



THE S ENGOINT TIPES.	
Research using secondary sources.	
Comparative and fair testing.	
Observing over time.	
Pattern seeking.	
dentifying, classifying, and grouping	
AUTUMN	SPRING
AUTUMN 1: BIOLOGY-EVOLUTION AND INHERITANCE	SPRING 1: BIOLOGY – ANIMALS INCLUE
-Recognise that living things have changed over time	-Identify and name the main parts of th
and that fossils provide information about living things	circulatory system, and describe the fur
that inhabited the Earth millions of years ago	heart, blood vessels and blood
-Recognise that living things produce offspring of the	-Recognise the impact of diet, exercise,
same kind, but normally offspring vary and are not	lifestyle on the way their bodies functio
identical to their parents	-Describe the ways in which nutrients a
-Identify how animals and plants are adapted to suit	transported within animals, including h
their environment in different ways and that adaptation	Main Enquiry Types
may lead to evolution.	Research using secondary sources.
Main Enquiry Types	Identifying, classifying and grouping.
Research using secondary sources.	WORKING SCIENTIFICALLY
Comparative and fair testing.	-Recording data and results of increasing co
Observing over time.	scientific diagrams and labels, classification
Pattern seeking.	graphs, bar and line graphs
Identifying, classifying and grouping.	-Reporting and presenting findings from end
WORKING SCIENTIFICALLY	conclusions, causal relationships and explan
-Planning different types of scientific enquiries to answer	displays and other presentations
questions, including recognising and controlling variables	uispiuys unu otner presentutions

THE 5 ENOLIRY TYPES

AUTUMN	SPRING	SUMMER
AUTUMN 1: BIOLOGY-EVOLUTION AND INHERITANCE	SPRING 1: BIOLOGY – ANIMALS INCLUDING HUMANS	SUMMER 1/2: PHYSICS – LIGHT
-Recognise that living things have changed over time	-Identify and name the main parts of the human	-Recognise that light appears to travel in straight lines
and that fossils provide information about living things	circulatory system, and describe the functions of the	-Use the idea that light travels in straight lines to
that inhabited the Earth millions of years ago	heart, blood vessels and blood	explain that objects are seen because they give out or
-Recognise that living things produce offspring of the	-Recognise the impact of diet, exercise, drugs and	reflect light into the eye
same kind, but normally offspring vary and are not	lifestyle on the way their bodies function	-Explain that we see things because light travels from
identical to their parents	-Describe the ways in which nutrients and water are	light sources to our eyes or from light sources to
-Identify how animals and plants are adapted to suit	transported within animals, including humans.	objects and then to our eyes
their environment in different ways and that adaptation	Main Enquiry Types	-Use the idea that light travels in straight lines to
may lead to evolution.	Research using secondary sources.	explain why shadows have the same shape as the
Main Enquiry Types	Identifying, classifying and grouping.	objects that cast them.
Research using secondary sources.	WORKING SCIENTIFICALLY	Main Enquiry Types
Comparative and fair testing.	-Recording data and results of increasing complexity using	Research using secondary sources.
Observing over time.	scientific diagrams and labels, classification keys, tables, scatter	Comparative and fair testing.
Pattern seeking.	graphs, bar and line graphs	Pattern seeking.
Identifying, classifying and grouping.	-Reporting and presenting findings from enquiries, including	WORKING SCIENTIFICALLY
WORKING SCIENTIFICALLY	conclusions, causal relationships and explanations of and	-Planning different types of scientific enquiries to answer
-Planning different types of scientific enquiries to answer	degree of trust in results, in oral and written forms such as	questions, including recognising and controlling variables
questions, including recognising and controlling variables	displays and other presentations	where necessary
where necessary	-Identifying scientific evidence that has been used to support or	-Taking measurements, using a range of scientific
-Recording data and results of increasing complexity using	refute ideas or arguments.	equipment, with increasing accuracy and precision, taking
scientific diagrams and labels, classification keys, tables,	<u>SPRING 2: BIOLOGY – LIVING THINGS AND THEIR</u>	repeat readings when appropriate
scatter graphs, bar and line graphs	HABITATS	
-Reporting and presenting findings from enquiries, including		
conclusions, causal relationships and explanations of and		





degree of trust in results; in oral and written forms such as displays and other presentations regute ideas or arguments: Associate the brightness of a lamp or the volume of a displays and other presentations and base. Cassification keys, tables, scatter graphs, bar and lang graphs the loudness of buzzer with the number and voltage of cells used in the crout compare and give reasons for variations in how compare and single reasons for variations in how compare and single reasons for variations in how compare and give reasons for variati		YEAR 6 STATUTORY REQUIREIVIENTS	
	degree of trust in results, in oral and written forms such as displays and other presentations Identifying scientific evidence that has been used to support or refute ideas or arguments. AUTUMN 2: PHYSICS – ELECTRICITY -Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit -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 -Use recognised symbols when representing a simple circuit in a diagram. Main Enquiry Types Comparative and fair testing. Observing over time. Pattern seeking. <i>WORKING SCIENTIFICALLY</i> -Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate -Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs -Using test results to make predictions to set up further comparative and fair tests -Reporting and presenting findings from enquiries, including conclusions, causal relationships and	 -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 -Give reasons for classifying plants and animals based on specific characteristics. Main Enquiry Types Research using secondary sources. Pattern seeking. Identifying, classifying and grouping. WORKING SCIENTIFICALLY -Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs -Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations -Identifying scientific evidence that has been used to support or refute ideas or arguments. 	-Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs -Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations -Identifying scientific evidence that has been used to support or refute ideas or arguments.





explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

KNOWLEDGE TO BE LEARNED BY THE END OF EACH UNIT (WHAT DO WE WANT THE CHILDREN TO KNOW AND REMEMBER?)

AUTUMN	SPRING	SUMMER
AUTUMN 1: BIOLOGY-EVOLUTION AND INHERITANCE	SPRING 1: BIOLOGY – ANIMALS INCLUDING HUMANS	SUMMER 1/2: PHYSICS – LIGHT
OFFSPRING	THE CIRCULATORY SYSTEM	<u>LIGHT</u>
 that offspring are produced by animals of 	• This is a system which includes the heart, veins,	• that light is a form of energy that travels in a
plants of the same species through	arteries and blood transporting substances	wave from a source.
reproduction.	around the body.	• We need light to be able to see things.
 The offspring produced are similar to their 	• The heart is an organ which constantly pumps	Light waves travel in straight lines
parents but not identical.	blood around the circulatory system.	(rays/beams).
INHERITANCE	 The heart pumps blood to the lungs to get 	• Light rays/beams are reflected off objects and
• This is when characteristics are passed on to	oxygen. It then pumps this oxygenated blood	travel in a straight line to a person's eye,
offspring from their parents.	around the body.	enabling them to see the object.
 that eye colour is an example of an inherited 	BLOOD VESSELS	Light does not need a medium to travel
trait but so are things like hair colour, the shape	 These are the tube-like structures that carry 	through.
of earlobes, rolling your tongue and whether or	blood through the tissues and organs.	REFLECTION
not you can smell certain flowers.	• Veins, arteries and capillaries are the three types	• A reflection is when light bounces off a
VARIATION	of blood vessels	surface, changing the direction of a ray of
 that variation refers to the differences between 	 Capillaries are the smallest blood vessels. 	light.
individuals within a species.	 The arteries carry oxygenated blood away from 	• the law of reflection states that the angle of
ADAPTATION	the heart.	incidence is equal to the angle of reflection.
 an adaptation is a trait (or characteristic) 	 Veins carry deoxygenated blood toward the 	REFRACTION
changing to increase a living things chances of	heart.	• refraction is when light bends as it passes
surviving or reproducing.	BLOOD	from one medium to another.
 Characteristics are influenced by the 	 that blood transports gases (mostly oxygen and 	SHADOW
environment the living things live in.	carbon dioxide), nutrients (including water) and	 that a shadow is an area of light that has
EVOLUTION	waste products.	been blocked.





• Evolution is **adaptation** over time (gradual).

NATURAL SELECTION

• this is the process where **organisms** that are better adapted to their environment tend to survive and produce more offspring.

FOSSILS

- Fossils are the remains or imprint of a prehistoric plant or animal, **embedded** in rock and **preserved**.
- Fossils let scientists know how plants and animals used to look millions of years ago (proof of evolution).

AUTUMN 2: PHYSICS – ELECTRICITY

• To explain the importance of the major discoveries in electricity.

CIRCUITS

- a circuit is a path that an electrical current can flow around.
- A series circuit is a circuit that has only one route for the current to take.
- In a series circuit, if more bulbs/buzzers are added, the power has to be shared and so they will be dimmer or quieter.
- If one part of a series circuit breaks, the circuit is broken and the flow of the current stops.

VOLTAGE

- that voltage is the force that makes the **electric current** move through the wires.
- The greater the voltage, the more current will flow.

SCIENCE PROGRESSION IN SKILLS AND KNOWLEDGE YEAR 6 STATUTORY REQUIREMENTS

- Platelets help a person to stop bleeding.
- Red blood cells carry oxygen through your body.
- White blood cells fight infection.

DRUGS AND ALCOHOL

- a drug is a substance containing natural or manmade **chemicals** that has an effect on your body when it enters your system.
- Drugs, alcohol and smoking can have negative effects on the body.

EXERCISE

 that regular exercise can: strengthens muscles including the heart muscle; improves circulation; increases the amount of oxygen around the body; releases brain chemicals which help you feel calm and relaxed; helps you sleep more easily; strengthens bones and stop us from getting ill.

NUTRIENTS

- Nutrients are substances that animals need to stay alive and healthy.
- a healthy diet involves eating the correct type of nutrients in the right amounts.

<u>SPRING 2: BIOLOGY – LIVING THINGS AND THEIR</u> <u>HABITATS</u>

CLASSIFICATION

• To classify is to **sort** things into different groups according to characteristics.

- A shadow is always the same shape as the object that casts it.
- shadows can either be **elongated** or **shortened** depending on the angle of the light source.
- a shadow is also larger when the object is closer to the light source: this is because it blocks more of the light.

TRANSPARENT, TRANSLUECENT AND OPAQUE

- **Transparent** describe objects that let light travel through them easily, meaning we can then see the object.
- **Translucent** describes objects that let some light through but scatters the light so that we can't see through them properly.
- **opaque** describe objects that do not let any light pass through them.





YEAR 6 STATUTORY REQUIREMENTS		
<u>CELL/BATTERY</u>	• living things can be classified by eight levels. The	
 a cell is a single unit. 	number of living things in each level gets smaller	
 a battery is a collection of cells. 	until the one animal is left in its species level.	
<u>CURRENT</u>	 that each group allows scientists to observe and 	
 that current is the flow of electrons, measured 	understand the characteristics of living things	
in amps.	more clearly.	
	They group similar things together then split the	
	groups again and again based on their	
	differences.	
	TAXONOMISTS/KEYS	
	• A taxonomist is a scientist who classifies different	
	living things into categories according to their	
	similarities and differences.	
	 A key is a series of questions about the 	
	characteristics of living things. It is used to	
	identify a living thing or decide which group it	
	belongs to.	
	MICROORGANISMS	
	• this is an organism that can only be seen using a	
	microscope.	
	 Some animals (dust mites) and plants 	
	(phytoplankton) are also microorganisms.	
	Bacteria is a single-celled microorganism.	
	• Good (cheese, yoghurt) and bad (salmonella,	
	plague) bacteria exist.	

SCIENCE PROGRESSION IN SKILLS AND KNOWLEDGE

Children working at below Age Related Expectations in SCIENCE at the end of Year 6:



