

Key Learning in Science: Year 6

There should be plenty of opportunities throughout the year for children to use the school/local environment to observe and identify a variety of plants and animals that live there focusing on their adaptations for survival. This could be done through an ongoing/monthly nature journal to observe, record and review a variety of examples over a period of time and would support their learning and wider research in the 'Living Things and Their Habitats' unit and the 'Evolution and Inheritance' unit.

 Puplis should be taught to: Describe how living things are classified into brad groups according to common observable characteristics and based on similarities and differences, including things that adapted to sait their things that adapted to sait their the long term and short term). Give reasons for classifying plants and animals based on similarities and mines. Give reasons for classifying plants and animals based on similarities and mines. Biordifferences, including things that adapted to sait their the long term and short term). Biordifferences, including things that adaptation may and are not identicated to sait their the long term and short term). Biordifferences and grouped as fish amphibians, reptiles, binds of neersts. Invertebrates can be grouped as fish amphibians, reptiles, binds of theorem, spiders and informed grouping such as finor corganisms, spiders and flowering plants (ind, trees and grouping such as micro-organisms, plants and animals. Invertebrates (com-statutory): Puplis should bid to their leagen that obself, for instance by considering difference ways and that papers when, for example. Index differences, gain sets increase. Notes and Guidance (non-statutory): Puplis should bid in their leagen in dowering plants (ada single adapted to their tergence) for instance by considering difference and groupings, such as micro-organism, plants and mines adapted to their displant, for on the area transported within animals. Notes and Guidance (non-statutory): Puplis should bid (differences (e.g., incess, spin) Building on what they papers when, for example by exploiding to on theraction, spin adapting in the organism of spin and an anima add to their leagen in the disal shat papers when, for example by exploiding to on theraction, spin adapting in the interduced to their displant, for intance b	Living Things and their Habitats - Classification	Living Things and their Habitats – Evolution and	Animals/Health – Exercise, Health and The Circulatory System
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	classifying].	on climbing plants, brightly coloured and scented flowers.	



Key Learning in Science: Year 6

Light and Astronomy – How Light Travels	Electricity
Pupils should be taught to:	Pupils should be taught to:
Recognise that light appears to travel in straight lines.	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells
Use the idea that light travels in straight lines to explain that objects are seen because they give	used in the circuit.
out or reflect light into the eye.	Compare and give reasons for variations in how components function, including the brightness of
Explain that we see things because the light that travels from light sources to our eyes or from	bulbs, the loudness of buzzers and the on/off position of switches.
light sources to objects and then to our eyes (and represent this in simple diagrammatic form).	Use recognised symbols (at least: cells, wires, switches, bulbs, buzzers and motors) when
Use the idea that light travels in straight lines to explain why shadows have the same shape as the	representing a simple circuit in a diagram.
objects that cast them.	• Use/interpret circuit diagrams to construct a variety of more complex circuits predicting whether
	they will 'work'.
Notes and Guidance (non-statutory):	
Pupils should build on the work in year 3, exploring the way that light behaves, including light	
sources, reflection and shadows. They should talk about what happens and make predictions.	Notes and Guidance (non-statutory):
	Building on their work in Year 4, pupils should construct simple series circuits, to help them answer
Pupils might work scientifically by:	questions about what happens when they try different components, for example, switches, bulbs,
 Deciding [observe/explore] where to place rear-view mirrors on cars. 	buzzers and motors. They should learn how to represent a simple circuit in a diagram using
• Designing and making [Create / Invent / Design] a periscope and using the idea that light	recognised symbols.
appears to travel in straight lines to explain how it works.	Pupils are expected to learn only about series circuits, not parallel circuits. Pupils should be
• Investigating the relationship [looking for patterns] between light sources, objects and shadows by using shadow puppets.	taught to take the necessary precautions for working safely with electricity.
• Extend their experience [explore and observe] of light by looking at a range of phenomena	Pupils might work scientifically by:
including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters	• Systematically identifying [testing] the effect of changing one [thing] component at a time in a
(they do not need to explain why these phenomena occur).	circuit.
	• Designing and making [Create / Invent / Design] a set of traffic lights, a burglar alarm or some
	other useful circuit.



Year Group Expectations: Year 6

Exploring / Observing UKS2 - developing a deeper understanding of a wide range of scientific ideas and encountering more abstract ideas	Grouping and Classifying UKS2 - Compare and contrast a variety of examples linked to UKS2 PoS	Questioning UKS2 - asking their own questions about scientific phenomena	Researching UKS2 – summarise research from a wide variety of sources and recognising that scientific ideas change and develop over time	Modelling using dance, drama or a visual aid to represent science in the real world	Collaborating interacting effectively as part of a group
 Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS) Identify changes that have occurred over a very long period of time (evolution) and discuss how changes have impacted the world Explore more abstract systems / functions /changes / behaviours and record their understanding of these (e.g. the relationship between diet, exercise, drugs, lifestyle and health; evolutionary changes; how light travels) 	 Recognise the importance of classification to the scientific world and form a conclusion from their sorting and classifying Compare and contrast more complex processes, systems, functions (e.g. sexual and asexual reproduction) <u>Construct a classification key /</u> branching database using more than two items <u>Compare and contrast things beyond</u> their locality and discuss advantages/disadvantages, pros/cons of the similarities and differences Use research* to identify and classify things Use classification systems, keys and other information records [databases] to help classify or identify things. 	 Recognise scientific questions that do not yet have definitive answers (linked to Y6 PoS) Refine a scientific question to make it testable i.e. Ask a testable question which includes the change and measure variables - e.g. what would happen to if we changed? e.g. What affect would we have on if we? e.g. How would exercise affect the pulse rate? Use observations to suggest a further (testable or research) question. Independently ask a variety of scientific questions and decide the type of enquiry needed to answer them 	 <u>Research how scientific ideas</u> <u>have developed over time and</u> <u>had an impact on our lives.</u> Use evidence from a variety of sources to justify their ideas Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. Interview people to find out information. 	 Make / perform and use their own versions of simple models to describe and explain scientific ideas (e.g. circulatory system drama, periscopes to explain how light travels, burglar alarm to explain components in a circuit). 	 Propose their own ideas and make decisions with agreement in a group Support, listen to and acknowledge others in the group Check the clarity of each other's suggestions Build on / add to someone else's idea to improve a plan or suggestion Understand that it is okay to disagree with their peers and offer a reasons for their opinion
Planning and Testing	Using Equipment and	Communicating Reporting findings, recording data,	Considering the result	s of an investigation /	writing a conclusion
enquiry making decisions about and explaining choices for testing	Measures UKS2 - increasing complexity and increasing accuracy and precision make their own decisions about the data	Reporting findings, recording data, presenting findings Read, spell and pronounce scientific vocabulary correctly linked to the relevant	Describing results / Looking for patterns	Explaining results UKS2 - draw conclusions based on / supported by	Trusting results UKS2 - comment on how reliable the data is
	to collect	Yr Grp	UKS2 - Looking for patterns analysing functions, relationships and interactions more systematically	evidence	



Year Group Expectations: Year 6