

# Science Enquiry Organiser

## Year 4, Cycle A

### Autumn 1 - Living things and their Habitats

Knowledge <i>I know...</i>	Skills <i>I can...</i>	Links back to <i>I remember...</i> [KSI]
<ul style="list-style-type: none"> <li>Living things can be called organisms.</li> <li>All living things have to do certain things to stay alive.</li> <li>These are the life processes (MRS GREN): Movement, Respiration, Sensitivity, Growth. Reproduction, Excretion, Nutrition.</li> <li>That organisms can be grouped in a variety of ways.</li> <li>A classification key is a tool that is used to group living things to help us identify them.</li> <li>Habitats can change throughout the year and this can have an effect on the plants and animals that live there.</li> <li>The process of the change from rural to urban is called urbanisation.</li> <li>Some species that are endangered and why they are endangered.</li> </ul>	<ul style="list-style-type: none"> <li>Describe the characteristics of living things.</li> <li>Name plants and animals found in different habitats.</li> <li>Talk about criteria for grouping, sorting and classifying.</li> <li>Use more complex classification keys to group animals.</li> <li>Create my own classification key.</li> <li>Using tables or Venn and Carroll diagrams.</li> <li>Group living things according to different criteria (where they live, what type of organism they are, what features they have) <i>e.g. a camel can belong in a group of vertebrates, a group of animals that live in the desert, and a group of animals that have four legs.</i></li> <li>Compare the features of mammals, reptiles, birds, amphibians and fish.</li> <li>Describe how animals adapt to their environments.</li> <li>Explore relationships between living things and familiar environments.</li> <li>Explain how and why animals migrate.</li> </ul>	<ul style="list-style-type: none"> <li>Animals can be grouped into vertebrates (and then further into fish, reptiles, amphibians, birds and mammals) and invertebrates.</li> <li>Animals can be grouped into carnivores, herbivores and omnivores.</li> <li>The differences between the teeth of carnivores and herbivores.</li> <li>The names of some common wild and garden plants and deciduous and evergreen trees.</li> <li>Examples of habitats (including microhabitats) and the animals and plants that can be found there.</li> <li>Living things depend on each other to survive. How food chains work.</li> </ul>

<b>Vocabulary:</b>	<b>Images:</b>
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**Adaptation:** suiting to the environment where the organism lives.

**Amphibians:** a cold-blooded animal, living on land and in water

**Birds:** have a beak, wings and feathers, they lay eggs and live on land

**Camouflage:** using different ways to hide their identity or appearance from other animals.

**Classification key:** a system which divides things into groups or types.

**Classify:** putting things into groups.

**Climate:** weather conditions in a certain place.

**Criteria:** a factor on which something is judged.

**Environment:** all the circumstances, people, things and events around them that influence their life.

**Endangered:** any type of plant or animal that is in danger of disappearing forever.

**Excretion:** getting rid of waste from the body.

**Extinction:** no individuals left.

**Fish:** a cold-blooded animal with gills and fins living in water

**Growth:** increasing in size or changing physically

**Habitat:** a natural environment in which an animal or plant normally lives or grows.

**Invertebrate:** a creature that does not have a spine, for example an insect, a worm, or an octopus.

**Mammals:** a warm-blooded animal with hair or fur, and (typically) the birth of live young

**Migration:** animals leave their usual home to move to another place for a period of time.

**Movement:** to change position.

**Nutrition:** the process of taking food in and absorbing the nutrients.

**Ocean currents:** patterns of water movement that influence weather.

**Organism:** a living thing.

**Prey:** an animal that is hunted and killed by another for food

**Predator:** an animal that naturally preys on others

**Reproduction:** when an animal or plant produces one or more individuals similar to itself.

**Respiration:** process of respiring; breathing ; inhaling and exhaling air.





**Reptiles:** a cold blooded animal with scales, living on land and in water

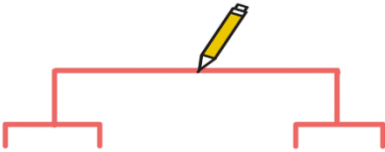
**Sensitivity:** responding to the external environment.

**Species:** a group of living things that naturally produce young with other members of the same group but not with those of other groups.

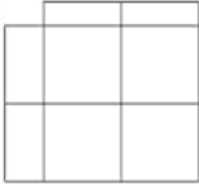
**Vertebrate:** a creature which has a spine.

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Carroll Diagram



Science Enquiry Organiser  
Year 4, Cycle A

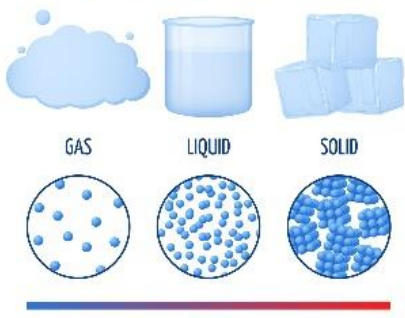
**Autumn 2 – States of Matter Solids, liquids, gases & water cycle – evaporation & condensation**

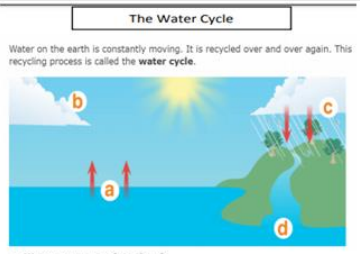
Knowledge I know...	Skills I can...	Links back to I remember...
<ul style="list-style-type: none"> <li>Solids stay in one place and can be held.</li> <li>Most solids keep their shape and do not flow like liquids. Some like sand and salt can be poured as they are made up of lots of solid particles.</li> <li>Solids always take up the same amount of space (fixed volume).</li> <li>Liquids can flow or be poured easily and are not easy to hold.</li> <li>Liquids change shape depending on the container they are in but have a fixed volume.</li> <li>Gases are often invisible.</li> <li>Gases do not keep their shape – changing this and their volume to fill up whatever container they are in.</li> <li>When a material changes from one material type to another, we refer to it as <b>‘having changed state of matter’</b>.</li> <li>Water evaporates into the air.</li> <li>The sun heats up water on land, and in rivers, lakes and seas and it turns it into water vapour. The water vapour rises into the air.</li> <li>Water vapour condenses into clouds.</li> <li>Water vapour in the air cools down and changes back into tiny drops of liquid water, forming clouds.</li> <li>Clouds get heavy and water falls back to the earth in the form of rain or snow.</li> <li>Rain water runs over the land and collects in lakes or rivers, which take it back to the sea.</li> <li>Water can evaporate and condense at any temperature but the warmer it is the faster the evaporation takes place.</li> </ul>	<ul style="list-style-type: none"> <li>Name examples of solids, liquids and gases and sort these, giving reasons why.</li> <li>Compare and group according to properties, based on testing.</li> <li>Make systematic and careful observations and take accurate measurements using standard units, using a range of equipment, including thermometers.</li> <li>Explore the properties of liquids.</li> <li>Identify viscous liquids and order from most to least.</li> <li>Investigate the viscosity of liquids.</li> <li>Recognise when a simple fair test is necessary and help to decide how to set it up.</li> <li>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</li> <li>Represent solids, liquids and gases using images and drawings.</li> <li>Set up simple practical enquiries, comparative and fair tests.</li> <li>Explain my findings.</li> <li>See a pattern in my results and record what I found out, linking cause and effect.</li> <li>Use scientific language, drawings and labelled diagrams when explaining the water cycle.</li> </ul>	<ul style="list-style-type: none"> <li>Observing that some materials change state when they are heated or cooled.</li> <li>Measuring and researching the temperature at which this happens in degrees Celsius (°C).</li> </ul>

<b>Vocabulary:</b>	<b>Images:</b>
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**Viscous:** a liquid is thick and sticky and does not flow easily.  
**Solid:** has a defined shape and volume.  
**Liquid:** has an almost-fixed volume, but no set shape.  
**Gas:** has neither a definite volume or definite shape.  
**Particles:** an extremely tiny piece of matter.  
**Properties:** what a material is like and how it behaves (soft, stretchy).  
**Variables:** factors that can change.  
**Fair test:** a way of finding out something by changing only one thing at a time.  
**Method:** how an experiment is carried out.  
**Evaporate:** when a liquid becomes a gas.  
**Water vapour:** water in its gas state.  
**Condensation:** a process by which a substance changes from a gas to a liquid.  
**Compressed:** the squashing of particles.  
**Water Cycle:** the journey water takes as it moves from the land to the sky and back again.  
**Compressed:** the squashing of particles.  
**Water Cycle:** the journey water takes as it moves from the land to the sky and back again.  
**Precipitation:** Water falling back to the earth in the form of rain/snow/hail.  
**Run off:** water running over land back to lakes, rivers and the sea.

## STATES OF MATTER





**The Water Cycle**

Water on the earth is constantly moving. It is recycled over and over again. This recycling process is called the **water cycle**.

**a. Water evaporates into the air**  
The sun heats up water on land, and in rivers, lakes and seas and turns it into water vapour. The water vapour rises into the air.

**b. Water vapour condenses into clouds**  
Water vapour in the air cools down and changes back into tiny drops of liquid water, forming clouds.

**c. Water falls as rain**  
The clouds get heavy and water falls back to the earth in the form of rain or snow.

**d. Water returns to the sea**  
Rain water runs over the land and collects in lakes or rivers, which take it back to the sea. The cycle starts all over again.

# Science Enquiry Organiser Year 4, Cycle A

## Spring 1 – Rocks

Knowledge I know...	Skills I can...	Links back to I remember...
<ul style="list-style-type: none"> <li>A scientist that studies rocks is a geologist.</li> <li>There are 3 main types of rock: sedimentary, metamorphic, igneous.</li> <li>Sediment builds up into layers and over a long period of time, hardens into rock.</li> <li>Sedimentary rock is usually crumbly and allows water through them.</li> <li>Sedimentary rock is made of layers and stuck together with mineral crystals.</li> <li>Sedimentary rock contain fossils within their layers</li> <li>Metamorphic rock is formed under the surface of the Earth from the metamorphosis [change] that occurs due to intense heat and pressure [squeezing].</li> <li>Metamorphic rock is usually hard and may contain tiny crystals or fossils.</li> <li>Igneous rocks is formed when magma cools and solidifies, which it can do above or below the Earth's surface.</li> <li>Igneous rock is very hard and contains crystals.</li> <li>How a fossil is formed:               <ol style="list-style-type: none"> <li>1. An organism dies and it's skeleton settles on the sea or river bed and is buried by sediment.</li> <li>2. The sediment surrounding the skeleton thickens and turns to stone.</li> <li>3. The skeleton dissolves and forms a 'mould'.</li> <li>4. Minerals crystalise inside the mould and a cast is formed.</li> <li>5. The fossil is eventually exposed on the Earth's surface.</li> </ol> </li> <li>Soil is made from minerals, organic matter, water and air.</li> <li>There are different types of soil which include sandy soil, clay soil, chalky soil and peat.</li> <li>Some soils are permeable like sandy soil and chalky soil.</li> <li>Weathering is where rock is broken down into smaller pieces.</li> <li>Erosion is where rocks are moved from one location and transported to another.</li> </ul>	<ul style="list-style-type: none"> <li>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</li> <li>Explain how a fossil is formed.</li> <li>Use drawings and labelled diagrams to create a representation of The Rock Cycle.</li> <li>Make careful observations about the colour, grain size, pattern and texture of rocks.</li> <li>Ask relevant scientific questions.</li> <li>Make my own identification key for rocks.</li> <li>Test and compare rocks.</li> <li>Investigate the properties of rocks.</li> <li>Use my results to create a Venn diagram and label it.</li> <li>Carefully examine what a soil sample is made from.</li> </ul>	<ul style="list-style-type: none"> <li>The names of materials</li> <li>The properties of materials e.g. fabric, metal, wood</li> <li>That materials are suitable or unsuitable for particular purposes</li> <li>Creating my own classification key.</li> <li>Using tables or Venn and Carroll diagrams.</li> </ul>

### Vocabulary: Images:

**Geologist:** scientists who use knowledge of rocks and soils to learn about Earth and other planets.

**Identification keys:** a series of yes/no questions about observable characteristics.

**Sedimentary:** rocks made of layers of sediment

**Metamorphic:** rocks made in the Earth due to intense heat and pressure.

**Igneous:** formed when magma cools and solidifies, which it can do above or below the Earth's surface.

**Permeable:** allows liquids (or gases) to pass through.

**Impermeable:** doesn't allow liquids to pass through

**Erosion:** gradual wearing away.

**Magma:** hot fluid below or within the Earth's crust from which lava and other igneous rock is formed on cooling.

**Solidify:** to become solid or hard.

**Dissolve:** to become part of a liquid.

**Organic matter:** made up of decaying animals and plants.

**Organism:** a living thing, animal or plant.

**Minerals:** small stone fragments:clay, silt or sand.

**Soil:** made from minerals, organic matter, water and air.

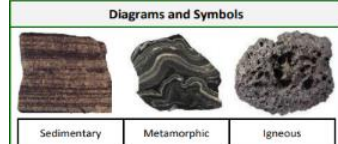
**Sandy soil:** pale in colour with lots of small air gaps and water drains through easily so it feels quite dry.

**Clay soil:** an orange or blueish sticky soil with few air gaps. Water does not drain through easily and puddles tends to stay on top of the soil for a long time when it rains.

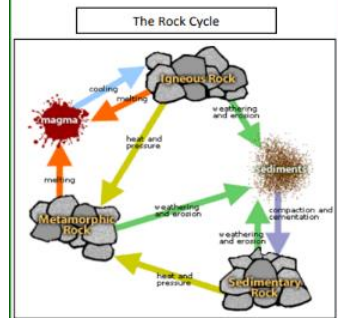
**Chalky soil:** light brown in colour, allowing water to drain through it quickly.

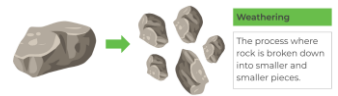
**Peat:** unlike other soils as it doesn't contain any rock particle. It is made from very old decayed plants. It is dark, crumbly and rich in nutrients (chemicals plants need to grow).

**Weathering:** the process where rock is broken down into smaller pieces.



**The Rock Cycle**





**Identification keys**

Grains not arranged in layers	Grains arranged in layers	Rock made of small sand-like grains	Rock has larger rounded pebbles in it
Pale colour large crystals	Dark colour crystals very small	<b>SANDSTONE</b>	<b>CONGLOMERATE</b>
<b>GRANITE</b>	<b>BASALT</b>		
White rock Very hard	Grey or purple rock Very hard and brittle Splits into thin sheets	Silvery coloured flaky grains	Rock shows dark and light bands
<b>QUARTZITE</b>	<b>SLATE</b>	<b>SCHIST</b>	<b>GNEISS</b>

# Science Enquiry Organiser

## Year 4, Cycle A

### Spring 2 - Animals inc, humans: Nutrition & Skeletons

Knowledge I know...	Skills I can...	Links back to I remember...
<ul style="list-style-type: none"> <li>Humans cannot make their own food like plants do - we need to eat plants and animals to get our energy.</li> <li>Healthy, balanced diets lead to healthy, active people.</li> <li>The different food types are:               <ul style="list-style-type: none"> <li>Fruit and vegetables</li> <li>Bread, rice, potatoes, pasta and other starchy foods</li> <li>Milk and dairy</li> <li>Oils and spreads</li> <li>Meat, fish, eggs, beans and other non-dairy sources of protein</li> </ul> </li> <li>The different type of nutrients: protein, carbohydrates, fats, vitamins, minerals, fibre and water.</li> <li>Protein helps your body grow and repair itself.</li> <li>Carbohydrates give you energy.</li> <li>Fats give you energy.</li> <li>Vitamins keep your body healthy.</li> <li>Minerals keep your body healthy.</li> <li>Fibre helps you to digest the food that you have eaten.</li> <li>Water helps to move nutrients in your body and get rid of waste that you don't need.</li> <li>Some people keep different diets for medical, religious and ethical reasons.</li> <li>Humans and some other animals have skeletons and muscles for support, protection and movement.</li> <li>Vertebrates are animals that have a backbone.</li> <li>When a skeleton grows on the inside of a body, it is called an endoskeleton.</li> <li>When the skeleton exists outside the body, it is called an exoskeleton.</li> <li>An exoskeleton is a covering that supports and protects animals. These have to be shed and a new skeleton is grown.</li> <li>A skeleton provides support and shape to an animal's body.</li> <li>A skeleton allows movement through the joints.</li> <li>A skeleton protects organs [e.g. the skull protects the brain].</li> <li>Joints are where bones meet - they allow our bodies to move.</li> <li>Muscles contract and relax.</li> <li>If you place an elbow on a desk and lift your arm up, muscles in your upper arm [biceps] contract while muscles behind the upper arm [triceps] relax. The muscles work together and in opposition to allow your arm to move.</li> <li>Muscles are connected to bones by tendons.</li> <li>Muscle strength is often different in different people.</li> <li>Muscle strength can be measured in different ways.</li> </ul>	<ul style="list-style-type: none"> <li>Compare and contrast the diets of different animals (including pets) and decide ways of grouping them according to what they eat.</li> <li>Research.</li> <li>Describe what happens if one part is missing from a balanced diet and how some groups of people (e.g. vegetarians) may compensate for that.</li> <li>Clearly identify the key features of the skeleton.</li> <li>Explain the form and function of parts of the skeleton.</li> <li>Match animals to their skeletons and explain my reasons for this using scientific vocabulary.</li> <li>Explore ideas about what would happen if humans did not have skeletons.</li> <li>Identify which bones are used for support (e.g. backbone), which are used for protection (e.g. cranium) and which are used for movement (e.g. joints)</li> <li>Identify and group animals with and without skeletons and compare the ways in which they move.</li> <li>Plan a simple test to investigate muscle strength in humans.</li> <li>Collect measurements and record this data in a table.</li> <li>Notice patterns in my data.</li> <li>Use results to draw simple conclusions.</li> </ul>	<ul style="list-style-type: none"> <li>The parts of the human body and what they do.</li> <li>There are five types of vertebrates (mammals, fish, reptiles, amphibians, birds)</li> <li>Vertebrates are animals that have a backbone.</li> <li>Invertebrates are animals that do not have a backbone.</li> <li>All animals need water, air and food to survive.</li> <li>The different ways in which humans can be healthy.</li> </ul>

Vocabulary:	Images:
<p><b>Balanced diet:</b> a variety of food that you regularly eat.</p> <p><b>Diet:</b> the type and range of food that you regularly eat.</p> <p><b>Disease:</b> an illness which affects people, animals, or plants.</p> <p><b>Energy:</b> the ability and strength to do physical things.</p> <p><b>Healthy:</b> well and not suffering from any illness.</p> <p><b>Hygiene:</b> keeping yourself and your surroundings clean especially in order to prevent illness or the spread of diseases.</p> <p><b>Nutrients:</b> the process of taking food into the body and absorbing the nutrients in those foods.</p> <p><b>Starchy:</b> foods that contain a lot of starch [a nutrient which gives you energy].</p> <p><b>Backbone:</b> the column of small linked bones down the middle of your back . Also known as a spine.</p> <p><b>Bones:</b> the hard parts inside your body which form your skeleton</p> <p><b>Contract:</b> to make smaller by drawing together; shrink or make tighter.</p> <p><b>Elbow:</b> the bend or joint between the upper arm and the lower arm</p> <p><b>Endoskeleton:</b> the internal skeleton of an animal, especially the bony skeleton of vertebrates</p> <p><b>Exoskeleton:</b> the protective or supporting structure covering the outside of the body of many animals</p> <p><b>Joints:</b> the junction between two or more bones.</p> <p><b>Muscles:</b> something inside your body which connects two bones and which you use when you make a movement.</p> <p><b>Organ:</b> a part of your body that has a particular purpose.</p> <p><b>Protect:</b> protecting someone or something means to prevent them from being harmed or damaged.</p> <p><b>Relax:</b> when a part of your body relaxes it becomes less stiff or firm.</p> <p><b>Skeleton:</b> the framework of bones in your body.</p> <p><b>Support:</b> to hold something up.</p> <p><b>Tendons:</b> a strong cord in a person's or animal's body which joins a muscle to a bone.</p> <p><b>Vertebrate:</b> a creature which has a spine.</p>	<div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;"><b>Images:</b></p> <div style="display: flex; justify-content: space-around;">  <div style="border: 1px solid gray; padding: 5px; width: 80%;"> <p>Which type of investigation should Izzy do to answer her question: do people with stronger leg muscles run faster?</p> <p>Who do you think is right?</p> <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <p>She should carry out a fair test.</p>  <p>Aisha</p> </div> <div style="text-align: center;"> <p>She should carry out a pattern seeking investigation.</p>  <p>Sam</p> </div> <div style="text-align: center;"> <p>She should make and compare observations over time.</p>  <p>Jacob</p> </div> </div> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;">   </div> </div>

Science Enquiry Organiser  
Year 4, Cycle A

Summer 1 – Light: Shadows & Reflections

Knowledge I <i>know</i> ...	Skills I <i>can</i> ...	Links back to I <i>remember</i> ...
<ul style="list-style-type: none"> <li>Light is a type of energy that travels in wave form from a light source.</li> <li>A wave of light can only travel in a straight line.</li> <li>A light source is something that emits light by burning, electricity or chemical reactions.</li> <li>Burning light sources include the Sun, flames from a fire and stars.</li> <li>Electric lights include lamps, car headlights and street light.</li> <li>Lights that are caused by chemical reactions are much less common. This happens when different chemicals react and light is a product of that reaction e.g. glow sticks and fire flies.</li> <li>Shiny objects are not light sources, sometimes they appear to be sources of light as they are bright.</li> <li>Reflection is when light bounces off an object.</li> <li>The difference between reflective and non reflective materials.</li> <li>Dark is the absence of light.</li> <li>Daytime is when you can see the sun from where you are, and its light and heat can reach you.</li> <li>Night is when the sun is on the other side of the Earth, and its light and heat can't reach you.</li> <li>We get day and night because the Earth spins on an imaginary line called its axis and different parts of the planet are facing towards the Sun or away from it.</li> <li>It takes 24 hours for the world to turn and we call this day.</li> <li>The Moon is not a source of light even though we can see it in the dark.</li> <li>This is because the Sun's light reflects on the surface of the Moon making it appear as though the Moon emits light.</li> <li>Transparent objects and materials e.g. glass, lets almost all of the light rays pass through them.</li> <li>Opaque objects and materials do not allow any light to pass through them.</li> <li>Translucent objects allow some bright light sources to pass through them.</li> <li>Shadows are made when an opaque object blocks light.</li> <li>An area of darkness appears behind an object when the light rays are blocked.</li> <li>During the day the light from the sun can cause shadows when it reaches an opaque object.</li> <li>When you move an object closer to the light source, the shadow becomes smaller.</li> <li>When you move an object further away from the light source, the shadow becomes bigger.</li> <li>We must never look directly at the Sun as the light produced is very bright and can be harmful to our eyes. This is why we wear sunglasses.</li> </ul>	<ul style="list-style-type: none"> <li>Define light and dark using scientific vocabulary.</li> <li>Identify different light sources and explain using scientific vocabulary.</li> <li>Set up simple practical enquiries, comparative and fair tests.</li> <li>Choose from a selection of equipment.</li> <li>Collaboratively make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.</li> <li>Look for naturally occurring patterns and relationships and decide what data to collect to identify them.</li> <li>Notice changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.</li> <li>Explore everyday phenomena e.g. what happens to light when it is reflected; how to change the size of a shadow by moving it further from/closer to the light source.</li> <li>Make some decisions about which types of enquiry will be the best way of answering questions.</li> <li>Use scientific evidence to answer questions or to support my findings.</li> </ul>	<ul style="list-style-type: none"> <li>The names of materials</li> <li>The properties of materials e.g. fabric, metal, wood</li> <li>That materials are suitable or unsuitable for particular purposes</li> <li>That some materials are used for more than one thing e.g. metal used for can, spoon</li> <li>That different materials are used for the same thing e.g. a spoon (can be wooden, metal or plastic).</li> </ul>

Vocabulary:
<p><b>Angle:</b> the direction from which you look at something</p> <p><b>Bright:</b> a colour that is strong and noticeable, and not dark</p> <p><b>Dark/darkness:</b> the absence of light</p> <p><b>Dim:</b> light that is not bright</p> <p><b>Electricity:</b> a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for machines</p> <p><b>Emit:</b> to emit light means to produce it</p> <p><b>Light:</b> a brightness that lets you see things</p> <p><b>Mirror:</b> a flat piece of glass which reflects light, so that when you look at it you can see yourself reflected in it</p> <p><b>Reflects:</b> light sent back from the shiny and smooth surface and does not pass through it</p> <p><b>Shadow:</b> a dark shape on a surface that is made when something stands between a light and the surface</p> <p><b>Source:</b> where something comes from</p> <p><b>Surface:</b></p> <p><b>Translucent:</b> some light can pass through it</p> <p><b>Transparent:</b> can be seen through</p> <p><b>Opaque:</b> can't be seen through</p> <p><b>Non-reflective:</b> not capable of reflecting light.</p> <p><b>Surface:</b> forms the top of it or is on the outside of it.</p>

**Images:**

# Science Enquiry Organiser

## Year 4, Cycle A

### Summer 2: Animals inc. humans: Digestive System & Food Chains

**Knowledge I know...**

- Teeth are used for cutting and chewing food. The start the digestive process.
- Humans look after their teeth by brushing and flossing and ensuring that they do not eat foods high in sugar.
- Not looking after teeth can lead to plaque and tooth decay.
- Canines are pointed for tearing and ripping food.
- Incisors are shovel shaped and help bite lumps out of and cutting food.
- Premolars and molars are flat and they grind and crush food.
- How the Digestive System works:
  - The smell of food triggers saliva to be produced.
  - Food is ingested and chewed in the mouth.
  - Saliva is mixed with the food which helps to break it up.
  - When the food is small enough to be swallowed, it is pushed down the oesophagus by muscles to the stomach.
  - In the stomach, food is mixed further.
  - The mixed food is sent to the small intestine which absorbs nutrients from the food.
  - Any leftover broken down food then moves on to the large intestine.
  - The food, minus the nutrients, arrives in the rectum where muscles turn it into faeces. It is stored here until it is pushed out by the anus. This is called excretion.
- A food chain is a simple way to show the direction in which energy moves from the producer to the tertiary consumer.
- The producer (a plant) gets its energy from the Sun.
- A primary consumer gets its energy from a produced e.g. a mouse gets its energy from wheat.
- A secondary consumer gets its energy from a primary consumer e.g. an owl is the predator and a mouse is the prey.
- A tertiary consumer gets its energy from a secondary consumer e.g. a wolf gets its energy from an owl.
- The arrows in a food chain show the direction in which the energy travels.
- A food web shows the direction in which energy travels when animals and producers (plants) are eaten by more than one thing.
- A food web shows multiple food chains where there are multiple feeding relationships.
- When part of the food chain is removed, this has an impact on the other parts of the food chain. The number of some species will increase, while the population of others will decrease. This can have a direct impact on the survival of the species.
- The population of tertiary consumers depends on healthy populations of producers, primary and secondary consumers

**Skills I can...**

- Match predators and their prey depending on their habitats.
- Create food chains for different habitats and compare them. How do the producers, predators and prey compare? What are their teeth like?
- Compare animal populations and explain why some populations (e.g. insects) might be higher than others (e.g. wolves)
- Dissect owl pellets and investigate and identify the contents
- Explore what happens when part of a food chain is removed.
- Create food webs.
- Explore how the changing environment is having an impact on feeding relationships and food chains/webs.

**Links back to I remember...**

- Humans cannot make their own food like plants do - we need to eat plants and animals to get our energy.
- Healthy, balanced diets lead to healthy, active people.
- Humans and some other animals have skeletons and muscles for support, protection and movement.
- The life processes (MRS GREN): Movement, Respiration, Sensitivity, Growth. Reproduction, Excretion, Nutrition.
- Animals can be grouped into carnivores, herbivores and omnivores and other ways in which to classify animals.
- Most animals live in habitats to which they are suited.
- Animals and plants depend on each other.
- How animals obtain their food and an example of a food chain.

### Vocabulary:

**Absorb:** soak up or take in  
**Canine:** pointed teeth near the front of the mouth of humans and of some animals  
**Carnivore:** an animal that eats meat  
**Decay:** gradually destroyed by a natural process  
**Digestion:** breaking down ingested food material  
**Enamel:** the hard white substance that forms the outer part of a tooth  
**Excretion:** the process of eliminating faeces, urine, or sweat from the body  
**Faeces:** the solid waste substance that people and animals get rid of from their body by passing it through the anus  
**Herbivore:** an animal that only eats plants  
**Incisor:** the teeth at the front of your mouth which you use for biting into food  
**Ingested:** When animals or plants ingest a substance, they take it into themselves, for example by eating or absorbing it.  
**Intestines:** the tubes in your body through which food passes when it has left your stomach  
**Molar:** the large, flat teeth towards the back of your mouth that you use for chewing food  
**Nutrition:** the process of taking food into the body and absorbing the nutrients in those foods  
**Oesophagus:** the part of your body that carries the food from the throat to the stomach  
**Omnivore:** person or animal eats all kinds of food, including both meat and plants  
**Organ:** a part of your body that has a particular purpose  
**Plaque:** a substance containing bacteria that forms on the surface of your teeth  
**Premolar:** two situated on each side of both jaws between the first molar and the canine  
**Saliva:** the watery liquid that forms in your mouth and helps you to chew and digest food  
**Stomach:** the organ inside your body where food is digested before it moves into the intestines  
**Classification key:** a system which divides things into groups or types  
**Energy:** the ability and strength to do physical things  
**Environment:** all the circumstances, people, things, and events around them that influence their life  
**Food chain:** a series of living things which are linked to each other because each thing feeds on the one next to it in the series  
**Food web:** a combination of food chains that integrate to form a network  
**Habitat:** the natural environment in which an animal or plant normally lives or grows  
**Organism:** a living thing  
**Predator:** an animal that kills and eats other animals  
**Prey:** an animal hunted or captured by another for food  
**Primary consumer:** an organism that feeds on producers. They are always herbivores.  
**Producer:** organisms that make their own food using energy from the Sun.  
**Secondary consumer:** organisms that eat primary consumers for energy.  
**Tertiary consumer:** eat primary and secondary consumers as their main source of food.

### Images:

Example:

producer

primary consumer

secondary consumer

tertiary consumer