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|  | **Autumn** | **Spring** | **Summer** |
| **Reception**  **(All objectives work towards meeting the ELG ‘Understanding the World’)** | **Seasons**  \*Identify the season (Autumn)  \*Identify what the weather is like.  **Animals**  \*Say what animals live on a farm.  \*Understand where our food comes from.  \*Understand and identify healthy food choices.  **Mini-beasts**  \*Describe the features of minibeasts.  \*Know where they live and why.  \*Understand why it is important to look after them. | **Seasons**  \*Identify the season (Winter/Spring)  \*Identify what the weather is like.  **Exploring change-Winter topic**  \*Explore how ice changes when it gets warmer  \*Identify where the North and South Pole are.  \*Say what animals live in the North and South Pole.  \*Know how the North/South pole are different to where we live. | **Seasons**  \*Identify the season (Summer)  \*Identify what the weather is like.  **Growing and changing**  \*Say how we have changed since a baby.  \*Plant a seed and observe it grow.  \*Say how the plant is changing as it grows. |
| **Working scientifically**  ***These objectives are end points for the end of EYFS. Sufficient opportunities need to be given in every unit/topic to meet these.***  \*Choose the resources they need for their chosen activities and say when they do or don’t need help  \*Know about similarities and differences in relation to places, objects, materials and living things  \*Make observations of animals and plants  \*Explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.  \*Select and use technology for particular purposes  \* Represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories  \*Talk about the features of their own immediate environment and how environments might vary from one another  \*Explain why some things occur and talk about changes | | | |
| **KS1 (rolling programme)** | ***CYCLE A***  **Seasonal changes**  *(Autumn)*  \*Observe and know about the changes in the seasons  \*Name the seasons and know about the weather in each season.  **Investigations**  *See WS endpoints* | ***CYCLE A***  **Seasonal changes**  *(Winter/Spring)*  \*Observe and know about the changes in the seasons  \*Name the seasons and know about the weather in each season.  **Everyday materials**  *(Chemistry)*  \*Identify a variety of common materials  \*Name a variety of everyday materials (wood, plastic, glass, metal, water, rock)  \*Distinguish between an object and the material from which it is made.  \*Know the materials an object is made from.  \*Describe materials according to their properties.  \*Group objects and materials according to their properties.  \*Describe why some materials suit certain objects better than others.  \*Investigate the properties of materials.  **Exploring everyday materials**  *(Chemistry)*  \*Identify a variety of materials and sort them.  \*Identify natural and man-made materials  \*Know that some materials change shape by squashing, bending, twisting and stretching and others can’t.  \*Identify the suitability of metal and plastic for a variety of purposes.  \*Identify different products that can be made from wood and their features and purposes  \*Identify different materials that are used for the same product. | ***CYCLE A***  **Seasonal changes**  *(Summer)*  \*Observe and know about the changes in the seasons  \*Name the seasons and know about the weather in each season.  **Animals including humans-Classifying animals**  (*Biology)*  \*Know and name a variety of animals including fish, amphibians, reptiles, birds and mammals  \*Know how to sort animals in to categories (including fish, amphibians, reptiles, birds and mammals)  \*Classify and know animals by what they eat (carnivore, herbivore, omnivore)  \*describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)  **Animals including humans- parts of the body and senses**  (*Biology)*  \*To understand that people change as they get older  \*Name parts of the human body that I can see  \*Name parts of the body that are internal and external  \*Know how to link the correct part of the human body to each sense. |
| ***CYCLE B***  **Seasonal changes**  *(Autumn)*  \*Observe and know about the changes in the seasons  \*Name the seasons and know about the weather in each season.  **Investigations**  *See WS endpoints*  **Animals including humans-life cycles**  *(Biology)*  \*Notice that animals, including humans, have offspring which grow into adults  \*Know what animals and humans need to survive.  \*To know why exercise, a balanced diet and good hygiene are important for humans. | ***CYCLE B***  **Seasonal changes**  *(Winter/Spring)*  \*Observe and know about the changes in the seasons  \*Name the seasons and know about the weather in each season.  **Living things and their habitats**  (*Biology)*  \*Identify things that are living, dead and never lived.  \*Identify and name plants and animals in a range of habitats.  \*To know how a specific habitat provides for the basic needs of living things there (plants and animals)  \*Match living things to their habitats.  \*Know how animals find their food.  \*Name some different sources of food for animals  \*Know and explain a simple food chain. | ***CYCLE B***  **Seasonal changes**  *(Summer)*  \*Observe and know about the changes in the seasons  \*Name the seasons and know about the weather in each season.  **Plants**  *(Biology)*  \*Name a variety of common wild and garden plants  \*Name the petals, stem, leaves and root of a plant.  \*Name the roots, trunk, branches and leaves of a tree.  \*Know how seeds and bulbs grow in to plants.  \*Know what plants need in order to grow and stay healthy (Water, light and suitable temperature) |
| **Working scientifically**  ***These objectives are end points for the end of a key stage. Sufficient opportunities need to be given in every unit to meet these.***  \*Ask simple scientific questions.  \*Know how to use simple equipment to make observations.  \*Carry out simple tests.  \*Identify and classify things.  \*Explain to others what I have found out.  \*Know how to use simple data to answer questions. | | | |
| **Year 3** | **Animals including humans** (*Biology)*  \*Understand the importance of a nutritionally balance diet.  \*Know how nutrients, water and oxygen are transported within animals and humans.  \*Describe and explain the skeletal system of a human.  \*Describe and explain the muscular system of a human.  \*Know about the purpose of the skeleton in humans and animals.  **Rocks**  (*Chemistry)*  \*Compare and group rocks based on their appearance and physical properties, giving a reason.  \*Understand how fossils are formed.  \*Know how soil is made.  \*Know about and explain the difference between sedimentary, metamorphic and igneous rock. | **Forces and Magnets** *(Physics)*  \*Describe how objects move on different surfaces.  \*Know how some forces require contact and some do not-giving examples.  \*Explain how objects attract and repel in relation to objects and other magnets.  \*Predict whether objects will be magnetic and carry out an enquiry to test this.  \*Know how magnets work.  \*Predict whether magnets will repel and give a reason. | **Light**  *(Physics)*  \*Understand we need light to see things.  \*Understand dark is the absence of light.  \*Know that light is reflected from surfaces.  \*Understand light from the sun can be dangerous and there are ways to protect our eyes.  \*Know that shadows are formed when the light source is blocked by a solid object.  \*Find patterns in the way that the size of shadows change.  **Plants**  *(Biology)*  \*Know the function of different parts of flowing plants and trees.  \*Know what different plants need to survive.  \*Understand how water is transported within plants.  \*Know the plant life cycle, especially the importance of flowers. |
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| **Working scientifically**  ***These objectives are end points for the end of a key stage. Sufficient opportunities need to be given in every unit to meet these.***  \*Understand how to ask relevant scientific questions.  \*Understand how to use observations and knowledge to answer scientific questions.  \*Understand how to set up a simple enquiry to explore a scientific question.  \*Understand how to set up a test to compare things.  \*Understand how to set up a fair test and explain why it is fair.  \*Make careful and accurate observations, including use of standard units.  \*know how to use equipment including thermometers and data loggers to make measurements.  \*Gather, record, classify and present data in different ways to answer questions.  \*Know how to use diagrams, keys, bar charts and tables using scientific language.  \*Know how to use findings to report in different ways, including oral and written explanations.  \*Know how to draw conclusions and suggest improvements.  \*Know how to make a prediction with a reason.  \*Know how to identify difference, similarities and changes related to enquiry. | | | |
| **Year 4** | **Animals including humans** *(Biology)*  \*Identify and name the basic parts of the digestive system in humans and describe their functions.  \*Identify and know the different types of teeth in humans.  \*Know the functions of different human teeth.  \*Use a food chain to identify producers, predators and prey.  \*Construct food chains to identify producers, predators and prey. | **Sound**  *(Physics)*  \*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 increases. | **States of matter**  (*Chemistry)*  \*Be able to group materials based on their state of matter (solid, liquid, gas)  \*Understand how some materials can change state.  \*Measure the temperature at which materials change state.  \*Understand about the water cycle.  \*Identify the part played by evaporation and condensation in the water cycle.  **Living things and their habitats** *(Biology)*  \*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. |
| **Electricity** *(Physics)*  \*Identify common appliances that run on electricity.  \*Construct a simple series electric circuit.  \*Identify and name the basic parts of a circuit (wires, cells, bulbs, switches and buzzers)  \*Know how to draw a circuit diagram.  \*Predict and test whether a lamp will light within a circuit.  \*Know the function of a switch in a circuit.  \*Know the difference between a conductor and insulator and give examples. |
| **Working scientifically**  ***These objectives are end points for the end of a key stage. Sufficient opportunities need to be given in every unit to meet these.***  \*Understand how to ask relevant scientific questions.  \*Understand how to use observations and knowledge to answer scientific questions.  \*Understand how to set up a simple enquiry to explore a scientific question.  \*Understand how to set up a test to compare things.  \*Understand how to set up a fair test and explain why it is fair.  \*Make careful and accurate observations, including use of standard units.  \*know how to use equipment including thermometers and data loggers to make measurements.  \*Gather, record, classify and present data in different ways to answer questions.  \*Know how to use diagrams, keys, bar charts and tables using scientific language.  \*Know how to use findings to report in different ways, including oral and written explanations.  \*Know how to draw conclusions and suggest improvements.  \*Know how to make a prediction with a reason.  \*Know how to identify difference, similarities and changes related to enquiry. | | | |
| **Year 5** | **Animals including humans** *(Biology)*  \* That each stage of the lifecycle shows development  \* To understand the different gestation periods of other mammals  \*To understand that the length of time in the womb for humans and other mammals varies considerably  **Properties and changes of materials**  *(Chemistry)*  \*Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), 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.  \*Give reasons, based on comparative and fair tests, for the uses of everyday materials, including metals, wood and plastic.  \*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. | **Forces**  *(Physics)*  \*Explain that unsupported objects fall towards the Earth because of the 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.  **Earth and Space**  (Physics)  \*Understand and explain the movement of the Earth and other planets relative to the sun.  \*Understand and explain the movement of the Moon relative to the Earth.  \*Demonstrate how night and day are created.  \*Describe the Sun, Earth and Moon (using the term spherical) | **Living things and their habitats**  *(Biology)*  \*Know the life cycle of different living things (e.g mammal, amphibian, insect and bird).  \*Know the differences between different life cycles.  \*Understand the reproduction process in plants.  \*Understand the reproduction process in animals. |
| **Working scientifically**  ***These objectives are end points for the end of a key stage. Sufficient opportunities need to be given in every unit to meet these.***  \*Understand how to plan different types of scientific enquiry.  \*Understand how to control variables in an enquiry.  \*Measure accurately and precisely using a range of equipment.  \*Know how to record data and results using scientific diagrams, labels, classification keys, tables, scatter graphs, bar and line graphs.  \*Use the outcome of test results to make predictions and set up comparative and fair tests.  \*Report findings from enquiries in a range of ways.  \*Know how to explain a conclusion from an enquiry.  \*Explain causal relationships in an enquiry.  \*Know how to relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes the theory.  \*Read, spell and pronounce scientific vocabulary accurately. | | | |
| **Year 6** | **Animals, including humans**  (Biology)  \*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  **Light**  *(Physics)*  \*Understand how light travels.  \*Understand and demonstrate how we see objects.  \*Know why shadows have the same shape as the object that casts them.  \*Understand how simple optical instruments work-periscope, telescope, binoculars, mirror, magnifying glass. | **Evolution and inheritance**  *(Biology)*  \*Understand how the Earth and living things have changed over time.  \*Know how fossils can be used to find out about the past.  \*Understand about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents)  \*Know how animals and plants are adapted to suit their environment.  \*Link adaption over time to evolution.  \*Understand and explain what evolution is. | **Electricity**  *(Physics)*  \*Know how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer.  \*Compare and give reasons for why components work and do not work in a circuit.  \*Be able to draw circuit diagrams using correct symbols. |
| **Working scientifically**  ***These objectives are end points for the end of a key stage. Sufficient opportunities need to be given in every unit to meet these.***  \*Understand how to plan different types of scientific enquiry.  \*Understand how to control variables in an enquiry.  \*Measure accurately and precisely using a range of equipment.  \*Know how to record data and results using scientific diagrams, labels, classification keys, tables, scatter graphs, bar and line graphs.  \*Use the outcome of test results to make predictions and set up comparative and fair tests.  \*Report findings from enquiries in a range of ways.  \*Know how to explain a conclusion from an enquiry.  \*Explain causal relationships in an enquiry.  \*Know how to relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes the theory.  \*Read, spell and pronounce scientific vocabulary accurately. | | | |