>Year 3:</u></p> <ul style="list-style-type: none"> • Shadow investigation (Observation and Identifying and classifying) • Can describe how we see objects in light and can describe dark as the absence of light • Can state that it is dangerous to view the sun directly and state precautions used to view the sun, for example in eclipses • Can define transparent, translucent and opaque • Can describe how shadows are formed by objects blocking light. • Can describe patterns in visibility of different objects in different lighting conditions and predict which will be more or less visible as conditions change • Can clearly explain, giving examples, that objects are not visible in complete darkness • Can describe and demonstrate how shadows are formed by blocking light • Can describe, demonstrate and make predictions about patterns in how shadows vary • Key Vocabulary: Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous <p><u>Year 6:</u></p> <ul style="list-style-type: none"> • Investigating shadows investigation (Pattern Seeking) • Can describe with diagrams or models as appropriate how light travels in straight lines either from sources or reflected from other objects into our eyes. • Can describe with diagrams or models as appropriate how light travels in straight lines past translucent or opaque objects to form a shadow of the same shape • Can explain how evidence from enquiries shows that light travels in straight lines • Can predict and explain with diagrams or models as appropriate how the path of light rays can be directed by reflection to be seen, for example reflection in car rear view mirrors or in a periscope. • Can predict and explain with diagrams or models as appropriate how the shape of shadows can be varied. • Key Vocabulary: As for year 3 plus straight lines, light rays.
<p>Materials</p>	<p><u>Year 1:</u></p> <p>Can I identify objects and the materials they are made from?</p>	<ul style="list-style-type: none"> • <u>Year 1:</u> • Materials investigation (Pattern Seeking and Identifying & Classifying) • Can label a picture or diagram of an object made from different materials • Can describe the properties of different materials • Can sort objects and materials using a range of properties

Can I identify and **name** a variety of everyday materials?
(including wood, plastic, glass, metal, water and rock)
Can I describe some properties of everyday materials?
Can I compare and group some everyday materials?
(based on their properties).

Year 2:

Can I identify and compare the **suitability** of a variety of everyday materials?
Can I explore how the shape of solid objects can be changed? (by squashing, bending, twisting and stretching)

- Can choose an appropriate method for testing an object for a particular property
- Can use their test evidence to answer the questions about properties e.g. Which cloth is the most absorbent?
- **Key Vocabulary:** Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, 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:**
- **Waterproof materials investigation (Comparative testing)**
- Can name an object, say what material it is made from, identify its properties and make a link between the properties and a particular use
- Can label a picture or diagram of an object made from different materials
- For a given object can identify what properties a suitable material needs to have
- Whilst changing the shape of an object can describe the action used
- Can use the words flexible and/or stretchy to describe materials that can be changed in shape and stiff and/or rigid for those that cannot
- Can recognise that a material may come in different forms which have different properties
- Can sort materials using a range of properties
- Can explain using the key properties why a material is suitable or not suitable for a purpose
- Can begin to choose an appropriate method for testing a material for a particular property
- Can use their test evidence to select appropriate material for a purpose e.g. Which material is the best for a rain hat?
- **Key Vocabulary:** Names of materials – increased range from year 1. Properties of materials – as for year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing. Bend/bending, stretch/stretching

Year 4:

Can I compare and group solids, liquids or gases?

Can I observe that some materials change state when heated and cooled? Can I measure/research the temperature (in °C) that materials change state when heated or cooled?

Can I identify the roles of evaporation and condensation within the water cycle and link the rate of evaporation with temperature?

Year 5:

Can I compare and group materials based on their properties? (including harness, solubility, transparency, conductivity-electrical and thermal- and response to magnets)

Can I describe how some materials can dissolve in liquid to form a solution, and how to recover a substance from a solution?

Can I use my knowledge of solids, liquids and gases to decide how to separate materials? (including through filtering, sieving and evaporating)

Can I give reasons for the uses of everyday materials, supported with comparative and fair testing? (including metals, wood and plastic)

Can I demonstrate that dissolving, mixing and changes of state are reversible changes?

• Year 4:

• **Measuring temperature Investigation DATA LOGGERS. (Observation over time and Pattern Seeking)**

- Can create a concept map, including arrows linking the key vocabulary
- Can name properties of solids, liquids and gases
- Can give everyday examples of melting and freezing
- Can give everyday examples of evaporation and condensation
- Can describe the water cycle
- Can give reasons to justify why something is a solid liquid or gas
- Can give examples of things that melt/freeze and how their melting points vary
- From their observations, can give the melting points of some materials
- Using their data, can explain what affects how quickly a solid melts
- Can measure temperatures using a thermometer
- Can explain why there is condensation on the inside the hot water cup but on the outside of the icy water cup
- From their data, can explain how to speed up or slow down evaporation
- Can present their learning about the water cycle in a range of ways e.g. diagrams, explanation text, story of a water droplet
- **Key Vocabulary:** Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle

Year 5:

• **Insulation layers Investigation (Identifying & Classifying and Observation over time)**

- Can use understanding of properties to explain everyday uses of materials. For example, how bricks, wood, glass and metals are used in buildings
- Can explain what dissolving means, giving examples
- Can name equipment used for filtering and sieving
- Can use knowledge of liquids, gases and solids to suggest how materials can be recovered from solutions or mixtures by evaporation, filtering or sieving
- Can describe some simple reversible and non-reversible changes to materials, giving examples
- Can create a chart or table grouping/comparing everyday materials by different properties

	<p>Can I explain that some changes form new materials, and that this is not always reversible? (including changes with burning, and acid on bicarbonate of soda)</p>	<ul style="list-style-type: none"> • Can use test evidence gathered about different properties to suggest an appropriate material for a particular purpose • Can group solids based on their observations when mixing them with water • Can give reasons for choice of equipment and methods to separate a given solution or mixture such as salt or sand in water • Can explain the results from their investigations involving dissolving and non-reversible change • Key Vocabulary: Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/non-reversible change, burning, rusting, new material
<p>Electricity</p>	<p><u>Year 4:</u></p> <p>Can I identify some electrical appliances?</p> <p>Can I construct a simple electrical circuit and name its basic parts? (including cells, wires, bulbs, switches and buzzers)</p> <p>Can I identify whether or not a lamp will light?</p> <p>Can I recognise that a switch opens and closes a circuit and use this to predict if a bulb will light?</p> <p>Can I recognise some common conductors and insulators? (and associate metals with being good conductors)</p> <p><u>Year 6:</u></p> <p>Can I associate the brightness of a lamp or the volume of a buzzer with the number of cells/voltage used?</p>	<p><u>Year 4:</u></p> <ul style="list-style-type: none"> • Conductors Investigation (I identifying & classifying, Pattern Seeking) • Can name the components in a circuit • Can make electric circuits • Can control a circuit using a switch • Can name some metals that are conductors • Can name materials that are insulators • Can communicate structures of circuits using drawings which show how the components are connected • Use classification evidence to identify that metals are good conductors and non-metals are insulators • Can incorporate a switch into a circuit to turn it on and off • Can connect a range of different switches identifying the parts that are insulators and conductors • Can add a circuit with a switch to a DT project and can demonstrate how it works • Can give reasons for choice of materials for making different parts of a switch • Can describe how their switch works • Key Vocabulary: Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol <p><i>N.B. Children in year 4 do not need to use standard symbols as this is taught in year 6</i></p>

	<p>Can I compare and explain variations in how parts of a circuit function? (including brightness of bulbs, loudness of buzzers and the position of on/off switches)</p> <p>Can I use circuit symbols accurately?</p>	<p><u>Year 6:</u></p> <ul style="list-style-type: none"> • Bulb brightness investigation (Pattern seeking Comparative & fair testing) • • <u>Key Vocabulary:</u> Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage <p><i>N.B. Children do not need to understand what voltage is but will use volts and voltage to describe different batteries. The words cells and batteries are now used interchangeably</i></p>
<p>Forces (and Magnets)</p>	<p><u>Year 3:</u></p> <p>Can I compare how things move on different surfaces?</p> <p>Can I notice that magnetic forces can act at a distance? (whilst recognising that some forces need contact between two objects)</p> <p>Can I observe how magnets attract or repel each other, and attract some materials and not others?</p> <p>Can I compare and group everyday materials based on magnetism and identify magnetic materials?</p> <p>Can I describe magnets as having two poles?</p> <p>Can I predict whether two magnets will attract and repel each other, based on which poles are facing?</p> <p><u>Year 5:</u></p> <p>Can I explain the force of gravity?</p>	<p><u>Year 3:</u></p> <ul style="list-style-type: none"> • Cars down ramps investigation (Comparative testing and Pattern Seeking) • What is the strongest magnet? Investigation (Comparative and fair testing) • Can give examples of forces in everyday life • Can give examples of objects moving differently on different surfaces • Can name a range of types of magnets and show how the poles attract and repel • Can draw diagrams using arrows to show the attraction and repulsion between the poles of magnets • Can use their results to describe how objects move on different surfaces • Can use their results to make predictions for further tests e.g. it will spin for longer on this surface than that, but not as long as it spun on that surface • Can use classification evidence to identify that some metals but not all are magnetic • Through their exploration they can show how like poles repel and unlike poles attract and name unmarked poles • Can use test data to rank magnets • <u>Key Vocabulary:</u> Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole <p><u>Year 5:</u></p> <ul style="list-style-type: none"> • Water resistance investigation (Pattern Seeking and Comparative & Fair testing)

	<p>Can I identify the effects of air resistance, water resistance and friction, that act between moving surfaces?</p> <p>Can I recognise that some mechanisms, allow a smaller force to have a greater effect? (levels, pulleys and gears)</p>	<ul style="list-style-type: none"> • Spinners/air resistance investigation (Pattern Seeking and Comparative & Fair testing) • Can demonstrate the effect of gravity acting on an unsupported object • Can give examples of friction, water resistance and air resistance • Can give examples of when it is beneficial to have high or low friction, water resistance and air resistance • Can demonstrate how pulleys, levers and gears work • Can explain the results of their investigations in terms of the force, showing a good understanding that as the object tries to move through the water or air or across the surface, the particles in the water, air or on the surface slow it down • Can demonstrate clearly the effects of using levers, pulleys and gears • Key Vocabulary: Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears
<p>Earth and Space</p>	<p><u>Year 5:</u></p> <p>Can I describe the movement of the Earth, and other planets, in relation to the Sun? (in the solar system)</p> <p>Can I describe the movement of the Moon relative to the Earth?</p> <p>Can I describe the Sun, Earth and Moon as approximately spherical bodies?</p> <p>Can I use the idea of the Earth's rotation to explain day and night, and the apparent movement of the Sun across the sky?</p>	<p><u>Year 5:</u></p> <ul style="list-style-type: none"> • Space craters investigation (Pattern Seeking) • Can create a voice over for a video clip or animation • Can show using diagrams the movement of the Earth and Moon • Can explain the movement of the Earth and Moon • Can show using diagrams the rotation of the Earth and how this causes day and night • Can explain what causes day and night • Can use the model to explain how the Earth moves in relation to the Sun and the moon moves in relation to the Earth • Can demonstrate and explain verbally how day and night occur • Can explain evidence gathered about the position of shadows in term of the movement of the Earth. Can show this using a model • Can explain how a sundial works • Can explain verbally using a model why we have time zones • Can describe the arguments and evidence used by scientists in the past • Key Vocabulary: Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune) spherical, solar system, rotates, star, orbit, planets

<p>Sound</p>	<p><u>Year 4:</u></p> <p>Can I identify how sounds are made? (associating them with something vibrating)</p> <p>Can I recognise that vibrations travel through a medium to the ear?</p> <p>Can I find patterns between the pitch of a sound and the object producing it?</p> <p>Can I find patterns between volume and strength of vibrations?</p> <p>Can I recognise that sounds get fainter as the distance from the sound source increases?</p>	<p><u>Year 4:</u></p> <ul style="list-style-type: none"> • String telephones investigation (Pattern Seeking and Comparative & Fair testing) • Can name sound sources and state that sounds are produced by the vibration of the object. • Can state that sounds travel through different mediums such as air, water, metal • Can give examples to demonstrate how the pitch of a sound are linked to the features of the object that produced it • Can give examples of how to change the volume of a sound e.g. increase the size of vibrations by hitting or blowing harder • Can give examples to demonstrate that sounds get fainter as the distance from the sound source increases • Can explain what happens when you strike a drum or pluck a string and use a diagram to show how sounds travel from an object to the ear • Can demonstrate how to increase or decrease pitch and volume using musical instruments or other objects • Can use data to identify patterns in pitch and volume • Can explain how loudness can be reduced by moving further from the sound source or by using a sound insulating medium • Key Vocabulary: Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation
<p>Evolution and Inheritance</p>	<p><u>Year 6:</u></p> <p>Can I recognise that living things have changed over time and fossils provide information about this?</p> <p>Can I recognise that living things produce offspring of the same kind, but with variations?</p> <p>Can I identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution?</p>	<p><u>Year 6:</u></p> <ul style="list-style-type: none"> • Egg strength investigation (Pattern Seeking and Comparative & fair testing) • Scientist Study-Charles Darwin (Research) • • Key Vocabulary: Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils

<p>Seasonal Changes</p>	<p><u>Year 1:</u></p> <p>Can I observe changes across the four seasons?</p> <p>Can I observe and describe the weather during each season?</p> <p>Can I observe and describe how day length varies during each season?</p>	<p><u>Year 1:</u></p> <ul style="list-style-type: none"> • Seasonal Change investigation (Observation over time and comparative testing) • Can name the four seasons and identify when in the year they occur. • Can describe weather in different seasons over a year. • Can describe days as being longer (in time) in the summer and shorter in the winter. • Can describe other features that change through the year • Use their evidence gathered to describe the general types of weather and changes in day length over the seasons. • Use their evidence to describe some other features of their surroundings, themselves, animals, plants that change over the seasons • Demonstrate their knowledge in different ways e.g. making a weather forecast video, writing seasonal poetry, creating seasonal artwork • Key Vocabulary: Weather (sunny, rainy, windy, snowy etc.), seasons (Winter, Summer, Spring, Autumn), sun, sunrise, sunset, day length
<p>Rocks</p>	<p><u>Year 3:</u></p> <p>Can I compare and group different types of rocks? (based on appearance and simple physical properties)</p> <p>Can I describe how fossils are formed? (simple terms- when things that have lived are trapped within rock)</p> <p>Can I recognise that soils are made from rocks and organic matter?</p>	<p><u>Year 3:</u></p> <ul style="list-style-type: none"> • Rock classification - appearance and properties. Fossil and soil formation. (Pattern Seeking) • Scientist Study- Mary Anning (Research) • Can name some types of rock and give physical features of each • Can explain how a fossil is formed • Can explain that soils are made from rocks and also contain living/dead matter • Can classify rocks in a range of different ways using appropriate vocabulary • Can devise tests to explore the properties of rocks and use data to rank the rocks • Can link rocks changing over time with their properties e.g. soft rocks get worn away more easily • Can present in different ways their understanding of how fossils are formed e.g. in role play, comic strip, chronological report, stop-go animation etc. • Can identify plant/animal matter and rocks in samples of soil • Can devise a test to explore the water retention of soils • Key Vocabulary: Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil