Science Spring 2 overview

Science	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Unit	Comparing Animals	Life Cycles and Health	Light and Shadow	Sounds and Vibrations	Life Cycles and Reproduction	Circuits, Batteries and Switches.
Outline	Comparing and grouping animals based on similarities and differences in their characteristics, physical features and diets.	Identifying the stages of animal life cycles and carrying out tests to record growth.	Exploring the link between light and darkness, observing reflections and investigating different factors that affect shadows.	Exploring volume, pitch and how sound travels.	Exploring the life cycles of plants and animals and the life process of reproduction.	Developing knowledge of circuits, the effects of changing voltage and how switches contribute to different devices.
Learning objectives	• To identify and group animals. • To identify and group animals. • To identify animals that are carnivores, herbivores and omnivores. • To recognise animals that make suitable pets. To describe and compare the structure of animals.	• To identify different stages of the human life cycle. • To know which offspring come from which parent animal. • To observe and measure growth in humans. • To identify and list the basic needs for survival for humans and animals. • To recognise the importance of exercise and personal hygiene. • To identify how to have a balanced diet.	• To explain the role of light sources. • To compare light reflecting on different surfaces. • To recognise which materials cast a shadow. • To summarise how shadows change throughout the day. • To investigate how the distance of the light source affects the size of its shadow. • To tell a story using shadow puppets.	• To describe how sounds are made. • To describe how sounds are heard through different mediums. • To describe the relationship between vibration strength and volume. • To describe the relationship between volume and distance. • To describe pitch and how to change it. • To explain how insulating materials can be used to muffle sound.	• To describe the life cycle of a plant, including the reproductive stage. • To describe the life cycle of a mammal. • To describe the life cycle of a bird and compare it with that of a mammal. • To describe the life cycle of an amphibian. • To describe the life cycle of an insect and compare it with that of an amphibian. • To describe asexual reproduction in plants.	• To use recognised symbols for electrical components. • To predict and present results for electrical circuits. • To recognise a link between the number of components and resistance. • To identify ways to change voltage within an electrical circuit. • To investigate how voltage affects bulb brightness. To apply knowledge of circuits and components to a practical solution.
Key Skills	• To research using non-fiction texts. • To gather and record data to help in answering questions.	• To use simple measuring equipment. • To use secondary sources to research. • To make observations over time.	• To plan and draw a results table. • To ask testable questions and plan how to answer them. • To evaluate a method.	• To observe closely how different instruments create a sound. • To research how whales and dolphins communicate underwater.	• To observe and compare equivalent parts in different flowers. • To research the life cycles of different mammals.	• To use standardised symbols when drawing diagrams. • To explain results using scientific knowledge.

Science Spring 2 overview

	• To know about famous scientists throughout history.	• To interpret collected results.	• To find patterns in data and form conclusions. • To recall how different people work with light and shadows.	• To present results using a bar chart. • To suggest which variables to measure and for how long. • To design simple results tables. • To identify when results or observations do not match predictions.	• To pose questions to compare the life cycles of different birds. • To suggest how temperature may affect egg hatching. • To use data to describe a relationship and make predictions. • To represent root growth over time on a line graph.	• To design a results table. • To plan an enquiry. • To recognise that scientific knowledge can solve a problem.
Key Vocab	amphibian bird carnivore compare diet difference fish group herbivore mammal observe omnivore reptile scientist similarity	basic needs egg health hygiene life cycle live young pupa spawn survive teenager toddler tadpole	bar chart cast (a shadow) conclusion group (Y1) investigation light source luminous mirror non-luminous observe (Y1) opaque measure (Y1) mirror pattern (Y1) predict (Y2) record reflect reflection reflective (shiny) results table shadow the Sun translucent transparent trustworthy variable	air bar chart (Y3) eardrum insulator observe (Y1) pitch plan (Y1) predict (Y2) proof record (Y3) research (Y2) results table (Y3) sound trustworthy (Y3) vibration volume	adolescence amphibian (Y1) asexual reproduction bird (Y1) characteristic data estimate fertilisation germination gestation gills incubation insect (Y4) life cycle (Y2) line graph line of best fit lungs mammal (Y1) mating metamorphosis offspring ovule pollen pollination reproduction (Y3) sexual reproduction testable	anomaly (Y5) battery (Y4) bulb (Y4) buzzer (Y4) cell circuit (Y4) circuit diagram control variable (Y4) current data (Y5) electricity (Y4) evaluate evidence (Y5) fair test hazard (Y5) mean average model (Y5) motor (Y4) power source (Y4) relationship (Y5) resistance safety (Y5) switch (Y4) units variable (Y3) voltage wire (Y4)

Science Spring 2 overview

Key Questions	How can we compare animals? Why must research be done from non-fiction texts? Who are some of the most famous scientists?	What are the stages of the human life cycle? Can we match the offspring to the parent? How? How do I measure? What are secondary sources? Why is it important to exercise and keep clean? What makes up a balanced diet?	Why are natural light sources so important? Does light reflect differently off different materials? Which materials cast a shadow? Why do shadows change during the day? Does the distance of a light source effect the shadow?	How are sounds made? What is the link between vibration strength and volume? How long should variables be measured for? What is pitch and how does it change? How can sound be muffled?	What is the life cycle of a plant and how does it reproduce? Do mammals have different life cycles? Do all birds have the same life cycle? How does temperature effect egg hatching?	What are the symbols for all electrical components? Does the number of components effect the resistance in a circuit? How do we change voltage in an electrical circuit? How does voltage effect the brightness of a bulb?