



WENSLEY FOLD CE PRIMARY ACADEMY SCIENCE SCHEME OF WORK - YEAR 4

BIOLOGY – ANIMALS INCLUDING HUMANS

Key Learning Outcomes

At the start of this topic, assess children's prior knowledge by using a 'What I already know' mind map.

During this Science topic the pupils will be taught:

- To name the basic parts of the digestive system in humans.
 - mouth
 - tongue
 - teeth
 - oesophagus
 - stomach
 - small and large intestine
- To describe the simple functions of the parts of the digestive system.
- To identify the different types of teeth in humans and their simple functions.
 - Describe how teeth and gums have to be cared for in order to keep them healthy.
- To construct and interpret a variety of food chains, identifying producers, predators and prey.

To assess progress at the end of the topic, children must complete the 'What I know now' mind map.

Vocabulary

stomach	intestines	gullet	mouth	liver	canine	molar	premolar	incisor	saliva	digest	producer	predator
prey	decay	fibre	sugar	carbohydrate	fat	protein	vitamins	minerals				

Investigative skills

predict	prediction	aim	purpose	method	apparatus	equipment	measure	accurate	reliable	repeatable
analyse	diagram	fair test	relationship	trend	conclusion					



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BIOLOGY – LIVING THINGS and THEIR HABITATS

Key Learning Outcomes

At the start of this topic, assess children's prior knowledge by using a 'What I already know' mind map.

During this Science topic the pupils will be taught:

- To recognise that living things can be grouped in a variety of ways.
 - Pupils begin to put vertebrate animals into groups such as fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects.
 - Explore possible ways of grouping a wide selection of living things that include animals and flowering plants (including grasses) and non-flowering plants (ferns and mosses).
 - Use the local environment throughout the year to raise and answer questions that help them to identify and study plants and animals in their habitat.
- To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.
- To construct and interpret a variety of food chains, identifying producers, predators and prey.
- To recognise that environments can change and that this can sometimes pose dangers to living things.
 - Pupils should explore examples of human impact - both positive and negative - on environments.
Positive effects of nature reserves, ecologically planned parks or garden ponds
Negative effects of population and development, litter or deforestation

To assess progress at the end of the topic, children must complete the 'What I know now' mind map.

Vocabulary

climate	weather	temperature	classify	humidify	shelter	conditions	adapt	adaptation	species	invertebrate
vertebrate	bird	reptile	mammal	amphibian	fish					
Investigative skills										
predict	prediction	aim	purpose	method	apparatus	equipment	measure	accurate	reliable	repeatable
analyse	diagram	fair test	relationship	trend	conclusion					



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PHYSICS – SOUND

Key Learning Outcomes

At the start of this topic, assess children's prior knowledge by using a 'What I already know' mind map.

During this Science topic the pupils will be taught:

Vibrations

- To identify and describe how sounds are made, associating some of them with something vibrating.
 - Sounds can be made in a variety of ways (pluck, bang, shake, blow) using a variety of things (instruments, everyday materials, body).
- To recognise that vibrations from sounds travel through a medium to the ear.
 - Vibrations may not always be visible to the naked eye.
 - To find patterns between the volume of a sound and the strength of the vibrations that produced it.
 - To recognise that sounds get fainter as the distance from the sound source increases.
 - Sounds travel away from their source in all directions.

Pitch

- To find patterns between the pitch of a sound and features of the object that produced it.
 - Sounds can be high or low pitched.
 - The pitch of a sound can be altered.
 - Pitch can be altered by changing the material, tension, thickness or length of vibrating objects or changing the length of a vibrating air column.

Muffling/Blocking Sounds

- Sounds are heard when they enter our ears (although the structure of the ear is not important key learning at this age phase).
- Sounds can travel through solids, liquids and air/gas by making the materials vibrate.
- Sound travel can be reduced by changing the material that the vibrations travel through.
- Sound travel can be blocked.

To assess progress at the end of the topic, children must complete the 'What I know now' mind map.

Vocabulary

vibration	pitch	sound wave	volume	frequency	medium	auditory	particle	sound source	ear drum	vibrate
cochlea	hammer	anvil	stirrup	auditory nerve	brain	amplitude	transmit	absorb		

Investigative skills

predict	prediction	aim	purpose	method	apparatus	equipment	measure	accurate	reliable	repeatable
analyse	diagram	fair test	relationship	trend	conclusion					



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PHYSICS – ELECTRICITY													
Key Learning Outcomes													
At the start of this topic, assess children’s prior knowledge by using a ‘What I already know’ mind map. During this Science topic the pupils will be taught: ▪ To know and take the necessary precautions for working safely with electricity ▪ To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. ▪ To 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. ▪ I can describe the difference between a conductor and insulators; giving examples of each. ▪ To use recognised symbols when representing a simple circuit in a diagram. • Circuit diagrams can be used to construct a variety of more complex circuits predicting whether they will ‘work’. NOTE: The effect of changing components in a circuit can be linked to the amount of push from the batteries or the ease of flow of the electricity through devices (motors/bulbs/wires) e.g. a bulb might dim when more bulbs are added). Pupils are expected to learn only about series circuits, not parallel circuits. To assess progress at the end of the topic, children must complete the ‘What I know now’ mind map.													
Vocabulary													
conductor	insulator	switch	lamp	circuit	electricity	buzzer	brightness	dim	metal	plastic	cells	wires	fuse
shock	safety												
Investigative skills													
predict	prediction	aim	purpose	method	apparatus	equipment	measure	accurate	reliable	repeatable			
analyse	diagram	fair test	relationship	trend	conclusion								



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CHEMISTRY – STATES of MATTER

Key Learning Outcomes

At the start of this topic, assess children's prior knowledge by using a 'What I already know' mind map.

During this Science topic the pupils will be taught:

- To identify state of matter of materials (solid, liquid, gas) and group them accordingly.
 - Solids, liquids and gases can be identified by their observable properties.
 - Solids have a fixed size and shape (the size and shape can be changed but it remains the same after the action).
 - Liquids can pour and take the shape of the container in which they are put.
 - Liquids form a pool not a pile.
 - Solids in the form of powders can pour as if they were liquids but make a pile not a pool.
 - Gases fill the container in which they are put.
 - Gases escape from an unsealed container.
 - Gases can be made smaller by squeezing/pressure.
 - Liquids and gases can flow.
- To explore how some materials change state when they are heated or cooled.
 - Heating causes solids to melt to liquids and liquids to evaporate into gases. Cooling causes gases to condense to liquids and liquids to freeze to solids.
- To measure or research the temperature at which change can happen in degrees Celsius (°C).
 - Measuring temperature tells us how hot or cold something is.
- To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
 - Evaporation happens when water is heated/warmed and changed into a gas.
 - Condensation happens when water vapour in the air turns into a visible liquid.
 - Evaporation and condensation are changes that can be reversed
 - The water we use has been used before.
 - Evaporation and condensation are an important part in the water cycle.

NOTE: Teachers should avoid using materials where heating is associated with chemical change, for example, through baking or burning.

To assess progress at the end of the topic, children must complete the 'What I know now' mind map.



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Vocabulary											
solid	liquid	gas	state	melting	boiling	evaporation	condensation	water cycle	temperature	thermometer	degrees
celsius (°C)	electricity										
Investigative skills											
predict	prediction	aim	purpose	method	apparatus	equipment	measure	accurate	reliable	repeatable	
analyse	diagram	fair test	relationship	trend	conclusion						