



Subject
Animals including humans

Concept
Biology

Enquiry skills
Concluding

Prior Learning	New Learning	Future Learning
<p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>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.</p> <p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions</p>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p>In Key Stage 3 pupils will be taught about:</p> <p>The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases.</p> <p>The effects of recreational drugs (including substance misuse) on behaviour, health and life processes.</p> <p>The structure and functions of the gas exchange system in humans, including adaptations to function.</p> <p>The mechanism of breathing to move air in and out of the lungs.</p> <p>The impact of exercise, asthma and smoking on the human gas exchange system.</p>

### Sequence of Learning

- What is the circulatory system?
- What are the functions of the parts in the circulatory system?
- How can exercise, drugs and lifestyle affect our body functions?
- How are water and nutrients transported around our bodies?
- How are water and nutrients transported in animals' bodies?

Current Vocabulary	New Vocabulary
Organs	<u>Circulatory system</u>
Heart	Blood vessels
Blood	Pulmonary
Oxygen	Arteries
Carbon dioxide	Veins
Diet	Brain
Exercise	Lungs
Nutrients	<u>Health</u>
Lifestyle	Impact
Body function	Damage
Protein	Drugs
Fats	Alcohol
Carbohydrates	Substances
Dairy	Transported
Vitamins	
Minerals	

Trip/Visitor

Misconceptions	<p>your heart is on the left side of your chest • the heart makes blood • blood travels in one loop from the heart to the lungs and around the body • when we exercise, our heart beats faster to work the muscles more • some blood in our bodies is blue and some blood is red • we just eat food for energy • all fat is bad for you • all dairy is good for you • protein is good for you, so you can eat as much as you want • foods only contain fat if you can see it • all drugs are bad for you</p>
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Subject
Year 6
Electricity

Concept
Physics

Enquiry skills
Testing    Reporting

Prior Learning	New Learning	Future Learning
<p>Identify common appliances that run on electricity</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p>Use recognised symbols when representing a simple circuit in a diagram</p> <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</p>	<p>Pupils in Key Stage 3 will be taught about:</p> <p>Electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge.</p> <p>Potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.)</p> <p>Differences in resistance between conducting and insulating components</p>

Equipment
Batteries of different voltage, wires, switches, bulbs, buzzers

Sequence of Learning
<ul style="list-style-type: none"> <li>What are circuits? Retrieve how to set up, draw and label a simple circuit</li> <li>What is voltage?</li> <li>How does voltage affect the brightness of a lamp or volume of a buzzer?</li> <li>How do different components function?</li> </ul>

Current Vocabulary	New Vocabulary
<u>Electricity</u>	Voltage
Conductor	Components
Insulator	Symbols
<u>Circuits</u>	Diagram
Simple circuit	Buzzer
Complex circuit	Variations
Series circuit	
Bulb	
Cell	
Battery	
Wire	
Switch	
Motor	

Trip/Visitor
Thinktank Birmingham

Misconceptions	Larger-sized batteries make bulbs brighter · A complete circuit uses up electricity components in a circuit that are closer to the battery get more electricity.
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Subject
Light

Concept
Physics

Enquiry skills
Recording      Measuring

**Sequence of Learning**

- What is light? What is dark? Retrieval of Y3 learning
- How does light travel? Just cover straight lines.
- How does light travel to our eyes?
- How do we see objects?
- Why do shadows have the same shape as the object that casts them?

Current Vocabulary	New Vocabulary
Light	Pupil
Dark	Retina
Reflect	Straight line
Opaque	Light rays
Transparent	
Translucent	
Light source	
Absence of light	
Shadow	
Vision	

Prior Learning	New Learning	Future Learning
<p>Recognise that they need light in order to see things and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object.</p> <p>Find patterns in the way that the size of shadows change.</p>	<p>Recognise that light appears to travel in straight lines.</p> <p>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.</p> <p>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.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>	<p>Pupils in Key Stage 3 will be taught about:</p> <p>The similarities and differences between light waves and waves in matter.</p> <p>Light waves travelling through a vacuum; speed of light</p> <p>The transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface.</p> <p>Light transferring energy from source to absorber leading to chemical and electrical effects; photo-sensitive material in the retina and in cameras.</p> <p>Colours and the different frequencies of light, white light and prisms.</p>

Trip/Visitor

Misconceptions	We see objects because light travels from our eyes to the object.
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**Subject**  
Living things and their habitats

**Concept**  
Biology

**Enquiry skills**  
Identifying/ classifying

Prior Learning	New Learning	Future Learning
<p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Describe the life process of reproduction in some plants and animals.</p>	<p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>	<p>Pupils in Key Stage 3 will be taught about:</p> <p>Differences between species</p>

**Sequence of Learning**

- How can living things be grouped? Retrieval of mammals, birds, amphibians, reptiles and fish, plants (flowering. Non flowering) and their characteristics. Cover broad and specific characteristics
- What are microorganisms? How can microorganisms be classified? Cover broad and specific characteristics
- How can microorganisms, plants and animals be classified based off similarities and differences? Include diet, habitats, characteristics.
- Look back at classification groups from last lesson, give reasons for why they have grouped in this way.
- Double page spread

Current Vocabulary	New Vocabulary
Life cycle	Broad characteristics
Mammal	Specific characteristics
Fish	Similarities
Bird	Differences
Amphibian	Microorganisms
Reptile	
Flowering plant	
Non-flowering plant	
Habitat	
Classify	
Identify	
Group	
Characteristics	
Living	
Dead	
Carnivore	
Herbivore	
Omnivore	
Vertebrate	
Invertebrate	

**Trip/Visitor**

**Misconceptions** all micro-organisms are harmful • mushrooms are plants