Aldwyn Primary School – Year 2 Science Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit	Animals including humans	Rocks	Forces and Magnets	Animals including humans	Plants	Light
Coverage	Nutrition, carnivores, omnivores and herbivores	Compare, group and classify rocks. Fossil and soil formation	Attract and repel objects, compare how objects move	Human and animal skeletons and muscles	Plant life and growth. The different parts and functions of plants	Source of light, reflection and shadows
Content	•Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat	•Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties •Describe in simple terms how fossils are formed when things that have lived are trapped within rock •Recognise that soils are made from rocks and organic matter	•Compare how things move on different surfaces •Notice that some forces need contact between two objects, but magnetic forces can act at a distance •Observe how magnets attract or repel each other and attract some materials and not others	•Identify that humans and some other animals have skeletons and muscles for support, protection and movement	•Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers •Explore the requirements of plants for life and growth and how they vary from plant to plant •Investigate the way in which water is transported within plants •Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	•Recognise that we need light in order to see things and that dark is the absence of light •Notice that light is reflected from surfaces •Recognise that light from the sun can be dangerous and that there are ways to protect their eyes •Recognise that shadows are formed when the light from a light source is blocked by an opaque object •Find patterns in the way that the size of shadows change

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Content			•Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials •Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing			

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Activities	•Continue to learn about the importance of nutrition •Understand that animals have different diets to humans •Classify animals as carnivores, omnivores and herbivores •Understand the food pyramid, know the food groups and what foods they contain •Know what nutrients are and which food contain them	•Linked with work in geography, explore different kinds of rocks and soils, including those in the local environment. Learn about sedimentary, metamorphic and igneous rocks •Understand how fossils and soil are formed •Compare different soil profiles	•Observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). Label the forces acting on a magnet and a spring •Explore the behaviour and everyday uses of different magnets (for example, bar, ring, button and horseshoe)	•Pupils should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions. Identify and name parts of the human skeleton and some muscles •Use the focus on muscles and skeleton to talk about and find out about pushes and pulls in readiness for magnetism	•Be introduced to the relationship between structure and function: the idea that every part has a job to do •Explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction Note: Pupils can be introduced to the idea that plants can make their own food, but at this stage they do not need to understand how this happens	•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 •Think about why it is important to protect their eyes from bright lights. look for, and measure shadows, and find out how they are formed and what might cause the shadows to change Note: Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses
Vocabulary	Nutrition, vitamin, mineral, carbohydrates, protein, dairy, oils, fruit, carnivore, omnivore, herbivore, prey	fossil, soil, crystals, sedimentary, metamorphic, igneous, organic matter	Magnet, magnetic, magnetic pole, attract and repel, forces, friction, surface	skeleton, muscles, diet, joint, pelvis, cartilage, rib cage, tendon, spine, protect, support, movement	roots, stem, nutrients, pollination, seed dispersal, fertiliser, seed formation, stigma, anther, soil	reflection, shadows, light source, opaque, refraction, periscope, nocturnal, orbits, convex, concave

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Working Scientifically	•Asking relevant questions and using different types of scientific enquiries to answer them •Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment •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 •Identifying differences, similarities or changes related to simple	•Asking relevant questions and using different types of scientific enquiries to answer them •Setting up simple practical enquiries, comparative and fair tests •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	•Asking relevant questions and using different types of scientific enquiries to answer them •Setting up simple practical enquiries, comparative and fair tests •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 •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	•Asking relevant questions and using different types of scientific enquiries to answer them •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	•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 •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	•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

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	scientific ideas and processes •Using straightforward scientific evidence to answer questions or to support their findings. Identifying and classifying – How can we group the food we eat? Research – why do different types vitamins keep us healthy and which food can we find them in?	•Identifying differences, similarities or changes related to simple scientific ideas and processes •Using straightforward scientific evidence to answer questions or to support their findings Fair testing – How does adding different amounts of sand to soil affect how quickly water drains through it? Identifying and classifying - Can you use the identification key to find out the name of each rock in your classroom? Comparative tests – Which soil absorbs the most water?	•Using straightforward scientific evidence to answer questions or to support their findings Pattern seeking - Does the size and shape of the magnet affect how strong it is? Identifying and classifying – Which materials are magnetic? Comparative – Which magnet is strongest?	•Identifying differences, similarities or changes related to simple scientific ideas and processes •Using straightforward scientific evidence to answer questions or to support their findings Pattern seeking – Do male humans have larger skulls than female humans? How do the skeletons of different animals compare?	•Identifying differences, similarities or changes related to simple scientific ideas and processes. •Using straightforward scientific evidence to answer questions or to support their findings Identifying and classifying – How many different ways can you group our seed collection? Comparative tests – Which conditions help seeds germinate faster? Research – What are all the ways that seeds disperse? Observe – How do flowers in a vase change over time? What happens to celery when it is left in a glass of coloured water	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 Fair testing – How does the number of layers of transparent plastic affect how much light can pass through? How does the distance between the shadow puppet and the screen affect the size of the shadow? Research – How does the sun make light? Observing – When is our classroom the darkest? Is the sun the same brightness all day?

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Assessment	TAPS Assessment, animal classify and identify	TAPS Assessment, rock and soil activity	TAPS Assessment magnetic prediction and rolling cars	TAPS Assessment, skeleton function investigation	TAPS Assessment, growth of plants and the function of different plant parts	TAPS Assessment, can everything make a shadow?
Enrichment	Trip to local restaurant for pizza making day. How can we make the pizza healthy?	Fossil hunting at Manchester Museum.	Designing and making board games using magnets.	Design and make dancing skeletons.	Nature walk in our local woods.	Torchlight shadow puppet experience.

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Prior Learning	EYFS •Have some understanding of healthy food and the need for variety in their diets •Be able to show care and concern for living things •Know the effects exercise has on their bodies •Have some understanding of growth and change Year 1 •Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals •Identify and name a variety of common animals that are carnivores, herbivores and omnivores Year 2 •Find out and describe the basic needs of animals, including	Year 1 •Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Year 2 •Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses •Find out how shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	EYFS •Know about similarities and differences in relation to places, objects, materials and living things. Year 2 •May have an awareness of how to make things stop and start, using simple pushes and pulls. •They may know about floating and sinking.	EYFS •be able to identify different parts of their body •Know the effects exercise has on their bodies •Have some understanding of growth and change •Can talk about things they have observed including animals Year 1 •Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Year 2 •Know that animals, including humans, have offspring which grow into adults •Know the basic stages in a life cycle for animals, including humans •Find out and describe the basic needs of animals, including humans, for survival (water, food and air)	EYFS •Make observations of plants •Know some names of plants, trees and flowers •May be able to name and describe different plants, trees and flowers •Show some care for their world around them Year 1 •Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees •They should be able to identify and describe the basic structure of a variety of common flowering plants, including trees Year 2 •Observe and describe how seeds and bulbs grow into mature plants •Find out and describe how plants need water, light and a suitable	Year 1 •Observed changes across the four seasons •Observed and describe weather associated with the seasons and how day length varies •May have some knowledge of were light comes from •Will most likely have seen their shadows and may know they appear when it is sunny •Some understanding of a reflection •May understand they need light to be able to see things

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	humans, for survival (water, food and air) •Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene				temperature to grow and stay healthy	

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Future Learning	Year 4 •Describe the simple functions of the basic parts of the digestive system in humans •Identify the different types of teeth in humans and their simple functions •Construct and interpret a variety of food chains, identifying producers, predators and prey Year 5 •Describe the changes as humans develop to old age Year 6 •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	Year 4 •Compare and group materials together, according to whether they are solids, liquids or gases •Observe that some materials change state when heated or cooled, and measure and research the temperature at which this happens in degrees Celsius •Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature Year 6 •Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	Year 5 •Explain that unsupported objects fall towards the Earth because of the force of 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	Year 4 •Describe the simple functions of the basic parts of the digestive system in humans •Identify the different types of teeth in humans and their simple functions Year 5 •Describe the changes as humans develop to old age Year 6 •Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	Year 5 •To describe the life process of reproduction in some plants Year 6 •Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	Year 6 •Recognise that light appears to travel in straight lines •Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye •Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes •Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

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	•Describe the ways in which nutrients and water are transported within animals, including humans					