



Science

Year 4 Scheme of Work

Statutory requirements (National Curriculum)

Suggested activities

Autumn Term

Spring Term

Summer Term

Living things and their 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
- recognise that environments can change and that this can sometimes pose dangers to living things

MRS GREN – what is a living thing? Look at the meaning of each life process and how this can be applied to living things.

Local walk – what is living in our local area?

Design a leaflet that details what is living in our local area.

Look at classification keys – sort sweets to give chn an initial understanding of how classification keys work. Chn to create their own classification key with the given animals.

Look at environmental changes that are impacting on animal's habitats.

Focus on endangered animals and why they are becoming endangered.

Animals including humans

- 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

Chn to make a model of the bottom row of their teeth using clay. They can use mirrors to see inside their mouths. They should count how many incisors, canines and molars they have and take care in reproducing them using clay.

Chn to use post-it notes to label correctly and define: molars, canine and incisors and list the types of food that they are designed to break down along with their functions.

Chn to discuss and identify the basic parts of the digestive system. Chn to re-create the digestive process using food and water (experiment).

<ul style="list-style-type: none"> construct and interpret a variety of food chains, identifying producers, predators and prey 	<p>Chn to interpret a variety of food chains, identifying producers, predators and prey. Children are faced with three different scenarios where they will discuss the impact on the food chain that they are presented with and record their thoughts of the scenario sheets. Children are to feedback their thoughts to the rest of the class following each scenario in the form of a discussion.</p> <p>Chn are to create a presentation about 'Healthy Teeth and our Digestive System' using a blank slide show on Purple Mash.</p>
<p><u>States of matter</u></p> <ul style="list-style-type: none"> 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 	<p>Chn to complete a concept cartoon about a glass of water and ice. Chn to write their understanding of what is going on with the glass of water.</p> <p>Vocabulary lesson for these words: Particles, Solid, Liquid, Gas, Freezing, Melting, Temperature, Vapour, Condensation and Evaporation.</p> <p>Chn identify the difference between a solid, liquid and gas. Show different items and talk about the properties of a solid, liquid or gas.</p> <p>Chn investigate gases through a carousel activity. Activity 1 – chn to investigate the air inside a plastic bottle when the lid is on or off. Activity 2 – weigh a deflated balloon and weigh a blown up balloon – what is the difference? Activity 3 – teacher led activity – pour water over stones and look out for the bubbles to indicate the air escaping.</p> <p>Chn to find the melting point of chocolate. Chn to melt different chocolate types in their hand.</p> <p>Water cycle – chn to identify the different stages of the water cycle. Show the chn how to make it rain indoors.</p> <ol style="list-style-type: none"> Put the ice cubes on the plate. Pour around 3 centimetres of very hot water into the glass jar. Place the plate and ice cubes on top of the jar. Watch what happens!

Evaporation investigation – Chn to plan an investigation to see what condition are best for a tea towel to dry in. The chn can test time, material, different amount of water or location. As a group, chn complete investigation. After the investigation, the chn need to write up what they have done e.g. Key question, prediction, equipment, method, results table and conclusion.

Sound

- 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

Complete a ‘School Sound Survey’ and make note of how different sounds are made around the school. Looking for the source of each sound. Discussion around what in those particular areas are making the sound and push HA to think about vibrations in action.

Drama – chn are to act out the particles to show how sound travels through the air to an ear. Move on to looking at different states of matter and how this changes.

Chn to create ‘pan pipes’ to investigate how the pitch of an instrument changes and why that happens.

Investigate which material is best for soundproofing by testing materials on an alarm clock.

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

Vocabulary based activity

Look at common appliances and chn to try out whether different appliances are mains or battery operated.

Look in detail at electrical safety and create a booklet

Create a simple series electrical circuit and discuss what happens if the circuit is not connected

- 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

Act out a circuit to explain how electricity travels

Test to see if a circuit is complete or incomplete to and if a lamp lights up

Test whether materials are conductors and insulators

Record data

Create a switch to power a circuit