



Cove Junior School
Skills and Knowledge Assessment Overview Science
Year 4

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| Year 4 Autumn 1 'Go with the Flow' Classifying living things |
| <ul style="list-style-type: none"> Living things can be divided into groups based upon their characteristics Classification keys help group, identify and name living things Animals can be classified as vertebrates (having a spine) or invertebrates (lacking a spine) In any habitat there are food chains and webs where nutrients are passed from one organism to another when it is eaten If the population of one organism in the chain or web is affected, it has a knock-on effect to all the others |
| Life cycles |
| <ul style="list-style-type: none"> Mammals, amphibians, insects and birds have different life cycles. Lifecycles vary in time depending on the species of animal- it can be as short as just a few weeks for insects, to up to 200 years for sea urchins. Larger animals often have longer life cycles but not always. All animal life cycles begin with growth and development followed by reproduction. Some animals undergo a complete metamorphosis as they grow. Metamorphosis is a process where animals undergo an abrupt and obvious change in the structure of their body and their behaviour. Some animals are eusocial. This means they live in colonies (groups) with one animal or group producing young and the others working to care for them. |
| Environmental change |
| <ul style="list-style-type: none"> Environmental change affects different habitats differently Human activity significantly affects the environment Different organisms are affected differently by environmental change |
| Year 4 Autumn 2 'Tribes, Towns and Togas' Scientific Enquiry |
| <ul style="list-style-type: none"> Asking relevant questions and using different types of scientific enquiries to answer them Setting up simple practical enquiries, comparative and fair tests Making systematic and careful observations and, where appropriate, taking accurate measurements Gathering, recording, classifying and presenting data in a variety of ways Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions |
| Year 4 Spring 1 'Abominable' Properties of solids, liquids and gases |
| <ul style="list-style-type: none"> Materials can be divided into solids, liquids and gases. Solids hold their shape unless forced to change. Liquids flow easily but stay in their container because of gravity. The more viscous a liquid the less runny it is. Gases move everywhere and are not held in containers by gravity. |
| Changing state |
| <ul style="list-style-type: none"> Heating causes solids to melt into liquids and liquids to evaporate to gases. Cooling causes gases to condense to liquids and liquids to freeze to solids. |
| Melting, freezing, boiling and condensation temperatures |
| <ul style="list-style-type: none"> Different substances change state at different temperatures but the temperatures at which given substances changes state is always the same. |
| All about the water cycle |
| <ul style="list-style-type: none"> The temperature at which a substance melts from a solid to a liquid is the same at which it freezes from a liquid to a solid. The temperature at which a substance boils from a liquid to a gas is the same at which it condenses from a gas to a liquid. Liquids evaporate slowly, even below their boiling temperatures. The water cycle is the process by which water is continuously transferred between the surface of the earth and the atmosphere. Liquid water evaporates into water vapor, condenses to form clouds, and precipitates back to earth in the form of rain and snow. |

Year 4 Spring 2 'Roll Up! Roll Up!'

Electricity as a power source

- Lots of **devices** are powered by **electricity**
- Electricity comes from a source There are two main sources- **batteries and mains**

What batteries do

- A battery pushes electricity to the device.
- To be able to push electricity the battery must be connected to the device using **wires**
- This is called a **circuit**

Making devices work harder

- If there are more batteries added to a circuit this provides a bigger push on the electricity
- This will make the device work harder e.g., brighter bulbs, faster spinning motor, louder buzzer

What affects magnetic strength

- The strength of magnetic forces is affected by:
 - The strength of the magnet.
 - The distance between the magnet and the object.
 - The material the object is made from.

Insulators and conductors

- Some materials will allow electricity to flow through them- **Conductors**
- Metals such as silver, gold and copper are good conductors. Water is also a conductor of electricity.
- Other materials will not allow electricity to flow through them- **Insulators**
- Plastic, wood, glass and rubber are good electrical insulators. That is why they are used to cover materials that carry electricity.
- A switch opens and closes a circuit

Year 4 Summer 1 'Heroes or Zeros?'

Describing sound

- Sounds can be produced in a variety of ways
- When a sound is produced, it spreads out from its source in all directions

How sound is made and travels

- Sound is caused by **vibration** (objects move rapidly back and forth or up and down)
- Sounds get fainter as the distance from the sound source increases

Year 4 Summer 2 'Save Our Seas'

Variation in animals' diet

- Different animals require different foods to survive.
- Animals get their food from plants and other animals. This can be shown in a **food chain**. (From Year 2)
- A food chain begins with a **producer**. This is often a green plant because plants can make their own food. (From Year 2)
- A living thing that eats other plants is called a **consumer**. (From Year 2)
- Humans require a balanced diet to remain **healthy** but healthy diets vary depending upon the type of activity that humans do.
- Humans have 2 sets of teeth in their lifetimes
- Humans have three main types of teeth- incisors, canines and molars.
- Incisors help to bite off and chew pieces of food.
- Canines are used for tearing and ripping food.
- Molars help to crush and grind food.

How humans digest food

- The **nutrients** in food have to get to every part of the body. The **blood** transports them.
- The role of **digestion** is to get the nutrients in food to dissolve in the blood, if it doesn't dissolve it can't enter the blood and be transported.