Science Progression Guide

Developing Together for Tomorrow's World

EYFS - Materials

EYFS

- Children identify similarities and differences in relation to materials, places, objects, people and living things.
- Develop an understanding of basic scientific concepts e.g. floating and sinking.

KS1 - Materials

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 based on their simple physical properties.

- Name a range of everyday materials. (wood, glass, metal, water, plastic, fabric, stone)
- Identify a range of objects, specifying what they are made from.
- Use a range of simple adjectives to describe a range of everyday materials.
- Identify which materials are waterproof
- Identify which materials are absorbent.
- Identify which materials float and sink
- Sort a range of materials according to their physical properties when given a sorting criterion.
- Say what is the same and different to compare materials.

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.

- Name a range of everyday materials. (wood, glass, metal, water, plastic, fabric, stone, brick, paper and cardboard)
- Identify, describe and compare a range of materials using their own sorting criteria.
- Suggest why particular objects are made using specified materials.
- Use a developing range of adjectives to help describe the properties of materials and why they are suited to the specified object.
- Conduct a fair test to identify the best material for a specified task.
- Investigate suitable materials and shapes for a toy car bridge.
- Compare the strength of different paper materials
- Explore how the shape of some materials can be changed.
- Identify which materials cannot be altered and explain why, referring to the properties of the shape.
- Identify that a force must be used to change a shape.
- Explore if materials can be changed back, using the terms reversible and irreversible.

KS2 - Materials

Year 3 - Rocks

Compare and group together different kinds of rocks (including those in the locality) on the basis of 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.

Year 4 – States of Matter

Explore a variety of everyday materials and develop simple descriptions of the states of 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

Year 5 – Properties of changing materials

Compare and group together everyday materials based on 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

• Describe the properties of a range of rocks to include physical properties and appearance. • Make comparisons between rocks, using appropriate property vocabulary to help them describe. • Make careful observations and note similarities and differences. • Investigate which rocks are the strongest and why? • Identify fossils. • Sequence the fossilization process. • Explain the process of fossilization. • Understand the time scale involved with fossils. • Explain how fossils can help us understand history. • Compare a range of soil samples and identify similarities and differences using scientific vocabulary (linked to properties of materials work) • Gain a basic understanding of how soil is made. • Identify the elements of soil. (rocks and organic materials) • Understand how wildlife and minibeasts help create soil.	**evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.** • Identify and describe the 3 states of matter? (Solids, gases and liquids). • Sort and classify materials based on their state. • Explain what a gas, liquid and solid is and how they are different. • Observe and describe the changes that occur when a solid is heated or cooled at different temperatures? • Identify and describe the effects of freezing and melting on a liquid? • Plan and carry out a fair test to explore how materials are affected by heating and cooling. • Identify how geysers works, relating knowledge to liquids, solids and gases. • Explain how gases move around • Identify and describe the process of evaporation and condensation. • Describe the difference between evaporation and condensation. • Understand and explain the water cycle.	**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.** • Group a range of materials according to their properties, • Compare a range of materials relating to Properties, magnetism, flexibility, conductivity and transparency. • Investigate and explore the strength of different materials • Investigate and explore how absorbent materials are • Explore and explain what happens when materials dissolve in liquid • Identify which materials are thermal conductors and insulators • Explain the difference between thermal conductors and insulators. • Explore and describe how mixtures and solutions can be are separated through filtering, sieving or evaporating. • Compare the results when separating mixtures using different methods. • Identify and describe a range of materials using scientific language to explore their properties. • Identify which materials are soluble or insoluble • Make comparisons between soluble materials and insoluble. • Identify and discuss if all changes are reversible • Explore the absorbency of a range of materials. • Explore the effects of dissolving • Investigate and explain using scientific vocabulary how thermal conductors and insulators work.

		• Explore reversible changes, including, evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes.

EYFS – Animals including humans

EYFS

- Enjoys playing with small world.
- Developing an understanding of growth, decay and changes over time.
- Looks closely at similarities, differences, patterns and change.
- I know how to look after the world around me.
- I am learning how things grow.
- I can notice changes over time.
- I can describe some simple features of plants and animals.
- Children know the impact for good health, physical hygiene and a healthy diet and talk about ways to keep healthy and safe.
- Children identify similarities and differences in relation to materials, places, objects, people and living things.

KS1 – Animals including humans

Year 1

Identify 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. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)

- Name a selection of common animals (Animals to represent a range from the fish, amphibian, reptile, bird and mammal groups).
- Identify what is the same and what is different when comparing 2 different animals.
- Identify what animals eat.
- Understand what the terms 'carnivore, herbivore and omnivore mean.
- Sort a range of animals according to what they eat and the group they belong (carnivores, herbivores and omnivores)
- Identify and describe the basic body parts on different animals (wings, legs, tail etc.)
- Compare different animals and their body parts.

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.

- Order a range of pictures to represent the stages of growth.,
- Describe the stages of growth and identify how each stage is different.
- Identify that animals and humans have offspring.
- Understand that some animals do NOT have babies but lay eggs that develop into offspring.
- Understand that water, food and air are essential for survival.
- Identify the difference between living and nonliving.
- Discuss and identify the effects of not drinking enough water.
- Discuss and identify the effects of a healthy diet compared to an unhealthy diet.
- Gain a developing understanding of the Eat-well plate and how this relates to their own diet.
- Understand that we need to eat 5 portions of fruit and vegetables every day to maintain a healthy diet.

• Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	• Classify and group food using the Eat-well plate.

KS2 – Animals including humans

Year 3

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 animals have skeletons and muscles for support, protection and movement.

- Identify the food groups on the Eat-well plate.
- Discuss and explain why each food group is an essential part of a balanced diet.
- Relate the Eat-well plate to their own diet.
- Understand that food is a fuel for their body and this is how we obtain nutrients.
- Gain a developing understanding of how nutrients are absorbed within the body.
- Compare animals and humans diets, stating what the same is and what is different.
- Identify and compare the impact of allergies and dietary choices upon the Eat-well plate
- Identify the purpose / function of the skeleton within animal and human bodies.
- Identify the purpose / function of muscles within animal and human bodies.
- Make comparisons between animal and human skeletons.
- Identify the main bones within a human skeleton.
- Discuss and explain how the skeleton supports the muscle structure within the human body.

Year 4

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.

- Name the internal parts of the body linked with the digestive system.
- Identify and discuss the functions of the digestive system
- Describe how the digestive system works and why this is important.
- Demonstrate how the digestive system works using role-play and replicating this with household items.
- Name the different types of teeth in humans.
- Identify the purpose of different teeth.
- Make comparisons to the visual representation of the teeth and their purpose.
- Identify how many teeth, on average, an adult should have.
- Conduct fair tests to identify the effects of different liquids on teeth (coke, water, juice)
- Identify what food chains are.
- Identify producers, predators, prey within a food chain, and describe their positioning.
- Represent different food chains for a variety of animals.

Year 5

Describe the changes as humans develop to old age.

- Draw a timeline to indicate stages in the growth and development of humans.
- Identify physical changes a human body goes through.
- Identify the external changes experienced in puberty.
- Explain the changes (internal and external (experienced in puberty.
- Identify the basic changes within the body during pregnancy.
- Sequence the stages of growth and development from baby to childhood.
- Understand the terms gestation and life expectation.
- Identify and compare the relationship between gestation and life expectation.
- Identify what happens to humans in old age.
- Compare stages of growth and the duration of time.

Year 6

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.

- Explore questions to understand how the circulatory system enables the body to function.
- Identify the purpose of the circulatory system.
- Explain how the circulatory system works.
- Identify and explain the functions of the heart, blood vessels and blood
- Explain how nutrients and water are transported through the body.
- Learn how to keep their body healthy and how their bodies might be damaged
- Explore and explain how diet effects the body.
- Explore and explain how exercise effects the body.
- Identify how some drugs and other substances can be harmful to the human body.
- Explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health
- Conduct a fair test to explore heart rate.
- Use scientific equipment to record heart rate.

• Identify and explain the changes of the skeleton structure as the body grows and develops.	• Identify similarities and differences between different food chains.		

EYFS – Living things and their habitats

EYFS

- Notices detailed features of their environment.
- Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.
- Can talk about things they have observed such as plants, animals and natural objects they have found.
- Shows care and concern for living things and the environment.
- Describe their own environment and talk about how environments vary from each other.

KS1 – Living things and their habitats

Year 2

Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited. Describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including microhabitats. Describe how animals obtain their food from plants and other animals. Understand a simple food chain, and identify and name different sources of food.

- Investigate what living things can be found around school.
- Look at the difference between living and dead.
- Identify what a habitat is.
- Compare plants and animals in British habitats.
- Compare habitats of plants animals across the world.
- Investigate how living things are dependent on each other.
- Test earthworms in different habitat conditions over time.
- Investigating Mini beast and Microhabitats in the local area.
- Gain knowledge of how animals obtain their food.
- Investigate how animals get their food from other animals.
- Investigate which animals get their food from plants.
- Know what a food chain is.
- Draw pictures to show food chains in different habitats.

KS2 – Living things and their habitats

Year 4	Year 5	Year 6

Recognise that living things (including those in the locality) 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. • Group living things (animals, flowering plants and non-flowering plants) by habitat, characteristics, • Know and describe the characteristics of a vertebrate. • Know and describe the characteristics of an invertebrate • Understand and use a classification key. • Use classification keys to put vertebrate animals into groups such as fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects • Identify positive and negative changes (both man-made and natural) that have happened to the local environment, • Explain the impact of positive and negative changes that have happened to the local environment. • Know how living things are related.	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. Raise questions about their local environment throughout the year. Find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. Find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals. • Understand and describe the life cycles of mammals, amphibians, insects, birds and plants. • Explain the life cycle of a human and a butterfly. • Compare life cycles of animals within the local area and those in different habitats. E.g. the desert, rainforest or prehistoric times. • Understand and explain asexual reproduction in plants. • Understand and explain the reproduction of some mammals e.g. a rabbit, or human. • Research and explain the work of Jane Goodall with chimpanzees.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics. Know that broad groupings, such as micro-organisms, plants and animals can be subdivided. Should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). Find out about significance of the work of scientists such as Carl Linnaeus, a pioneer of classification. • Group living things using a key. • Group living things based on their similarities and differences, including micro-organisms, plants and animals. Then subdivide these groups. • Explain reasons for groupings and describe their characteristics. • Understand and explain the Linnaean system of classification. • Investigate and explain the effect of bacteria. • Understand and explain the different types of microorganisms. • Identify different living things within the local environment. • Group a range of living things found within the local environment.

EYFS – Plants	
EYFS	
• I am learning how things grow. • I can notice changes over time. • I can describe some simple features of plants and animals.	
KS1 – Plants	
Year 1	Year 2
Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Including leaves, flowers (blossom), and petals. Fruit, roots, bulbs, seed, trunk, branches, stem).	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. Use the local environment

Identify and describe the basic structure of a variety of common flowering plants, including trees. Observe the growth of flowers and vegetables the have planted. Use the local environment throughout the year to observe how different plants growing in their habitat. • Identify common wild and garden plants. • Compare seed size in different fruits. • Identify evergreen and deciduous trees. • Gain knowledge of how evergreen and deciduous trees change throughout the year. • Compare the sizes of leaves from different plants and trees. • Identify the basic parts of a plant- Stem, roots, leaves and petals. • Identify the basic parts of a tree- Roots, trunk, flower, branches. • Observe the growth of a bean plant. • Investigate how water travels through a plant.	throughout the year to observe how different plants grow. Begin to know the requirements of plants and germination, growth and survival as well as the processes of reproduction. Know that seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them • Identify and sort different types of bulbs. • Compare different types of seeds. • Observe plant growth over time. • Explain the term germination and identify this process when planting seeds. • Create a plant fact file. • Research different world plants grown in the Eden Project and learn who created it. • Investigate what temperature is best for a bulb to grow. • Plant a chosen bulb and record the growth of the plant over time relating to the different conditions. • Research different world plants grown in the Eden Project and learn who created it. • Find out which trees and plants grow in the UK. • Plant a chosen bulb and record the growth of the plant over time relating to the different conditions. • Begin to identify the process of plant reproduction. • Understand that plants make their own seeds.

KS2 – Plants

Year 3

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. Know that plants make their own food

- Label the roots, stem, leaves and flower of a plant.
- Describe what the roots, stem, leaves and flower do.
- Identify the parts on a range of different flowering plants.
- Explore if all plants need the same requirements by planting different plants in the same conditions.

KS2 – Light

Year 3	Year 6

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 a solid object. Find patterns in the way that the size of shadows change. • Understand what light is. • Research who Thomas Edison was and how he contributed to light. • Know the difference between light and dark. • Know how light behaves and why it does so in different situations. • Understand that light travels in straight lines. • Use mirrors to identify how light travels. • Use a range of materials to investigate how light is reflected from a surface. • Know that some transparent and translucent materials do not reflect light • Understand why the rays from the sun are dangerous. • Consider ways in which we can protect our eyes from the sun. • Know what happens when a lights path is blocked. • Identify different ways to make a shadow. • Measure the size of shadows. • Know that some transparent and translucent materials do not create a shadow. • Explain why some materials do not form shadows. • Understand why a shadow may change. • Investigate how the distance of an object affects the size of a shadow.	Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or 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. Work scientifically by: deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. Look at a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters (they do not need to explain why these phenomena occur). • Understand that light travels in straight lines and explain why objects can be seen. • Investigate how to use a periscope to reflect light and explain how it helps us to see. • Design and make a periscope and explain how it works. • Use knowledge of light travel to explain why shadows have the same shape as the objects that cast them. • Explain what refraction is and how it changes the direction of light. • Create a spectroscope to discuss the refraction of light and the colour spectrum. • Explain how a prism changes a ray of light to show the spectrum. • Create a colour wheel. • Investigate how objects appear in water. • Explore the use of coloured filters.

KS2 – Sound

Year 4

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.

- Know how sounds are made and associate this with something vibrating.
- Explore a range of musical instruments and how they produce sound.
- Understand how the vibrations from sound travel to the ear.
- Make a string telephone to investigate how sound travels.
- Complete a sound walk around to school to identify sounds and how they get fainter as the distance from the sound increases.

- Investigate how the length of a rubber band can affect the sound produced and explain why.
- Make earmuffs using a variety of different materials to investigate which provides the best insulation against sound.
- how the pitch and volume of sounds can be changed in a variety of ways
- Research and identify the influence Galileo Galilei had on the world of sound.

KS2 – Forces and magnets

Year 3

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.

- Investigate the amount a magnet can hold when using different size and shaped magnets.
- Know why magnets attract and repel each other.
- Explain why magnets attract and repel each other.
- Investigate a range of materials and identify whether they are magnetic or not.
- Name and identify the north and south poles on a magnet.
- Predict what will happen when two poles are connected.
- Know what happens when north and south poles are connected and what happens when two norths or two souths are connected.
- Explain why to poles attract or repel.

Year 5

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, which act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall. Explore the effects of friction on movement and find out how it slows or stops moving objects. Find out how scientists, for example, Galileo Galilei and Isaac Newton helped to develop the theory of gravitation. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

- Explain the impact of gravity.
- Investigate the effect of gravitational pull upon an object.
- Identify a range of forces acting upon an object.
- Know the requirements for an object to have balanced forces.
- Understand what air resistance is.
- Investigate if the material of an object affects air resistance.
- Understand what water resistance is.
- Investigate if the material of an object affects water resistance.
- Explain the effects of friction.
- Investigate how friction affects different materials and explain whether it slows down or stops an object from moving.
- Research and explain the work of Isaac Newton, in regards to gravitation.
- Design and make products that use levers, pulleys, gears and/or springs and explore their effects. (This is covered through the DT program of study)

EYFS – Electricity

EYFS

- Talks about why things happen and how they work.

KS2 – Electricity

Year 4

Identify common appliances that run on electricity. Construct a simple series circuit, identifying / naming its basic parts, including cell, wire, bulb, switch and buzzer. Use their circuits to create simple devices. Draw the circuit as a pictorial representation (not necessarily using conventional circuit symbols). About precautions for working safely with electricity. Identify whether or not a lamp will light in a simple series circuit. 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.

- Identify everyday uses of electricity.
- Recognise the dangers of electricity and how to prevent those dangers.
- Name basic elements of a simple circuit, using correct scientific terms- Cell, wire, lamp (bulb), switch and buzzer.
- Gain knowledge of what components are needed to make a simple circuit.
- Connect wires to a cell and a lamp to light the lamp.
- Connect wires to a cell and a buzzer to make the buzzer sound.
- Connect wires to a cell, a lamp and a switch to turn the lamp on and off.
- Relate circuit knowledge to everyday examples. E.g. Light switches in the home or a burglar alarm.
- Use knowledge to create a working burglar alarm.
- Use a ruler to draw wire lines.
- Demonstrate knowledge of a complete circuit by drawing a diagram with no breaks.
- Recognise the dangers of electricity and how to prevent those dangers.
- Investigate what happens when a circuit has a break in it.
- Understand that a circuit needs to be complete to light a lamp.
- Know that a switch opens or closes a circuit.
- Investigate the use of a switch to turn a lamp on and off.
- Know what conductors and insulators are.
- Investigate different materials that are conductors and insulators.
- Use prior knowledge of materials to know which metals would act as good conductors.

Year 6

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. Construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. Learn how to represent a simple circuit in a diagram using recognised symbols.

- Match components to the appropriate explanation.
- Identify and draw scientific symbols for the components of a circuit.
- Compare and give reasons for variations in how components function.
- Create simple circuits to explain what happens when they try different components.
- Investigate the effects of differing voltages in a circuit.
- Explore whether wire length affects how components in a circuit work.
- Investigate how additional components in a circuit affect the power.
- Create a game using their knowledge of circuits.
- Explore using different materials for wires affect a working circuit.
- Explain the dangers of electricity and how to stay electrically safe in the home.
- Learn only about series circuits, not parallel circuits.
- Design and make a set of traffic lights.

KS2 – Earth and Space

Year 5

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.

- Investigate how the planets travel on their orbit path.
- Know that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006).
- Understand that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).
- Investigate and explain the different moon phases and why these occur.
- Explain why there is day and night, using the idea of the Earth's rotation.
- Find out about the way that ideas about the solar system have developed
- Explain the geocentric and heliocentric models.
- Research and explain the work of Nicolaus Copernicus

KS2 – Evolution and Inheritance

Year 6

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.

- Identify inherited characteristics.
- Find out more about how living things on earth have changed over time, using their knowledge of fossils from year 3.
- Understand the process of adaptation.
- Understand the concept of evolution.
- Explore how humans have evolved.
- Investigate the advantages and disadvantages of adaptation.
- Create a new animal with adaptive traits to a habitat
- Sort and classify inherited traits, adaptive traits and natural selection
- Investigate and explain how characteristics are passed from parents to their offspring and consider different breeds of dogs, and what happens when, for example, Labradors are crossed with poodles.
- Appreciate that variation in offspring over time can make animals more or less able to survive in particular environments
- Find out about how Charles Darwin developed his ideas on evolution.