



SCIENCE PROGRESSION IN SKILLS AND KNOWLEDGE
YEAR 4 STATUTORY REQUIREMENTS



THE 5 ENQUIRY TYPES:

Research using secondary sources.

Comparative and fair testing.

Observing over time.

Pattern seeking.

Identifying, classifying, and grouping

| AUTUMN | SPRING | SUMMER |
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| <p><u>AUTUMN 1: PHYSICS - SOUND</u></p> <ul style="list-style-type: none">-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. <p>Main Enquiry Types Research using secondary sources. Observing over time. Pattern seeking.</p> | <p><u>SPRING 1: CHEMISTRY – 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>Main Enquiry Types Comparative and fair testing. Observing over time. Pattern seeking. Identifying, classifying and grouping</p> | <p><u>SUMMER 1: BIOLOGY – LIVING THINGS AND THEIR HABITATS</u></p> <ul style="list-style-type: none">-Recognising that living things can be grouped in a variety of ways-Exploring and using classification keys to help group, identify and name a variety of living things in their local and wider environment-Recognising that environments can change and that this can sometimes pose dangers to living things <p>Main Enquiry Types Research using secondary sources. Identifying, classifying and grouping</p> <p><u>WORKING SCIENTIFICALLY</u></p> <ul style="list-style-type: none">-Asking relevant questions and using different types of scientific enquiries to answer them-Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions |



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| <p>Identifying, classifying and grouping</p> <p><u>WORKING SCIENTIFICALLY</u></p> <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 using standard units, using a range of equipment, including thermometers and data loggers -Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions -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 using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions -Identifying differences, similarities or changes related to simple scientific ideas and processes -Using straightforward scientific evidence to answer questions or to support their findings. <p><u>AUTUMN 2: PHYSICS – ELECTRICITY</u></p> <ul style="list-style-type: none"> -Identify common appliances that run on electricity | <p><u>WORKING SCIENTIFICALLY</u></p> <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 using standard units, using a range of equipment, including thermometers and data loggers -Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions -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 using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions -Identifying differences, similarities or changes related to simple scientific ideas and processes -Using straightforward scientific evidence to answer questions or to support their findings. <p><u>SPRING 2: BIOLOGY – ANIMALS, INCLUDING HUMANS</u></p> <ul style="list-style-type: none"> -Describe the simple functions of the basic parts of the digestive system in humans | <ul style="list-style-type: none"> -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 using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions -Identifying differences, similarities or changes related to simple scientific ideas and processes -Using straightforward scientific evidence to answer questions or to support their findings. |
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| <p>-Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>-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.</p> <p>-Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>-Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>Main Enquiry Types Comparative and fair testing. Observing over time. Pattern seeking.</p> <p><u>WORKING SCIENTIFICALLY</u></p> <p><i>-Asking relevant questions and using different types of scientific enquiries to answer them</i></p> <p><i>-Setting up simple practical enquiries</i></p> <p><i>-Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</i></p> <p><i>-Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</i></p> | <p>-Identify the different types of teeth in humans and their simple functions</p> <p>-Construct and interpret a variety of food chains, identifying producers, predators and prey.</p> <p>Main Enquiry Types Research using secondary sources. Pattern seeking. Identifying, classifying and grouping</p> <p><u>WORKING SCIENTIFICALLY</u></p> <p><i>-Asking relevant questions and using different types of scientific enquiries to answer them</i></p> <p><i>-Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</i></p> <p><i>-Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</i></p> <p><i>-Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</i></p> <p><i>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</i></p> <p><i>-Identifying differences, similarities or changes related to simple scientific ideas and processes</i></p> <p><i>-Using straightforward scientific evidence to answer questions or to support their findings.</i></p> | |
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-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

using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

-Identifying differences, similarities or changes related to simple scientific ideas and processes



-Using straightforward scientific evidence to answer questions or to support their findings.

KNOWLEDGE TO BE LEARNED BY THE END OF EACH UNIT (WHAT DO WE WANT THE CHILDREN TO KNOW AND REMEMBER?)



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| AUTUMN TERM | SPRING TERM | SUMMER TERM |
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| <p style="text-align: center;"><u>Sound</u></p>  <ul style="list-style-type: none"> • Sounds are created through vibrations. • Vibration from sounds travel through a medium to the middle ear. • Pitch is the highness or lowness of a tone. • Volume is how loud or soft something sounds. • Sounds get fainter as the distance increases. | <p style="text-align: center;"><u>States of Matter</u></p> <ul style="list-style-type: none"> • A solid is a matter that retains its shape and size on its own. • A liquid is a matter that conforms to the shape of the container in which it is held. It can change shape but its volume will stay the same. • A gas does not have a fixed shape. They completely fill any container they are put into. • Materials can sometimes change state when heated or cooled. • Evaporation is when a liquid turns into a gas. • Condensation is when water vapour becomes a liquid (the reverse of evaporation). | <p style="text-align: center;"><u>Living Things and Their Habitats</u></p> <ul style="list-style-type: none"> • Vertebrate animals are fish, amphibians, reptiles, birds, and mammals. • Invertebrates are snails and slugs, worms, spiders, and insects. • Humans can have a positive effect or negative effect on the environment. |
| <p style="text-align: center;"><u>Electricity</u></p>  <ul style="list-style-type: none"> • Parts of a simple electrical circuit include cells, wires, bulbs, switches and buzzers. | <p style="text-align: center;"><u>Animals, including Humans</u></p> <ul style="list-style-type: none"> • The mouth, oesophagus, stomach, small intestine and large intestine are all parts of the digestive system. • We have 4 different types of teeth which serve a particular purpose for eating and chewing. • Incisors cut food. • Canines used to tear food. • Premolars and molars are used to grind and break up food. | |



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- **A switch** opens and closes a circuit.
- **A conductor** is a material which allows an electric current to **flow through** such as **copper, iron, steel** (metals).
- **An insulator** is material which does not allow an electric current to flow through such as **plastic, wood, glass**.
- Metals are good conductors.

- Identify 3 parts of a **food chain**; **producer, predator** and **prey**.

Children working at below Age Related Expectations in SCIENCE at the end of Year 4: