

Working Scientifically Living things & their habitats Light Animals (inc. Humans)

Electricity Evolution & Inheritance

I can explain how light travels from a source in straight lines

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I can describe the process whereby light travels from light sources and is reflected from objects/materials to our eyes

I can describe that we see colour because some colours are absorbed by an object when light is reflected from its surface

I can label the parts of an eye and discuss how each part is involved in seeing an object from which light is reflected

I can describe how light is reflected by mirrors – plane; concave; convex

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I can explain how shadows are formed and how the transparency or opaque property of an object determines the clarity of the shadows we see

I can identify that an object looks different when observed in two media e.g. water and



## The Year 6 Scientist

'I can...'

I can explain that a shadow has the same shape as the object casting it but may be elongated or shorter depending on the position of the light

I can explain how shadows are formed and how the transparency or opaque property of an object determines the clarity of the shadows we see

I can describe how the process of light reflection can be used commercially e.g. manufacture of periscope; microscope; rear-view mirrors & telescopes

I can use dichotomous keys to identify a range of living things from within the local habitat and increasingly from a diverse range of habitats around the world.

I can describe the work of scientists in creating a binomial classification system e.g. Carl Linnaeus

I can identify differences and similarities between the broad classification groups of living things

I understand that there are 7 main groups of vertebrates (Chordata):

I understand that there are 5 main groups of plants:  
Algae; mosses & liverworts; ferns; club mosses & horsetails; conifers & flowering plants

I understand that invertebrates are also classified into groups and can name some of these groups:

Sponges, Cnidarians, Echinoderms, Molluscs, Segmented worms, Arthropods, Crustaceans, Insects, Round worms and Flat worms

I understand that there more than one type of micro-organism e.g. fungi; bacteria; virus; protists and I can name examples

I can describe how some micro-organisms are helpful and others are harmful and can give examples of both

I can create simple dichotomous keys to identify living things from a range of habitats.



Working Scientifically



Living things & their habitats



Light



Animals (inc. Humans)



Electricity



Evolution & Inheritance

I can identify the role of a skeleton and its part in protecting the heart and circulatory system, as well as enabling the circulatory cycle.

I can name the main parts of the human circulatory system and describe the function of each part.

I can explain the composition and function of blood within the body, including how it carries oxygen and carbon dioxide

I can explain the impact of exercise and nutrition on the heart and circulatory system

I can describe the impact of exercise upon the body and the benefits of a healthy, active lifestyle compared to an inactive, sedentary, unhealthy lifestyle in the short and long term.

I can explain how water is absorbed from the digestive system and transported around the body to ensure good health and function of organs/tissues

I understand that the human body needs energy to function properly and this comes from our food.

I can describe what happens to the body when it has too little/much food to meet its needs

I can explain how energy from our food is released and carried around the body to those organs and tissues which need it.

I can describe how other animals transport/store energy, oxygen and water, noting how their systems may have evolved differently to man's, due to the extreme/different habitats in which they live.

I can identify a range of helpful medicines and harmful drugs and explain the effect on the body including the addictive nature of many drugs.

I can use my knowledge of symbols and circuit diagrams to create an accurate series circuit.

I can draw a circuit diagram using recognised symbols

I can explain what happens to other components in a circuit if additional bulbs/buzzers are added but the number of cells/battery remains the same.

I can explain what happens to other components in a circuit if the number of cells/batteries is increased or reduced.

I can explain why some metals are electrical conductors and others are insulators.

I can explain how current flows in a circuit and what happens if the current is changed or a part of the circuit does not work properly

I can explain how electrical appliances have safety features in their circuits to prevent electrocution or electric shock.

I can explain the dangers of working with electricity and the safety precautions which

I can explain how fossils are formed and what they tell us about animals/plants living in the past

I can describe key stages in the Earth's history and offer suggestions as to why different creatures/plants lived then compared to now

I can explain that some living things are able to survive better than others in different environments e.g. desert: cactus and camels; penguins in polar/sup-polar regions

I understand that in sexual reproduction, offspring inherit characteristics from each parent and will have features in common, but will not be the same as either.

I can explain that variation occurs in sexual reproduction

I can describe how the process of variation (or mutation) can give offspring an advantage over other offspring so they will be more successful.

I can explain that some animals/plants have evolved over time due to changes in the environment and positive physical traits which made them better able to survive and link this evidence in fossil record/geology of earth

I can explain that some organisms reproduce asexually and the offspring will be almost identical to the parent

I can make predictions based on evidence

I can ask different kinds of questions

I can identify appropriate secondary sources to research ideas and ask questions

I can recognise when to do comparative and fair tests

I can plan when to take repeat readings

I can decide how to record data

I can use varied ways to present data