Year 6 Autumn 1st Half Evolution and Inheritance

Humans are 99.9% all the same, but the other 0.1% contains enough DNA information to make us all different! Some animals are bred to make products and others for scientific research. Animals can also be bred for cultural or ethical reasons, or to be kept as pets.



KEY VOCABULARY

Learn these words and their definitions.

Key Word	Definition
evolution	A process of formation, growth or development.
inheritance	A quality, characteristic or trait which is passed down generations.
DNA	The material in chromosomes that transfers genetic information in all life forms (Deoxyribonucleic acid).
natural selection	Coined by Charles Darwin, it means the survival and reproduction of the fittest species.
ancestor	A person from whom one is descended.
husbandry	The care, cultivation and breeding of crops and animals.
generation	A group of individuals belonging together at the same time period.
fossilisation	The process of an animal or plant being turned to stone.



Charles Darwin and Natural Selection

- Different species of animal had evolved from one shared ancestor.
- Animals had adapted to suit the habitats and environments they live in.
- Those animals that didn't adapt had become extinct. Called the 'Survival of the Fittest.'
- Many religious people were angry at his theory to start with.



Genetic Modification

Pros	Cons
 Can protect crops	 We don't know the
and mean the	long-term effects of
produce has less	safety Research isn't yet
disease. The produce can be	finished Could cause more
bigger and tastier Can mean lower cost	allergies or diseases fo
to consumer.	consumers



Q1. What is a GM crop? A1. This means 'genetically modified' and is one which scientists have altered to protect against disease. Q2. Who was Mary Anning?

A famous palaeontologist who discovered lots of fossils.

Q3. What are fossils? Casts of dead organisms who were alive millions of years ago.



Unit: Evolution and Inheritance

This unit is designed to help you learn about the history of organisms (animals and plants) and how they need to adapt to survive. From Darwin's theory of natural selection, to genetic modification and cloning today, you will gain an understanding of how inheritance and genetics works.

You will also gain an understanding of what history tells us, such as fossils and geology. It really is a fascinating subject to see how life on earth has evolved over all these years!

Year 6	Autumn 2 nd Half Electricity	a light is switched on, y ending a flow of electro around the circuit.	you ons good cond	s such as copper, m, zinc and gold are ductors of electricity.	Light bulbs turn electricity into light due to resistance.
KI	EY VOCABULARY Learn these words	Electric circuit	THERMISTOR LAMP	FACTOIDS: Can you find out more?	Lesson Sequence
Key Word	Definition	symbols \rightarrow $+$ $ -$		Q1. How is static electricity	•Explain how objects become charged
static electricity	Electricity that collects on the surface of an object, which can cause an electric shock.		Describe the parts of an electric circuit		
filament	A thin piece of wire with a high melting point, used in bulbs.			torch work? It works through a dynamo	•Explain how voltage affects bulb brightness
voltage	An electric force which 'pushes' the electric current round the circuit.		A simple	which turns mechanical energy to electrical energy through a simple electromagnet	Compare electrical conductors and insulators
insulator	A material which doesn't conduct electricity.		circuit	Q3. How are insulators helpful?	•Build a set of traffic lights
conductor	A material that electricity can flow through easily.			They prevent electric flow so you don't receive an electric shock! Unit: Electricity	•Explain how variable resistors car work like a switch
fuse	A safety device on a circuit that can stop current from flowing if it becomes overheated.				
component	An individual part in an electronic circuit.		+	This unit will help you explore different types of electricity as well as understanding what makes up a circuit. You will learn about this by	
variable resistor	A device which varies the amount of electric current allowed to flow through a circuit.	Atom structure		studying circuit diagrams and by building your own circuits. You wi also think about what materials conduct and which insulate, so you know about safety with electricity. It will also help you learn about the importance of saving energy.	

Electron

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Understanding electricity is important for many careers which involve circuitry and installation of electrical devices. It is also helpful for being able to do quick jobs safely and with knowledge.

Light sources can be both natural and man-made.

A lens is a piece of transparent glass or plastic that bends light.

KEY VOCABULARY Learn these words and their definitions. **Key Word** Definition An object or material that allows transparent light to pass through easily. An object or material which opaque doesn't allow light through. translucent An object or material which allows some light to pass and scatters light rays. To make an image larger. magnify angle of The angle made by a light ray as it strikes a mirror. incidence The angle made by a light ray as angle of reflection it reflects off a mirror. A transparent material which lens changes the direction of movement of light.

refraction The action of distorting an image by viewing through a medium.

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Light only travels in straight lines.

Unit: Light

This unit will help you understand how light travels, as well as exploring how the path and colour of light can change. A key focus is lenses, and how lenses in our eye, in cameras and in can change the way we view an object.

It is important to think about how lenses are used in research and industry, which is why many of the activities in this unit will help you build your own lenses or observe objects through a lens. We take light for granted, but it is amazing how it moves, reflects and change.

KE` L ar	YOCABULARY earn these words of their definitions.	MRSGREN : Processes	FACTOIDS:	Lesson Sequence
Key Word	Definition	Sensitivity	Can you find out more?	
classify	To organise by class, which is a group that has something in common.	Growth Reproduct:	Q1. What is soil a habitat to? A1. Soil mainly contains	•Explore the kingdoms of life
prokaryote	A cellular organism which has no nuclear membrane.	Nutrition	Q2. What is an ecosystem?	•Describe the work of Carl Linnaeus
species	The smallest class of organisms.	Classification	A community of interactive living things which rely on each other to live and grow.	•Identify different classes of vertebrates
vertebrate	An animal with vertebrae – having a backbone or spinal column.	Vertebrates Invertebrates Warm-Blooded Cold-Blooded With Jointed Legs Without Legs	Q3. What does Homo Sapiens mean?	•Explore soil habitats
invertebrate	An animal without a backbone or spinal column.	Varmals Bids Fish Beptiles Amphibans With note that crieges Worm-like Worm-like	Home is the Latin word for man and sapiens means wise.	Describe different types of fung
microorganism	A tiny, microscopic organism such as bacteria, virus or fungus.	Bear Doutch Salmon Turtle Frog Ant Scorpen Earthworm Rule Worm		6 and yeast
fungi	A diverse kingdom which includes mushrooms to brewer's yeasts.	Tiger Peacock Goldfish Crocodile Toad Cockroch Spider Leech Tapeworm Whale Eagle Guppy Snake Newt Lodybug Millipede	Unit: Living Things and This unit is designed to help you classified and how they interact w	d their Habitats understand the way living things are with each other for survival. You can
kingdom	A category grouping together all forms of life, having certain characteristics in common.	Prokaryote Cell	learn about how to think about di MRSGREN. This unit can also he habitats and how we should help	fferent living things by the mnemonic Ip you think about the importance of conserve them.

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PRIMARY SCHOOL & NURSERY CHALLENGE • ACHIEVE • RESPECT • EFFORT researchers. In any case, we rely on the animal and plant kingdoms to survive, so it's best we know how to conserve them!

Year 6 Summer 1st Half Animals including humans – Blood and transportation

Bacteria can help break down decaying material so nutrients are free to be used by plants. A phlebotomist is the name give to a nurse who takes blood samples to find a diagnosis. Karl Landsteiner was a scientist who found that there is more than one blood type in humans.



KEY VOCABULARY

Learn these words and their definitions.

Key Word	Definition
transfusion	The process of adding an amount of blood to the body.
plasma	A thin yellow liquid which the formed elements are suspended in.
pancreas	A gland which sits behind the stomach, produces enzymes for digestion.
diabetes	A condition that occurs when the body can't use glucose.
transportation	The movement of something from one place to another.
spleen	An organ which removed damaged red blood cells from the blood.
alveoli	Tiny sacks which in the lungs which fill with air to allow oxygen to enter the blood.
bacteria	A type of microscopic unicellular organism.



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Diabetes

Diabetes is an illness of the pancreas, where it can't produce enough insulin.

• It means the amount of sugar in the blood can't easily be controlled.

 People who suffer from diabetes may have to inject themselves with insulin.



Platelets



FACTOIDS: Can you find out more?

Q1. What is blood?
A1. Blood is composed of a liquid called plasma, bed blood cells, white blood cells and platelets.
Q2. Are all bacteria bad?
A2. No! The bacteria which lives in our gut helps us stay healthy.
Q3. Why does blood need to be filtered?
A3. To removed damaged red blood cells and to
remove substances which could make us ill.

1. Describe the composition of blood 2. Explain how blood is filtered 3. Describe how oxygen is moved around the body 4. Explore blood transfusion 5. Describe how diabetes is managed 6. Describe the roles of bacteria

Lesson Sequence

Unit: Animals including humans – Health

This unit will help you learn about blood and how our body looks after it. You will learn about some diseases that can't be avoided and some that can, by leading a healthy lifestyle. You will also begin thinking about bacteria and how some types of bacteria help us stay healthy.

This may help you think about your own lifestyle and think about how to stay fit and healthy in your teenage and adult years. Year 6 Summer 2nd Half Animals including humans – The heart and health

A healthy heart beats between 60 and 100 times a minute. Regular exercise will help keep your heart healthy.

Arteries transport blood away from the heart and veins transport blood back to the heart.



ROCKET WORDS Learn these words and their definitions.

•			
Key Word	Definition		
blood vessels	The tubes through which blood flows around the body.		
circulatory system	The system which circulates blood through the body.		
oxygenated	When blood is enriched with oxygen from the lungs.		
capillary	A very thin tube which carries blood around the body.		
heart rate	The speed at which the heart beats or the number of times it beats in a particular period.		
addiction	An inability to stop consuming a substance.		
nutrients	Something from food that helps living organisms to live and grow.		
balanced diet	A healthy way of eating which ensures that the body has all the essential nutrients needed.		



Circulatory System

Heart

• See diagram above

blood vessels

- arteries
- veins
- capillaries

Blood

- plasma
- red blood cells
- white blood cells
- platelets



Unit: Animals including humans - the heart and health

This unit is designed to help you understand one of body's many important systems – the circulatory system. This system is responsible for pumping blood around our body to transport oxygen, water and nutrients. It is a very complex system which is composed of the heart, blood vessels, and blood.

You will also learn the importance of exercise and healthy eating when it comes to a strong circulatory system.

