

Science Spiral Curriculum

Purple

YEAR A

- Autumn 1- Digestive system:- 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
- Autumn 2- Electricity:- 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
- Spring 1- Space:- 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
- Spring 2 - Evolution and inheritance:- 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.
- Summer 1- Living things:- 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.
- Summer 2- Diet and lifestyle: 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

YEAR B

- Autumn 1- Properties and changing materials:- 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 ($^{\circ}\text{C}$), identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
- Autumn 2- Light: 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.
- Spring 1- Growing:- 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,
- Spring 2 - Experiments linked to scientists: compare and group together everyday materials on the basis of their properties, including their solubility 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, 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
- Summer 1- Forces:- 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
- Summer 2- Living things and habitats: 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

Green

Year A

- Autumn 1 – Forces and Magnets – Acting forces Magnetic attraction, magnetic poles apart, push and pull's, attraction between magnets and magnetic materials and friction, including air resistance as a force that slows moving objects and prevents them from moving
- Autumn 2- Sound – Locate the sound source, Create a sound/ making instruments from natural materials and make/ change the sound?
- Spring 1- Animals – Animals and their homes, dead and alive, local habitats and explore different habitats desert/ Antarctic/ jungle.
- Spring 2- Rocks and soils – Observing, grouping, drawing, describing and naming rock samples, how different rocks were made by Earth, fair test for rocks to check their hardness and permeability.
- Summer 1- Lights and shadows – Investigate what we need to see objects in a dark place and discover how light travels, design a stage for a shadow puppet and discover how the light we see is really made of a spectrum of colours and conduct a fair test between the distance of the torch and the size of the shadow.
- Summer 2 – Moving and growing - how much sugar is in their daily diet, the effects of too much sugar and not enough nutrients, make a skeleton string puppet that has moving joints naming bones and Investigate how muscles.

Year B

- Autumn 1 – Teeth and eating - Healthy eating, Healthy /unhealthy plates, Skeleton, Labelling body and senses.
- Autumn 2- Circuits and conductors – Electricity, Every day electrical appliances, Safety with electricity, Mains or Batteries and making a circuit.
- Spring 1- Plants - Parts of plants, What do plants need to grow, Plant life cycle, Chick life cycle, Frog life cycle and Human life cycle
- Spring 2- States of matter - Solids and Liquids
- Summer 1- Characteristics of materials - Properties of materials Man-made and natural materials Everyday materials
- Summer 2 – Pushes and Pulls- notice that some forces need contact between two objects, identify the forces acting on objects, compare how Sort magnetic and nonmagnetic materials, investigate the strength of magnets, observe how magnets attract or repel and observe how magnets attract some materials.

Red

Year A

- Autumn 1 –Materials, Exploring different materials –Exploring and identifying the properties of materials Sorting objects by their material Investigating changes to materials and which materials are best suited for different purposes
- Autumn 2- Changes of State, Melting and Freezing
- Spring 1- Light and dark, Sources of light, describing surfaces, shadows, reflection
- Spring 2- Seasonal changes, observing and recording observations, Changes to plants / trees (leaves, blossom) Changes in the weather Seasonal animals (lambs, hedgehogs)
- Summer 1- Sounds, exploring sounds, making own instrument, learning about the ear, sounds in the environment
- Summer 2 –Plants Explore different plants Explore local environment looking for different plants, Label flower parts using, Plant and care for a plant, Observe changes.

Year B

- Autumn 1 – Ourselves Body parts, Health and growth, senses, Labelling body parts, Putting body images together Learning about the skeleton Changes in the body over time.
- Autumn 2- Electricity Sources of electricity Sorting objects that do / don't use electricity Dangers of electricity Building simple circuits
- Spring 1- Animals including humans Identifying different animals Sorting / classifying animals Handling an animal with care
- Spring 2- Forces and Motion, Exploring ramps and surfaces, exploring different materials and their effect on motion and friction
- Summer 1- Living Things and Habitats, food sources
- Summer 2 –.Super Science Children to carry out scientific observations, record simple findings and performing simple investigations.

Blue

- Our bodies – naming body parts, exploring what they do, the sounds and movements we can make with our bodies.
- Exploring toys – pushes and pulls, lights and sounds.
- Exploring substances and materials through sensory exploration – sand, water, paper, fabric, food. Describing textures, simple properties. Investigating changes.
- Exploring plants and animals – planting seeds, growth, life cycles, simple characteristics ie.fur/feathers using senses, caring for plants/animals.
- The weather/seasons – changes, suitable clothing.