

Science Curriculum 2023/24 – Years 3 & 4

	Autumn 1	Autumn 2
Topic	<p>Animals Including Humans</p> <p>Children will learn how to group living things in a variety of ways, and will talk about the ways in which they have grouped them. Children will learn what a classification key is and how to use it to help them identify and name living things in their local and wider environment. Children will look at some of the ways in which environments can change and the positive and negative effects it has on the living things.</p>	<p>States of Matter</p> <p>Children will learn about all matter being made up of particles and that these are arranged in a certain way that define a substance as a solid, liquid or gas. They will learn about and investigate that water, and other substances, can change states of matter at different temperatures. Children will learn about the processes of evaporation and condensation and relate this understanding to changes of state within the water cycle.</p>
Knowledge	<p>Knowledge</p> <ul style="list-style-type: none"> Know that living things can be grouped in a variety of ways. Pupils could begin to put vertebrate animals into groups, for example: fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects. Plants can be grouped into categories such as flowering plants (including grasses) and non-flowering plants, for example ferns and mosses. Know that environments can change and that this can sometimes pose dangers to living things. Pupils should explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation. Know that Emma Camp is a marine biologist working to study and better manage coral reefs as they are exposed to more stress due to the predicted rise in ocean temperatures over the coming years. <p>Skills</p> <ul style="list-style-type: none"> Know how to use the local environment to raise and answer questions to help identify plants and animals in their habitat. Know how to use classification keys to help group, identify and name a variety of living things in their local and wider environment. Know how to record, classify and present data in a variety of ways to help in answering questions. 	<p>Knowledge</p> <ul style="list-style-type: none"> Know simple descriptions of each state of matter, for example: solids hold their shape; liquids form a pool not a pile; gases escape from an unsealed container. Know that materials can be grouped whether they are solids, liquids or gases, depending on the arrangement of the particles it is made up of. Know what is happening to the particles as a substance changes state, for example: as liquids are heated, the particles gain more energy and move more, taking up more space – expanding. Know that water changes state when it is heated or cooled. Know that some other substances, like chocolate, butter, iron and oxygen, change state at different temperatures. Know the part played by evaporation and condensation in the water cycle. Know that the rate of evaporation is affected by temperature. <p>Skills</p> <ul style="list-style-type: none"> Know how to compare and group materials together, according to whether they are solids, liquids or gases. Know how to research and take accurate measurements, using thermometers, of the temperature at which materials change state in degrees Celsius (°C). Know how to set up simple enquiries, comparative and fair tests Know how to record evaporation over a period of time using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
Vocab	<p>Classification Key, Habitat, Vertebrate, Invertebrate, Flowering, Non-Flowering, Ecology, Ecosystem, Population, Development, Deforestation, Pollution, Urbanisation</p>	<p>Water vapour, Condensation, Precipitation, Evaporation, Substance Matter, Solid, Liquid, Gas, Particles, Boiling Point, Melting Point</p>



Science Curriculum 2024/25 – Years 3 & 4

	Spring 1 & 2
Topic	<p>Forces & Magnets</p> <p>Children will learn about forces and magnets and work scientifically to compare, raise questions, carry out tests, gather and record data. They will also begin to consider how magnets and forces can be useful in everyday life and they will suggest creative uses for forces and magnets.</p>
Knowledge	<p>Knowledge</p> <ul style="list-style-type: none"> • Know that some forces need contact between 2 objects, but magnetic forces can act at a distance. • Know that magnets attract or repel each other and attract some materials and not others. • Know some magnetic materials. • Know that magnets have 2 poles. • Know that magnetic forces can act without direct contact. • Know that friction acts between 2 surfaces. • Know how magnets can be useful in everyday items and suggest creative uses for different magnets. <p>Skills</p> <ul style="list-style-type: none"> • Know how to compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet • Know how to predict whether 2 magnets will attract or repel each other, depending on which poles are facing • Know how to describe forces as push or pulls. • Know how to compare how things move on different surfaces. • Know how to raise questions and carrying out tests to find out how far things move on different surfaces. • Know how to gather and record data to find answers to questions. • Know how to explore the strengths of different magnets and find a fair way to compare them.
Vocab	force, contact, magnet, magnetic, push, pull, friction, attract, repel, surface, friction, fair test, record, compare, poles



Science Curriculum 2024/25 – Years 3 & 4

	Summer 1	Summer 2
Topic	<p>Light Children will learn about light and work scientifically to compare, raise questions, carry out tests, gather and record data. They will also begin to consider how light is useful in everyday life and how it can be manipulated for a purpose. They will also consider safety with regards to looking at bright lights.</p>	<p>Plants Children will learn about plants and work scientifically to compare, raise questions, carry out tests, gather and record data. They will be introduced to the relationship between structure and function: the idea that every part has a job to do. They will explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction.</p>
Knowledge	<p>Knowledge</p> <ul style="list-style-type: none"> • Know we need light in order to see things • Know that dark is the absence of light • Know that light is reflected from surfaces • Know that light from the sun can be dangerous and that there are ways to protect their eyes • Know not to look directly into the sun or other bright lights • Know that shadows are formed when the light from a light source is blocked by an opaque object • Know patterns in the way that the size of shadows change <p>Skills</p> <ul style="list-style-type: none"> • Know how to explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. • Know how to look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change. 	<p>Knowledge</p> <ul style="list-style-type: none"> • Know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers <p>Skills</p> <ul style="list-style-type: none"> • Know how to explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant • Know how to investigate the way in which water is transported within plants • Know how to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal
Vocab	light, dark, shadow, reflection, surface, source, opaque, transparent, translucent, concave, convex, refraction	air, light, water, soil, grow, transported, roots, stem, trunk, leaves, flowers, nutrients, life cycle, pollination, formation, dispersal

