The London Acorn School.

Subject overviews

Science

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Long Term Science Curriculum Overviews

Term	Class /Year group	Subject area
Autumn	Class 1 Year 2	Biology- Animals inc. Humans • Know all our body parts beyond the basic features • Name draw and label the body parts • Explore how our bodies are linked to our senses and name the senses § *identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.* *Pupils should have plenty of opportunities to learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes.* Our school and our park Health Science • Eating the Rainbow • Fruit and Vegetable classification • Importance of a 'rounded' diet • What is healthy eating? How we fuel our bodies Identify different smells game- Developing oral language skills. Eating the rainbow Naming my favourite tree Drawing my favourite tree
Spring	Class 1 Year 2	Change and Cycles • Day and night cycles (routines) • Introduction to length of a day and how it varies • The four seasons, how they occur, observed changes and the cycles of life • Order and name the days of the week and months of the year; recognise and name the seasons BIOLOGY - ANIMALS INCLUDING HUMANS - Pupils should be taught to: 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 - describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) *Pupils might work scientifically by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells*
Summer	Class 1 Year 2	BIOLOGY - PLANTS • Identify and name a variety of common wild and garden plants including deciduous and evergreen trees.

		Identify and describe the basic structure of common flowing plants including trees (leaves, flowers, blossom, petal, fruits, roots, bulb, seed, trunk, branches, stem). An introduction to space looking at the Earth, Sun and Moon through picture and story. How the moon changes Importance of our Sun CHEMISTRY - MATERIALS • Name and identify common materials (wood, plastic, glass, metal, water and rock) • Know the physical properties of materials. • Compare and classify materials based on their simple physical properties. Pupils should be taught to: § observe changes across the four seasons § observe and describe weather associated with the seasons and how day length varies.
Autumn	Class 2 Year 3	BIOLOGY – HUMANS INCLUDING ANIMALS • Name the main parts of the skeletal system and know its function. • Name the main parts of muscular system and know its function. • Identify and name the different types of food groups and the importance of a balanced diet. PHYSICS - FORCES AND MAGNETS • Know what a force is. • Compare how things move on different surfaces. • Know and name a range of forces. • Know that magnets are a force that attract, repel and have two poles. • Know magnetic force acts at a distance. • Know that some materials are magnetic.
Spring	Class 2 Year 3	PHYSICS – LIGHT • Know how seasonal change affects light. • Know how light is reflected from surfaces. • Explain how shadows are formed. • Know that the size of shadows change depending on the position and strength of the light source.
Summer	Class 2 Year 3	BIOLOGY – PLANTS • Describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • Know the requirements of plants for life and growth (air, light, water, nutrients from soils and room to grow) and how they vary from plant to plant. • Know how water is transported within plants. • Know the life cycle of flowering plants including pollination, seed formation and seed dispersal. CHEMISTRY – ROCKS • Compare rocks based on appearance and physical properties.

		• Know how fossils are formed. • Recognise that soils are made from rocks and organic matter. • Know what happens to rocks when they are exposed to the different elements.
Autumn	Class 3 Year 4	PHYSICS - FORCES AND MAGNETS -Know what gravity is and investigate the force of gravity. -Know the effects of air resistance. -Know that some mechanisms including leaver including pulleys and gears allow a smaller force to have a greater effect (ballista, onager, scorpio weapons). PHYSICS – ELECTRICITY - Name primary and secondary sources of light. -Identify common appliances that run on electricity. -Construct a simple series electrical circuit, identifying and naming the basic parts. -Know about the effects of loops and switches in a circuit. -Recognise some common conductors and insulators and know that metal is a good conductor.
Spring	Class 3 Year 4	BIOLOGY – LIVING THINGS AND THEIR HABITATS • Use classification keys to group living things in a variety of ways. • Put vertebrate and invertebrate animals into groups (inc snails, slugs, spiders, worms and insects). • Recognise that environments can change and the impact this can have on living things and habitats. PHYSICS – SOUND • Identify how sounds are made associating some of them with something vibrating (using the type of instruments from the Saxon period (string, wind and percussion). • Know that vibrations from sounds travel through a medium to the ear. • Know the pitch is affected by the feature of the source. • Know that volume and its strength is affected by vibrations of the source
Summer	Class 3 Year 4	BIOLOGY – ANIMALS INCLUDING HUMANS • Name the main parts of the digestive system and know its function. • Know the different types of teeth in humans and their function. • Construct and interpret food chains, identifying producers, predators and prey. CHEMISTRY – STATES OF MATTER • Know the differences between solids, liquids or gases and their properties. • Know the effects of temperatures on substances and the rate of evaporation. • Know how and why temperature affects the states of matter. • Know how evaporation and condensation is and how it relates to the water cycle.
Autumn	Class 4 Year 5	PHYSICS -FORCES AND MAGNETS • Know the effects of friction in movement and how it slows, stops and speeds up with moving objects. Identify the effects of water resistance and friction between moving surfaces. PHYSICS – EARTH AND SPACE • Know how the movement of the Earth and other planets area relative to the sun in the solar system. • Know how the earth's rotation relates to day and night.

		• Explore how seasons and the associated weather are created. Investigate the movement of the moon and sun relative to the Earth.
Spring	Class 4 Year 5	CHEMISTRY – MATERIALS • Know the property of materials including hardness, solubility, transparency, conductivity. • Apply knowledge of solids, liquids and gases to decide how mixtures might be separated through filtering, evaporating and sieving. • Know how a solution can be created and how it can be reversed. • Know that some changes result in the formation of a new state of matter. BIOLOGY – ANIMALS INCLUDING HUMANS • Know the timeline to indicate stages in the growth and development of humans. • Learn about the changes in puberty. • Identify the process of sexual reproduction in animals and asexual reproduction in plants. • Research and compare gestation periods of animals and humans.
Summer	Class 4 Year 5	CHEMISTRY – MATERIALS • Explore changes that cannot be reversed in relation to recycling. • Know how chemical changes have an impact on our lives. Know how existing materials can be utilised to create new materials. BIOLOGY – LIVING THINGS AND THEIR HABITATS • Explore the work of naturalist and animal behaviour such as David Attenborough. • Explore the difference between life cycles of mammals, amphibians, insects and birds. • Classify sea animals by Groups including crustaceans and molluscs.
Autumn	Class 5 Year 6	ELECTRICITY • Know how bulb brightness or volume of a buzzer relates to the number and voltage of cells used. • Compare how and give reasons components in a circuit function including bulbs, buzzers and switches. • Know the difference between series and parallel circuits. • Know how buzzers are used to create sirens. Use recognised symbols when representing circuit diagrams. LIGHT • Consider how climate change can affect seasonal change. • Know how light travels. • Know how we see objects. • Explain reflection and refraction of light. • Explore a range of phenomena incl rainbows.
Spring	Class 5 Year 6	LIVING THINGS AND THEIR HABITATS • Research the work of Carl Linaeus, a pioneer for classification. • Give reasons for classifying plants and animals based on specific characteristics. • Classify living things into groups according to observable characteristics incl. microorganisms, plants and animals. • Define adaptation and explore how mountain animals and plants have adapted to suit their environment (Mt Everest & Ben Nevis). EVOLUTION AND INHERITANCE • Recognise that things have changed overtime and that fossils provide information about living things that inhabited the earth millions of years ago. • Know the process of fossilisation. • Explore the work of palaeontologist (such as Mary Anning and Charles Darwin has developed his ideas of evolution). • Know what inheritance is and how it links to genetics (offspring producing the same kind through reproduction). • How adaptation may lead to evolution.

		Know how animals and plants are adapted to suit their ever-changing environment.
Summer	Class 5 Year 6	BIOLOGY – LIVING THINGS AND THEIR HABITATS • Use classification keys to group living things in a variety of ways. • Put vertebrate and invertebrate animals into groups (inc snails, slugs, spiders, worms and insects). • Recognise that environments can change and the impact this can have on living things and habitats. • Explore the work of naturalist and animal behaviour such as David Attenborough. • Explore the difference between life cycles of mammals, amphibians, insects and birds. • Classify sea animals by Groups including crustaceans and molluscs. BIOLOGY – ANIMALS INCL. HUMANS - Name the main parts of the digestive system and know its function. - Know the different types of teeth in humans and their function. - Describe the changes as humans develop to old age. - Construct and interpret food chains, identifying producers, predators and prey.