

Science Focus		Animals, including humans	Year 6		Autumn 1	
What? (Key Kno The human circulato		(nowledge)	Health risks that can damage the	 Smoki Drugs Alcoho Obesit 	ng ol	
The main parts of the circularity system	 Heart Blood V Blood 	essels	Dangers of smoking	 Addictive Can cause heart disease and cancer 		
What does the heart do?	The hea through food and the part	rt pumps the blood blood vessels so that the d oxygen can get to all s of the body	Dangers of drugs	 Addict Can da death 	 Addictive Can damage the brain or cause death OK in small amounts for adults Can damage the liver, heart and stomach 	
What do the blood	The bloc blood ar	od vessels carry the round the body.	Dangers of alcohol	 OK in Can da stoma 		
vessels do?			Statutory requirements			
of blood vessel	 away from the heart The capillaries – enable the actual exchange of energy between the blood and the tissues The veins – carry blood from the capillaries back towards 		 Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans. 			
What does Plood		eart	What? (Key vocab)			
the blood	around	the body	Spelling		Definition	
Healthy L		ifestyle	Oxygen	A key pa	A key part of the air we breathe in	
Things humans	 To have a balanced diet of the right amount of different types of food and drink To exercise regularly To be hygienic 		Addictive	Substance that causes you to need more and more (out of control)		
need to be healthy			Vein	A blood that is lo heart	vessel that carries blood ow in oxygen towards the	
What is a balanced diet	• See the Ea https://www lications/the-	See the Eatwell Guide: <u>https://www.gov.uk/government/pub</u> lications/the-eatwell-guide		A blood away fro	vessel that carries blood om the heart	
	• Drink 6-8 §	glasses of fluid each day	Capillaries	Tiny blo and nut remove	od vessels that bring oxygen rients to the tissues and waste products	

Possible experiences

- Making a circulatory system with a pump
- Making your own blood with edible ingredients <u>https://www.risingstars-uk.com/blog/may-2018/a-bloody-investigation</u>
- Finding out what causes the heart to work harder/maximise heart rates or reverse through guided meditation



Science Focus	Electricity	Year 6	5	Autumn 2	
What? (Key K	Kay Scientists				
Electricity is a form of ene to make thing	ergy. Energy is needed	Thomas Edison (1847-1931)	Inventor of the fuse.		
Electrons are small part electric c	Benjamin Franklin (1706- 90)	Showed that lightning is caused by electricity			
The flow of electrons in a current. An electric curre there is a comp	a circuit is known as a nt can only flow when plete circuit.	Charles Augustine	Invented instruments for measuring the forces between magnets and		
A bulb in the circuit slov flow of electricity. More will slow down the flow e become di	1806).	measuring an amount, of electricity is named after him. One coulomb is the amount of electricity that flows past any point when a current of one			
Materials that allow elec them are electric Insulators are materia	Alessandro Volta (1745-1827)	Invented the first battery. The volt, the unit of electromotive force, is named after him.			
Battery Wire	Bulb Buzzer	Andre-Marie Ampere (1775- 1836).	Showed h of electric circuit. Th in units ca short. On million ,m second.	now to measure the amount c current flowing through a nus, the current is measured alled amperes, or amps for e amp is a flow of about 6 nillion, million electrons per	
(M) -0'0-	00-	What? (Key vocab)			
Motor Switch (off) • Statutory re	Switch (on)	components	cell, batte buzzer, cro switch	ry, bulb, bulb holder, ocodile clip, leads, wires,	
 associate the brightness volume of a buzzer with 	s of a lamp or the	describing	brighter, d	luller, slow, fast, quiet, loud	
 voltage of cells used in t compare and give reaso 	conductor	a material or device which allows heat or electricity to carry through			
brightness of bulbs, the and the on/off position	insulator	a material or device that does not allow electricity to pass through it light, sound, movement, heat			
use recognised symbols simple circuit in a diagra	effects of electricity				
Possible experiences					

- construct simple series circuits, to help answer questions about what happens when you try different components, for example, switches, bulbs, buzzers and motors.
- learn how to represent a simple circuit in a diagram using recognised
- work scientifically by systematically identifying the effect of changing one component at a time in a circuit; designing and making a set of traffic lights, a burglar alarm or some other useful circuit.

Science Focus		Evolution and Inheritance	Year 6		Spring 2	
What? (Key Knowledge)			Statutory Requirements			
How are fossils formed and why are they important?	SilsFossils are found in sedimentary rocks. These rocks form layers so dead animals and plants can get trapped between the layers. When palaeontologists compare fossils to animals today, they can see similarities and identify relationships between them.		 Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. To be able to identify how animals are adapted to suit their environment in different ways. To recognise and understand that adaptation may lead to evolution. 			
What influences our characteristics?	Some characteristics are inherited from our parents through our genes (e.g. eye colour, hair colour) while other characteristics come from choices we make and the way that we live, such as where we live, the food we eat or exercise we take (environmental characteristics).					
			What? (Key vocab)			
Why is	Some animals have changed over time to suit their habitat. Adapting to suit a particular environment is essential because it helps the animal to survive.		Spelling		Definition	
adaptation an important process?			Adaptation	The pr organism suite	ocess of change so that an or species can become better ed to their environment.	
Why does evolution occur?	Evolution occurs when there is competition to survive (natural selection). The winners are those who best adapt as they are more likely to reproduce and pass on their useful characteristics. Whereas, individuals that are poorly adapted are less likely to survive and therefore their	Environment	The surro a pers	undings or conditions in which son, animal, or plant lives.		
		Evolution	The proce living or developed	ess by which different kinds of ganism are believed to have I from earlier forms during the history of the Earth.		
	inherited. Over time, the characteristics that help survival become more common and a species gradually		Fossil	The r prehistorio	emains or impression of a c plant or animal embedded in rock and preserved.	
Diagrams and Symbols			Inheritance	To gaiı genetica	n a quality or characteristic Ily from a parent or ancestor.	
		e & &	Offspring	A person'	s child/children or an animal's young.	
Paddling along on water-duck.			Selective breeding	The pro animal br develop choosing	ocess by which humans use reeding and plant breeding to o selective characteristics by particular animals and plants.	
			Reproduction	The prod	uction of offspring by a sexual or asexual process.	
			Possible Experiences			
			 Using real life fossils to explore the past. Constructing a family tree to explore traits that have been inherited. Visiting a wildlife park/reserve to investigate how animals have evolved and adapted in order to 			

become more suited to their environment.

Gripping onto bark Hopping and clinging onto branches—pigeon.



Stivialy	Clay Plillary Aca	uenny –		neuge	Organiser	
Science Focus	Light		Year 6		Spring 1	
What? (Key	Knowledge)		1	Nhat? (K	ey vocab)	
Li	ght	Sne	alling		, , , Definition	
We need light to be able to see things. Light waves travel out from sources of light in straight lines. These are often called rays or beams of light.			ight	A form of energy that travels in a wav from a source.		
		Light	source	An object	that makes its own light.	
How shado A shadow is alwo as the object the	Refl	lection	Reflection is when light bounces off a surface, changing the direction of a ra of light.Refraction happens when objects slow down the light beam and it deflects from its path (slightly changes its direction).A dark area or shape produced by a body coming between rays of light an a surface.			
because when an the path of light light source, it v rays that hit it, v light can cont	Refr	raction				
	Sh	adow				
Light travelling through objectsTransparent• Describes objects that let light travel through them easily, meaning you can see through the object.Translucent• Describes objects that things les some light through, but scatters the light so we can't see them properly.Opaque• Describes objects that do not let		Light travels as a wave. But unlike waves of water or sound waves, it does not need a medium to travel through. This means light can travel through a vacuum - a c om pletely airless space. • Statutory requirements				
					Light from the sun travels in a strait is then reflected off the chair and the enabling her	ght line and hits the chair. The light ray ravels in a straight line to the girl's eye, to see the chair.
	Possible	e experie	nces			
Making a kaleidoscope	or/and periscope					

- Investigate how much light passes through different materials
- Use increased knowledge to create protective systems against too much light. ٠



Science F	ocus Living Things and their Habitats	Year 6			
v	/hat? (Key Knowledge)	Statutory requirements			
	<u>Habitats</u>	Pupils should be taught to:			
Environment	Environment Identify and name a variety of common animals that are birds, fish, amphibians, reptiles and mammals and the differences in their environments.		 Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals 		
Food chains and their significance	Food chains are a map of the flow of energy from a plant (primary producer) through consumers,	 Give reasons for classifying plants and animals based on specific characteristics 			
	(primary consumers) and hunters Classifying Plants and Animals	What? (Key vocab)			
	(secondary consumers).	Spelling		Definition	
Describe, compare and contrast	Describe and compare the structure of a variety of common animals	Organism	An individual living thing, such as a plant, an animal, or a bacteria.		
	(birds, fish, amphibians, reptiles and mammals, and including pets). Identify, name, draw and label food chains and ecosystems.	Classifying	To put into groups according to things that are similar.		
		Unique	Being th	e only one of its type.	
	Living Things	Vertebrate	Having a backbone		
Identify and	 Invertebrates (e.g. crab, worm) Fish (e.g. goldfish, cod, shark) Amphibians (e.g. frog, toad) Reptiles (e.g. snake, crocodile) Birds (e.g. robin, chicken, owl) Mammals (e.g. human, dog) Plants Micro-organisms 	Invertebrate	Without a backbone		
show understanding of the differences between living things		Mammal	Any animal that has hair and feeds its babies with milk from the mother.		
		Ecosystem	A community of living things, together with their environment.		
Classify and		Habitat	The natural environment of an animal or plant		
Identify	common animals and plants and classify them under a set of specific criteria	Food chain	A series of living beings in which each serves as food for the next.		
	Possible experiences	Diagrams and Pictures			
 Finding and classifying animals in the school environment Looking closely at the features of animals using hand lenses Visit from the 'animal person' to introduce less common animals (snakes and reptiles, spiders) Design a set of identification cards. Pupils in the school to classify and identify animals and plants in the school and local environment 		PLANTS DON'T MAKE SEEDS MAKES SEEDS Has no true roots, or leaves Has no roots, strueture Has no roots, true roots, or leaves ALOAE Mosses			