





Science Progression of Knowledge and Skills EYFS – Year 6

		EYFS		
UTW: Science	I wonder who lives in the forest? I wonder what's in the sky?	Vocabulary		
The Natural World	 explore the natural world describe what they see, he understand the effect of control Explore the natural world are plants; Know some similarities and environments, drawing on the Understand some important the seasons and changing see 	Spring, Summer, Autumn, Winter, seasons, weather, change, environment, same, different, compare, natural, investigate, explore, predict, melt, freeze, liquid, solid		
Managing Self	including: regular physica routine.	different factors that support the all activity, health eating, toothb giene and personal needs, includi	eir overall health and wellbeing rushing, having a good sleep ng dressing, going to the toilet, and	Clean, healthy, exercise, mindfulness, mental health, germs, sleep, illness, fruit, vegetables, wellbeing, regulate
Opportunities & Experiences	enhancements are made to Through our 'I Wonder' ther they know. The adults deve vocabulary and encouraging In Forest school they focus Opportunities for investigati water play, Natural art and o	o follow children's interests, seaso me children have opportunities to elop the children's curiosity by usi g them to predict and try out new on naming things in the natural w	observe, notice and explain what ng questioning, developing ideas. vorld. ous Provision through resources like ves.	Explore, investigate, predict, evaluate, notice, observe, wonder, identify, measure





		Y	EAR 1 – MATERIAI	LS		
Science - Materials What is a material?	What are some everyday materials?	Which materials are used in objects?	What material is most popular around school?	Is it absorbent or waterproof?	Is it transparent or opaque?	vocabulary
Learning objective	Know what a material is and name some everyday materials.	Know that objects can be made from different materials.	Identify common and uncommon materials around school.	Know the difference between absorbent and waterproof. Know which materials have either properties.	Know the difference between transparent and opaque. Know which materials have either properties.	Everyday Common Uncommon Material object
Identifying and naming	Wood, glass, plastic, metal, paper, fabric	Name the material an object is made from. Know that objects can be made from more than one material.				Wood, glass, plastic, metal, paper and fabric. Properties
Properties and uses	To explain what is noticed about different materials.			Waterproof (stop water getting through) Absorbent (socks up and holds onto water)	Transparent – see through Opaque – cannot see through it.	Group Predict Tally chart Absorbent
Change				Observe and comment on changes that happen in response to water.		Waterproof Investigate Transparent Opaque
Working scientifically		Group objects according to their materials.	Make predictions. Create a tally chart and interpret it. Discuss reasons for findings.	Make predictions and investigate what materials/objects are absorbent and waterproof.	Sort materials into two groups and discuss reasons or benefits to being transparent/opaque.	Benefit
Real life science	History toyo (vad		nt materials to a sec	made from	l	
Cross-curricular links	History – toys (und	erstanding the differe	ent materials toys are	e made from)		

		YEAR 1 - FO	RCES AND SPACE	E: SEASONAL CHA	ANGES KAPOW		
Science What changes do seasons bring?	How does the season affect the weather?	What activities happen in each season?	How do trees change?	Why does the length of day and night time change?	What changes in each season? (lesson to be done again as part of Geography)	What are weather reports?	Vocab
Learning Objective	To identify how the weather changes across the 4 seasons.	To identify events and activities that take place in each season.	To recognise how trees change across the 4 seasons.	To recognise that daylight hours change across seasons and record data in a pictogram.	To observe changes over time and gather and record information.	To plan and carry out a weather report.	conclusion data deciduous tree evergreen tree pictogram
Knowledge and understanding	To know the name of the four seasons; spring, summer, autumn and winter. To know the 12 months of the year.	To know different events that take place in each of the seasons. To know appropriate clothing for each season.	To know the name and order of the four seasons. To know what happens to trees in each season. To know the difference between deciduous and evergreen trees.	To know which seasons have the most and fewest daylight hours.	To know that a thermometer is used to record temperature. To describe changes that take place in each season.	To know why we have weather reports and where they can be found.	predict record season sunrise sunset symbol temperature thermometer weather
Forces in motion	To know weather associated with the four seasons and how it changes (in the UK).			To understand that day length varies across the four seasons, with fewer daylight hours in the winter and more in the summer.		To know weather associated with the four seasons and how it changes (in the UK).	
Working scientifically	To use scientific vocabulary when describing the weather and seasons.	To begin to make prediction and use scientific vocabulary when sorting different events and clothing associated with each season.	To use observation to describe the appearance of trees. To ask simple questions.	To gather and record data in a pre prepared table for a pictogram.	To gather and record data about the temperature in each season to answer questions. To compare data collected over time.	To use scientific vocabulary in own weather reports.	
Real life science			sons and looking at real plogist and England's firs		enter		
Cross- curricular links		t is the weather like in t		·			

		YE	AR 1 – ANIMALS II	NCLUDING HUMAI	NS		
Science How do we group animals?	Is a human a mammal?	What kind of animals are robins and wagtails?	What makes a lizard and a dog the same and different?	What is the difference between amphibians and fish?	How can I sort animals into groups?	What do animals eat?	Vocab
Learning Objective	To know the features of mammals	To know the features of birds.	To know the features of reptiles and how they are different to mammals.	Know the features of fish and amphibians	To group animals according to their features.	To identify animals that are carnivores, herbivores and omnivores/	amphibian bird block chart body
Knowledge	Identify and name some common mammals.	Identify and name different types of birds.	Identify and name different reptiles	Identify and name different amphibians and fish	To know the different animal types. To know which animals can be kept as pets.	To know that animals have different diets	carnivore compare data diet
Structure and function	Features of mammals – hair/fur, warm blooded, young fed by milk	Features of birds – beaks, wings, feathers, lays eggs	Features of reptiles – scales, lays eggs, cold blooded, 4 legs or no legs	Fish – fins, tails, scales and gills Amphibians – live on land and water Breathe with lungs and gills, cold blooded, moist skin and lay lots of eggs.			differences feature fish group herbivore hunt mammal observe
Health and nutrition				,		Carnivores – meat Herbivores – plant Omnivores – both	omnivore pet record reptile
Working scientifically	Label diagrams and explain knowledge using scientific vocabulary	Accurately labelling diagrams with key features and explain knowledge using scientific vocabulary	Explain the similarities and differences between a dog and a lizard. Noting the animal groups.	Explain knowledge using scientific vocabulary and explaining reasons.	To observe and group a variety of animals based on visible characteristics.	Be able to group animals according to their diet using venn diagrams.	research scientist similarities tally
Real life science	Understanding of he		ent animals and which a	animals can be kept as	s pets		
Cross- curricular links	Jungle Jo visit	un					

		YEAR 1 - AN	IIMALS INCLUDING	HUMANS: THE H	UMAN BODY		
How do humans experience the world?	What are the human body parts?	How do people see the world?	How do people hear the world?	What do different objects feel like?	What are my favourite tastes and smells?	How are senses used in action?	Vocab
Learning Objective	To name parts of the human body.	Know parts of the body related to sight – eye brows, eye lashes and eyes	Know the body part used for hearing and investigate how sound changes as you move further away	Know how we feel objects and why we need to be sensitive to touch.	Know that we use our noses to smell and mouths (taste buds) to taste.	To recognise how senses are used in everyday life and the importance of senses in certain jobs.	action bitter blind body compare
Structure and function	To know key parts of the human body (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth). To know some animal body parts	Begin to understand the basic function of these parts – Eyebrows/lashes protect things from getting into the eye such as dust. Eyes – react to light to be able to see.	Purpose of sound – communication, danger, alert, protectionetc	Know that we feel through our skin to see if something is hot or cold. Identify texture of something – smooth, hard, rough, softetc	Know that smell and taste are closely linked. You are not going to want to taste something if you do not like the smell of it.	To know actions people take based on their senses and how firefighters use their senses.	data direction distance feeling group hearing investigation loud obstacle
Health and nutrition		To know the opticians help us to know how to keep eyes healthy.	To know ways to keep healthy and to know that some people wear hearing aids to help them.		Smell can warn of danger -burning and gas Tongue – identifies if something is too hot.		pattern quiet research salty sense
Working scientifically	To draw and label body parts and use sorting rings to group the same and different body parts.	To label diagram of the eye and explain everyday activities you do using your eyes and some ways visually impaired people manage every day tasks.	To use observations to answer questions about how sound changes as you move further away.	To make observations to group objects based on how they feel, writing scientific explanations using appropriate vocabulary	Identify and classify sweet, sour, salty, bitter tastes. Discuss likes and dislikes.	To explain how a firefighter uses their senses. To write sentences about senses being used in images.	senses sensitive sight smell sour sweet taste touch volume
Real life science	 Famous Te history/para 		o not have the use of all Ellie Robinson, Karé Ade			okids.com/uk/discover/l	
Cross- curricular links	DT – fruit kebabs						

			YEAR 1 -	PLANTS		
Science Why are plants important? Learning Objective	Which plants are around us? Name some plants on the school grounds. Know that some will be garden plants and others will be wild.	What are the different parts of a plant? Kapow To identify parts of a flowering plant.	What is the difference between deciduous and evergreen trees? Know the basic parts of a tree. Know that there are deciduous and evergreen trees and the differences between these.	How do plants grow from seed and bulbs? Kapow Know that plants grow from seeds and bulbs make observations to group seeds and observe plant growth.	Which plant parts can we eat? Know that plants help humans by providing us with food, material and medicine.	Vocab data deciduous diagram edible evergreen feature
Plant structure and function	To know a variety of common plants, and how they differ.	To know the basic structure (including leaves, flowers , fruit, roots, bulb, seed, stem) of a variety of common plants, including flowering plants.	To know the basic structure of trees (including roots, branch, trunk, flowers (blossom), fruit, seeds) To know that deciduous trees lose their leaves seasonally, but evergreen trees do not.			fruit flower garden plants grouping growth investigation leaf measure
Growth and needs	Garden – common and have been planted Wild – grown by themselves without any human input. Usually including weeds.			To begin to understand how plants grow and change over time.		observe plant prediction roots research seed shoot stem
Working scientifically	To predict whether there will be more wild or garden plants and observe the types of plants growing around the school grounds. Record findings in a simple table. Use results to answer a question	To create a scientific diagram of plant and parts with labels. N.B children to plant bean seed in pairs (one bean to be given water and one bean NOT to be given water). Make post it-note predictions about what will happen to observe in lesson 4.	To make scientific observations about similarities and differences between different leaves and to measure accurately.	To observe different seeds and bulbs and make predictions about which plants will grow from packets. To observe bean plant growth and write sentence to show findings.	To name different foods that come from plants and know which part can be eaten.	trunk wild plant
Real life science	- To know ab	out the work of Dr Perc	y Julian who discovered	how to make medicine	s from plants.	





		YEAR 2	2 – LIVING THING	S AND THEIR HAB	ITAT Kapow	
Science What different habitats do animals live in?	What do all living things need?	Is it living, dead or ever been alive	What is a habitat?	What habitats are there around the world?	What is a food chain?	Vocab
Learning Objective	To identify the characteristics of living things	To recognise the difference between things that are alive, were once alive or have never been alive	To identify plants and animals in different habitats	To describe characteristics of habitats from around the world	To recall how animals get their food from plants and other animals	alive analyse camouflage carnivore classify coastal
Characteristics of living things	To know some of the 7 life processes: Movement, Respiration, Sensitivity, Growth, Reproduction, Excretion, Nutrition	To know the difference between things that are living, dead, and things that have never been alive, using some of the life processes.				dead depend diet energy excretion food chain growth habitat
Variation and inheritance			To know a variety of plants and animals and describe some differences.			herbivore life process mammal movement nutrition
Habitats and interdependence			To know that a habitat is the environment where an animal or plant lives/ grows, because it provides what they need to survive.	To name a variety of habitats, including woodland, ocean, rainforest and seashore.	To understand that a food chain can be used to show how animals obtain food from eating either plants and/or other animals.	ocean omnivore predator prey producer rainforest reproduction
Working scientifically	To write explanations using scientific vocabulary.	To classify objects into groups and explain.	To write explanations using scientific vocabulary.	To carry out research to find answers to 2 animals and 1 plant that live in habitats.	To create scientific diagrams showing food chains	sensitivity shelter woodlan
Real life science						
Cross-curricular links	Geography - cont Geography - habita	inents and oceans ats				

		YEAR 2 – LIVIN	G THINGS AND TI	HEIR HABITAT: MI	CROHABITAT KAPOW		
Science What is a microhabitat?	How can we identify and classify minibeasts?	How do we carry out a scientific enquiry?	Which minibeasts live on our school grounds?	How do we plan an experiment?	What conditions do woodlouse prefer to live in?	What is a botanist?	Vocab
Learning Objective	To identify and classify minibeasts.	To recognise how scientists answer questions.	To recognise that living things live in suitable environments and gather and record data.	To ask questions and plan how to carry out an experiment.	To carry out an experiment and record data in a table.	To identidy a variety of flowering plants and record data in a table.	botanist camouflage characteristics classification key
Characteristics of living things	To name a variety of minibeasts and know the characteristics of these. To know minibeasts are invertebrates.						classify comparative/fair test conclusion criteria data food chain identify
Variation and inheritance							invertebrate method microhabitat minibeast research
Habitats and interdependence			To know that a micro- habitat is a very small habitat (e.g. stones, logs and leaf litter).		Identify that most living things live in habitats to which they are suited.		results species survey tally test
Working scientifically	To group and classify minibeasts and create classification keys.	To ask a variety of questions about worms and use research to find answers.	To gather and record data in a table to identify which minibeasts live on school grounds. Use findings to answer scientific questions (e.g. which was the most popular'	To understand which questions can be tested, suggest observations to be made and order method of how to complete their investigation.	To perform a simple test about the conditions in which woodlice prefer using equipment. Observe and gather data to record findings in a table. Use results to answer a question.	To use an identification chart to identify a variety of flowering plants.	
Real life science	To understand the	role of a botanist.			, , , , , , , , , , , , , , , , , , , ,		•
Cross-curricular links							

			YEAR 2 – M	ATERIALS Kapow			
Science What makes materials suitable?	How can we group materials?	Which material is suitable?	Will the shape change?	Which material is the stretchiest?	What makes the strongest bridge?	What are the most eco-friendly materials?	Vocab
Learning objective	To group materials.	To recognise that objects are made from materials which suit their uses.	To recognise the shape of some solid objects can be changed and record data in a table.	To compare the suitability of different materials and gather data to answer a question.	To recognise that the strength of some materials can be changed and record data in a graph.	To compare the suitability of materials and recognise some materials are harmful to the environment.	bend block graph elastic fabric flexible
Identifying and Naming	To recall a range of different materials from Year 1.						glass material metal object
Properties and Uses	To know that one material can be used for a range of purposes (and to give examples.) To know that different materials can be used for the same purpose (and to give examples.)	To know why objects are made from particular materials and to give examples of their suitability To know why certain materials are unsuitable for particular objects.		To know that the suitability of materials can be compared for particular uses.		To know why properties are suitable for their uses.	plastic property pull push record rock squash stretch suitable
Change			To know that a push or pull must be applied to change the shape of a solid object. To know that solid objects can be squashed, bent, twisted or stretched. To know that different solid objects may take a different amount of force to change shape.		To recognise that the strength of some materials can be changed.		twist wood
Working scientifically	To sort and group objects based on their properties. To use scientific vocabulary to write sentences.	To write scientific explanations to explain why certain materials are suitable or unsuitable for their uses from their properties.	Investigate whether a range of items bend, stretch, twist or can be squashed and record findings in a table.	Make predictions and investigate which items are the stretchiest. Compare results to answer the question,	Investigate how the strength of paper can be changed by folding and record in a block graph.	To give examples of why plastic can be harmful for the environment and select more eco-friendly alternatives, giving reasons for this.	
Real life science Cross-curricular links	To know why plasti DT – structures	c can be harmful for t	he environment				

		YEAR	2 - ANIMALS I	NCLUDING HU	MANS: LIFECYCI	LES		
Science How can humans stay healthy?	What is the human life cycle?	What are offspring?	What do animals and human need to survive?	Do we all grow the same?	Do we need to exercise?	What is a healthy diet?	Why do we need to have good hygiene?	Vocab
Learning objective	To order the stages of the human life cycle.	To know that offspring are animal young or a human child.	To know that all living things need water, food and air to survive.	To observe and measure growth in humans.	To know that we need exercise to keep our bodies healthy.	To know that we need a balanced diet to keep or bodies healthy.	To know that we need to keep up good personal hygiene to protect us from germs.	adult air baby basic needs butterfly child
Growth	Know the stages of the human life cycle. Baby, toddler, infant/child, teenager, adult, elderly.	To understand how living things grow from offspring to adult. To know that mammals and reptiles look like their offspring and amphibians do not.		To know that we all grow at different rates/speeds.				carbohydrates caterpillar dairy egg exercise fitness frog froglet fruit
Structure and function				Know that not all of our structures are the same and may change over time				germs growth height hygiene life cycle
Health and Nutrition			To know that humans and animals need food, water and air to survive.		To know benefits for physical and mental well-being. Discuss what could happen if they don't exercise.	Know what they should be eating lots of, some of and little of.	Know ways and practices of good hygiene – hair, teeth, body, clothes, hands	live young measure offspring proteins pupa
Working scientifically	Order human lifecycle and characteristics using scientific vocab	Observe similarities and differences between offspring and parents looking at animal groups.	To explain how different animals and groups get food, water and air.	To measure accurately and create a table of findings.	To investigate and observe the impact of high intensity and low intensity exercises	To label a diagram using scientific vocabulary.	Observe journey of germs and explain ways have good hygiene.	sheep spawn tadpole teenager toddler vegetables
Real life science	To know the bene	ı efits of a healthy life	estyle.	<u>I</u>	1	I	<u>I</u>	
Cross-curricular links	PHSE – RSE curi	riculum						

			YEAR 2	- PLANTS			
Science What do plants need to grow?	What are the names of different parts of plants?	Investigation: What impact do light and water have on plant growth? (cress)	How do seeds and bulbs grow into mature plants?	How are plants used in everyday life?	Monitor: What impact do light and water have on plant growth? (cress)		Vocab
Learning Objective	Know the names and functions of basic parts of a flowering plant.	To make predictions and set up a scientific investigation and write methodology.	To identify the stages of a plant lifecycle and draw and label diagrams.	To know the uses of plants in everyday life.	To observe findings to and write up results of investigation.		bulb comparative test conclusion condition diagram
Plant structure and function	Roots – absorb water and nutrients from the soil. Flower – attract insects Stem – support the plant Leaves – collect sunlight to make food.	Know that plants need the right amounts of water, light and suitable temperature to grow healthy.	Know the basic stages of a plant life cycle.		Know that plants will not grow at all without water. Know that plants will grow without sunlight but differently (not green)		energy flower germinate growth leaf life cycle measure nutrient
Growth and needs		Make the link between functions of part of the plant and what it needs.					observe plant shoot seed seedling
Working scientifically	Draw scientific diagrams of plants and label parts. Use scientific vocab to explain the functions of each part of a plant	Introduce fair test and how this investigation will be fair. Write predictions and methodology.	Create a labelled diagram to show the lifecycle of a plant with scientific vocabulary.	Research to answer questions to identify how plants have been used to make medicines, food, materials and how this has helped us.	Record findings of investigation and say whether predictions were correct or not in conclusion. Observation over time		seed coat stem wil
Real life science	To know how plants	s can be used in real	life to make materials a	and medicines. Agnes A	rbor and Carl Linnaeus -	botanists	
Cross-curricular links	School ethos – Be	kind to the environme	ent				





			YEAR 3 – ENERG	GY: LIGHT Kapow		
Science What are light and shade?	What are the different sources of light?	What is a reflection?	How are shadows formed?	Investigation: How do shadows change in the day?	Investigate: What is the relationship between distance and size of shadow?	Vocab
Learning Objective	To know the difference between luminous and non-luminous objects.	To compare light reflecting on different surfaces	To recognise which materials cast a shadow. To ask a testable question and answer it	To summarise how shadows change throughout the day	To investigate how the distance of the light source affects the size of its shadow and find patterns in data to form conclusions.	cast a shadow dangerous light source luminous
Sources	To know that light travels from a source To know that light is needed to see things and that dark is the absence of light. To know that light from the Sun can be dangerous and how to protect their eyes.					non-luminous opaque protect reflect
Transfer		To know that all materials reflect light. Know that light reflection on objects allows us to see them	To know that shadows are formed when the light from a light source is blocked by an opaque object.			reflective (shiny)
Factors affecting energy		- Control of the cont		To know that shadows change position and length throughout the day as the Sun changes position in the sky.	To know that shadows change as a result of different factors: - Changing the position of the light source Changing the distances between the light source, object and surface.	translucent transparent
Working scientifically	Present/record what different light sources that they know.	To make predictions about the most reflective objects and record results in a table.	To identify whether questions are testable and plan and carry out ways to answer a testable question.	Investigate how shadows change with the position of the sun. Draw scientific diagrams to show.	To test, make predictions and find patterns in data to form a conclusion.	
Real life science	To look at how refle	ctive surfaces can be he	elpful for safety in real life).		
Cross- curricular links	Maths – measuring	g and data handling				

			YEAR 3 – FORC	ES AND MAGNETS	3		
Science What are forces and how do magnets work?	What are forces and their effects on objects?	What is friction?	Does the roughness of a surface affect the amount of friction produced?	What are magnets?	Which objects are magnetic?	How are magnets used in real life?	Vocab
Learning Objective	To describe the effects of contact forces and label scientific diagrams.	To recognise the effect of forces and friction and give examples of friction.	To interpret how and why things love differently on different surfaces and plan and carryout an investigation with variables.	To understand the different parts of a magnet and different types of magnet.	To investigate magnetic materials and group them appropriately to draw conclusions.	To research the uses of magnets in real life.	attract contact force electromagnet force
Key facts	To know some examples of contact and non-contact forces			To know the North and South poles of a magnet. To know some different examples of magnets, including bar, horseshoe, button and ring,	To know some examples of magnetic materials, including iron and nickel, and how they react to a magnet and each other.	To know some uses of magnets.	friction magnet magnetic material
Forces in motion	To classify a force as a push, pull or a twist.	To know that friction is a contact force that acts between two surfaces to slow an object down.		To understand that the opposite poles of a magnet attract one another and like poles repel one another	To know that magnetism is a non-contact force that affects objects containing magnetic metal.		magnetism non-contact force non-magnetic
Factors affecting forces			To know that rougher surfaces have more friction between them than smoother surfaces.		To know that some magnets are stronger than others.		material north pole repel
Working scientifically	To label a diagram using arrows and scientific vocabulary.	Write sentences using scientific vocabulary to explain the effect of friction in scenarios.	Identify the variables that need to change and make predictions. Carry out investigation on how the material affects the distance a car travels and record data in a table.	To draw and label diagrams with scientific explanations to say which magnets attract and repel and show the different types of magnets.	To group objects to predict whether they are magnetic or not. Carry out investigation to test magnetism and record in a table and write conclusion to show findings.	To use more than one source to investigate the uses of magnets in real life.	south pole
Real life science Cross-curricular links	To know how magn	ets can be used in re		es, compasses, toys, m			

			YEAR 3 – RO	CKS AND SOILS			
Science Where do rocks come from?	What are the three different types of rock?	Are all rocks the same?	What are the physical properties of rocks?	How are fossils formed?	How is soil made?	Who was Mary Anning?	Vocab
Learning Objective	To know how sedimentary, igneous and metamorphic rocks are formed.	To group rocks according to their appearance.	To group rocks using their physical properties and carry out an investigation.	To describe the process of fossil formation.	To describe a soil sample using sedimentation.	To research the life of Mary Anning.	hardness impermeable igneous rock imprint lava
Identifying and Naming	To name examples of sedimentary, igneous and metamorphic rocks.	To know that rocks can be grouped based on their appearance (e.g. colour, texture) To know that rocks may contain grains, crystals or fossils. To know that grains and crystals appear differently and can be used to classify rocks	To know that rocks can be grouped based on their properties, (e.g. hardness, permeability.)		To name different types of soil (clay, sandy, peaty). To name the different layers of soil.		loam soil magma metamorphic rock mineral molten rock organic matter paelantologist peaty soil permeable rate rock
Properties and Uses			To understand the relationship between the properties of rocks and their uses.	To know that fossils can form from the remains of living things in sedimentary rock			sandy sandy soil sediment sedimentary sedimentation
Change	To know how heat and pressure can cause rocks to form.	To know that rocks can change over time (e.g. erosion, weathering).		To know that fossils are formed over millions of years.			silt soft soil
Working scientifically	To label diagrams and write explanations on how the different rocks are formed.	To observe and group rocks according to their appearance.	To carry out a investigation to test and observe rocks for hardness, permeability and reaction to acid. Record findings and conclude which rocks match the purposes.	To explain using scientific vocabulary how fossils are formed.	To use soil sample to see the different layers that make up soil and draw a scientific diagram using labels. Compare different soil samples.	To research why Mary Anning is significant with the discovery of fossils.	
Real life science	Mary Anning -						•
Cross-curricular links	Geography – natural disast History – archaeology and p						

		Υ	EAR 3 – PLANTS	AND REPRODUCT	ION	
Science Why are plants important?	What are the functions of different parts of flowering plants?	Investigation: What role do air, light and water play in plant growth?	How is water transported within plants?	What is the life cycle of a flowering plant?	How are seeds dispersed?	Vocab
Learning Objective	To know the functions of the roots, stem/trunk leaves and flowers in a plant.	To know the process of a scientific investigation.	To know that the stem is a vital transporting water within a plant.	To know the key stages of the life cycle of a flowering plant.	To explore seed dispersal methods.	absorb air animal dispersal
Growth & Needs		To know that plants need air, water and light to grow healthy. Know that these are essential for survival. Understand the differences between a healthy and unhealthy plant.				carrying conclude disperse dropping eating evaluate female flower
Structure & Functions	To understand the functions of the basic parts of a plant and the relationship between structure and function.		Know that stem transports water using a series of tubes that suck up the water and allow the water to travel upwards to the leaves and flower.			fruit germination improve leaves male nutrients
Cycle				To know the life cycle of a plant from seed to mature plant. To know that flowers are the reproductive organ of a plant. To know that the process of pollination is the transfer of pollen to the female (part of the) flower. To know that the process of seed formation is the growth of a seed after pollination.	To know some different methods of seed dispersal and the benefits of each.	petal pollen pollination roots soil seed seed formation shaking space stem/trunk sunlight support
Working scientifically	Drawing and labelling a flowering plant with scientific vocabulary. Roots – anchor/hold up plant, Stem – transport waterLeaves – photosynthesis Flowers - pollination	To carry out a scientific investigation: hypothesis, prediction, test, method, results, conclusion	Drawling and labelling a scientific diagram using relevant vocabulary. Observe how water travels by using white carnations/ celery.	Discover/explore male and female parts in a lily flower. Draw/create their own life cycle.	To write explanations with scientific vocabulary to say how a variety of seeds are dispersed.	testable transport water water dispersal wind dispersal
Real life science				•	•	
Cross-curricular links	Geography – food	(Y4)				

	YEAR 3 - ANIMALS INCLUDING HUMANS: MOVEMENT AND NUTRITION									
How do humans and animals move and get their nutrition?	What are the different types of skeleton?	What are the main bones in the human body and what are their purposes?	How do muscles help you move?	How does food give us energy?	What are the main nutrient groups?	What is a balanced diet?	Vocab			
Learning Objective	To explain the role of a skeleton and group animals based on their physical properties.	To name the main bones in the human body and what their function is.	To explain how muscles are used for movement.	To explain how food is an essential energy source for animals and gather and compare data to answer questions.	To know the different food groups and their simple functions.	To explain what makes a balanced diet.	balanced diet bone carbohydrate conclude diet			
Structure and function	To know that animals can be grouped based on the presence of a skeleton. To know that the skeleton in humans and some animals is used for movement, protection and support.	To know that the skeleton in humans and some animals is used for movement, protection and support. To be able to locate the spine, skull, ribcage, pelvis and explain their function. To label 2 joints in the body. To know the biggest and smallest bones in the body.	To know that the muscular system in humans and some animals works with the skeleton for movement.				endoskeleton energy exoskeleton fat fibre invertebrate joint measure mineral movement muscle nutrient pelvis protection			
Health and nutrition				To know that animals, including humans, need the right types and amount of nutrition. To understand that humans cannot make their own food and therefore eat to get the nutrition needed. To know that humans need different amounts of energy.	To know the main food groups (carbohydrates, protein, fats, fibre, vitamins, minerals and water) and their simple functions.	To know that a balanced diet should include all food groups.	protein ribs skeleton skull spine support vertebrate vitamin water			
Working scientifically	To write explanations using scientific vocabulary on the function of skeletons. To group animals based on whether they are vertebrates, invertebrates or whether they have endo/exoskeletons.	To label a diagram of the human skeleton with the names of the key bones and write their function (movement/protection /support)	To sort muscular functions into voluntary and involuntary movements. Create a model to show how muscles work.	To gather data from food packaging to compare the nutritional information. Write using scientific explanations how energy is being used in park scene.	To use secondary sources to name the 7 different nutrient groups and describe their function.	To plan a meal which shows a balanced diet and explain using scientific vocabulary.				
Real life science Cross-curricular links	- Flemmie Pans DT – food	y Kittrell – first African Americ	can woman to earn a PHD in n	nutrition						





	YEAR 4	4 - ANIMALS INCL	LUDING HUMANS:	THE DIGESTIVE S	YSTEM AND TEET	H Kapow	
What happens once food enters our body? Learning Objective	How does the human digestive system work? Kapow To describe the function of the human digestive system.	Are all of our teeth the same? Kappy To recognise different types of human teeth and their role in eating.	Investigation: Why do we need to care for our teeth? (predictions, fair test and methodology) To explain how to care for our teeth and plan an enquiry based on which	Do all animals have the same teeth? Kapow To recognise that different teeth relate to an animal's diet and classify	Who eats who? Kapow To recognise producers, predators and prey in food chains and analyse	Investigation: Why do we need to care for our teeth? (findings and conclusions)	Vocab absorb canine carnivore
	,	3	variables should be measures and controlled.	animals based on their diet.	trends to form conclusions using scientific knowledge.		digest faeces food chain
Structure and function	To know the main organs of the human digestive system (mouth, teeth, tongue, oesophagus, stomach, small and large intestines) and describe their simple functions	To know the different types of human teeth (incisor, canine, premolar and molar) and their simple functions.					herbivore incisor large intestine molar mouth oesophagus omnivore predator premolar
Health and nutrition			To know that teeth can be damaged, including the effect of sugary and acidic food. To know that it is important to brush teeth twice a day, make good food choices and visit the dentist regularly	To describe the teeth of carnivores and herbivores, and understand why they are different.	To know that predators hunt for their food and prey are the animals being hunted. To know that producers make their own food.	To know that teeth can be damaged, including the effect of sugary and acidic food. To know that it is important to brush teeth twice a day, make good food choices and visit the dentist regularly	prey producer saliva small intestine stomach
Working scientifically	Label a model of the digestive system and explain the function of each of the organs using scientific vocabulary.	Label a model of the jaw and teeth and describe the function of the different types of teeth using scientific vocabulary. Observe own teeth using a mirror.	To plan an investigation to see what impact water, cola, orange juice, coffee and vinegar have on teeth (an egg). Make predictions about what they think will happen and explain how the variables will be controlled and how it will be a fair test. Write the methods and set up experiment. N.B. Will need to leave for a week. Leave a page in book to write findings and conclusions.	Classify and group a range of animals based on whether they are carnivores, herbivores or omnivores based on their teeth. Explain reasons using scientific vocabulary.	To analyse predator-prey graphs and predict missing values from data to form scientific conclusions.	To record findings from investigation	
Real life science		aumont – observing the diges		•	•		
Cross- curricular links	- Maths – data I	nandling					

			YEAR 4 – EL	ECTRICITY Kapow			
Science How does electricity power objects?	How are electrical appliances powered?	What is an electrical circuit?	How do switches work?	Which materials are conductors or insulators?	What will make the bulb brighter?	How can we stay safe around electricity?	Vocab
Learning Objective	To recognise how electrical appliances are powered and group appliances to record in a table.	To construct electrical circuits and draw scientific diagrams.	To explain the uses of switches in a circuit	To explain the use of materials as electrical conductors or insulators and write a chronological method for an investigation.	To investigate what affects bulb brightness and	To explain how to be safe around electricity.	ammeter appliance battery bulb buzzer cell
Sources	To know that all electrical appliances need a power source, including batteries or mains electricity. To know that an electrical circuit needs a complete path for the electrical charge to flow through.	To know the main components in a simple series circuit. To know that an electrical circuit needs a complete path for the electrical charge to flow through				To know the precautions for working safely with electricity	circuit component electrical conductor electrical insulator electricity hazard mains material motor power source
Transfer	to non anough.			To know that some materials allow electrical charge to pass through them quickly and these are known as electrical conductors (e.g. metals). To know that some materials do not allow electrical charge to pass through them easily and these are known as electrical insulators (e.g wood and plastic). To know that metals are used for cables and wires because they are			precaution property safety series circuit switch wire

			1				
				good conductors of			
				electricity.			
				To know that plastic is			
				used to cover cables			
				and wires because it is			
				a good insulator.			
Factors			To understand that an		To understand the		
affecting energy			open switch breaks a		relationship between		
			series circuit so the		bulb brightness and the		
			components will		number of bulbs		
			be off.		in a circuit.		
			To understand that a				
			closed switch				
			completes a series				
			circuit so the				
			components				
			will be on.				
Working	Group appliances	Make predictions	Write scientific	Write methodology in	Discuss predictions	Write explanations using	
scientifically	based on whether	about whether	explanations about	chronological order to	about what will happen	scientific knowledge to	
	they are mains or	circuits will work or	how switches are	show how investigation	when more bulbs are	explain how to stay safe	
	battery operated	not using scientific	useful and how the	will take place and	added to a circuit.	around electricity.	
	and record in a	vocab and build	game used a switch.	record findings.	Record results in a		
	table. Begin to	circuits to check.	Encourage use of		table and form		
	explain advantages	Draw circuit	diagrams to support		conclusions using		
	and disadvantages	diagrams using	explanation.		scientific knowledge		
	using appropriate	accurate symbols.			and vocabulary.		
	vocab.						
Real life science	Walter Linkon Hawl	kings – African Ameri	can scientist who disco	vered cheaper and safe	r plastic coverings for wi	res.	
Cross-curricular	DT – torches						
links							

	YEAR 4 – LIVI	ING THINGS AND	THEIR HABITAT:	CLASSIFICATION	AND CHANGING H	IABITAT Kapow	
Science How can we group livings things and how are their habitats changing?	How can we group animals?	How can we group plants?	How can classification keys help us to group living things?	How do the seasons affect habitats?	What impact have humans had on habitats?	How do natural disasters affect habitats?	Vocab
Learning Objective	To group animals and record data in different ways.	To group plants and record data in different ways.	To make careful observations and ask questions to make and understand classification keys.	To recognise and describe different habitats and their inhabitants and to record observations on how habitats change over seasons.	To recognise the impact humans have on habitats and to research using an information sheet.	To recognise the impact of natural disasters on habitats.	Carroll diagram classification key classify
Characteristics of living thigs	To know that living things can be grouped in different ways To know that vertebrates are animals which have a backbone and invertebrates are animals which do not have a backbone.	To know that plants can be grouped into flowering or non- flowering varieties. To know that flowering plants include grasses and non-flowering plants includes ferns and mosses. To know that a classification key can be used to group and identify plants and animals.	To know that a classification key can be used to group and identify plants and animals. To know that there are five main vertebrate groups: birds, mammals, reptiles, amphibians and fish. To know that invertebrate groups include snails, slugs, worms, spiders and insects				conservation conservationist deforestation earthquake endangered flood flowering plants human impact invertebrate observe nature reserve non-flowering plants
Variation and inheritance							pollution
Habitats and interdependence				To know that habitats can change throughout the year and this can be dangerous for living things.	To know that humans can have both a positive and negative impact on the environment.		seasonal changes taxonomist uprooted vertebrate Venn diagram
Working scientifically	Observe and sort animals based on shared characteristics. To record data in Venn and Carroll diagrams.	Observe and sort plants based on shared characteristics and create a pictogram to record data. Begin to ask questions to create classification key.	Observe and describe characteristics of different organisms. Draw own classification keys. Analyse the use of classification keys, explaining whether they are accurate.	To record observations on how habitats change over time and throughout seasons. To write from the perspective of an animal to explain how a habitat changes throughout the seasons.	To research either the impact of plastic pollution, deforestation or coral bleaching on habitats and present information clearly.	To explain using scientific vocabulary how natural disasters can have an impact on habitats around the world.	waterlogged wildfire
Real life science	To know the impact	t that humans can hav	ve on habitats and wha	t we can do to prevent th	nis.	ı	1
Cross-curricular links	Geography – natura Geography – rainfo						

		YEA	R 4 - MATERIALS:	STATES OF MATT	ER	
Science What are the different states of matter?	What is the difference between solids, liquids and gases?	What happens when materials are heated and cooled?	What is evaporation and condensation?	What is the water cycle?	How does temperature affect the water cycle?	Vocab
Learning Objective	To know the properties of solids, liquids and gases	To investigate how temperature affects the process of melting and to know freezing points	To describe evaporating and condensation and predict evaporation rates.	To name and describe the stages of the water cycle.	To research how climate change affects the water cycle.	boiling point climate change compress condensation
Key knowledge	Water can take all 3 forms.	Water melting point is 0 degrees C Water boiling point is 100 degrees C	Temperature affects the rate of evaporation. Materials change state – liquid turns into a gas.	That water flows around the world in a continuous process called the water cycle.	climate change has affected the water cycle.	condensing condensing point
Identifying and Naming	To know that all substances around us can exist as solids, liquids and gases.					drought evaporating evaporation rate
Properties and uses	Solid – holds shape- fixed volume Liquids – freely flow/take shape of container Gas- no shape					flood force freezing freezing point gas
Change		Solids turn to liquids through melting. Liquids turn to solids through freezing	Liquids turn to gases through evaporating. Gases turn to liquids through condensation.	Evaporation is when bodies of water are heated and turn into water vapour. Condensation is the process of water vapour cooling to form water droplets in clouds, which can result in precipitation.	To know that the rate of evaporation increases as temperature rises.	gaseous liquid matter melting melting point precipitation rate solid state
Working scientifically	To investigate whether solids, liquids and gases can be compressed, flow or change shape. Observation Observation	To use and read a thermometer accurately. To create a table.	To predict how temperature affects the rate of evaporation Observation over time	To use labelled diagrams to label the water-cycle and explain using scientific vocabulary. Manufing Manuf	To research and identify the key information from a source.	steam temperature thermometer the water cycle volume water vapour
Real life science	Climate change and	how this is affecting the	e water cycle.			
Cross-curricular links	Geography – Rivers	<u></u>				

	YEAR 4 -ENERGY: SOUNDS AND VIBRATIONS									
Science How do we hear?	How are sounds made?	How does sound travel?	How do vibrations affect volume?	How does distance affect volume?	What is pitch and how does it change?		Vocab			
Learning Objective	To describe how sounds are mad	To describe how sounds travel and draw and label scientific diagrams	To describe the relationship between vibration strength and volume and present data in a bar chart.	To describe the relationship between volume and distance and suggest variables in which to measure.	To describe pitch and how to change it and to design and create a simple results table.		air decibels (dB) decibel meter ear			
Sources	To understand that sound is a result of vibrations.						eardrum ear protectors gas hertz (Hz) high pitch insulator of sound liquid			
Transfer		To know that vibrations from sounds travel through mediums to the ear.					loud low pitch matter			
Factors affecting energy		modianio to the dati	To know that stronger vibrations cause louder sounds and weaker vibrations cause quieter sounds.	To know that sounds get fainter as the distance from the sound source increases.	To know a variety of ways to change the pitch or volume of a sound. To know that quicker vibrations cause higher-pitched sounds and slower vibrations cause lower-pitched sounds.		medium musical instrument pitch quiet solid sound vibration			
Working scientifically	To observe how different sounds are created and record information in a table.	Draw and label a diagram with explanation using scientific vocabulary to explain how sound travels.	To draw a bar chart and use data to answer questions.	To carry out a scientific investigation suggesting variables to measure, collecting data and using scientific vocabulary and findings to provide explanations on how distance affects volume.	To create a musical instrument using bottles with different amounts of water and design and create a results table with two columns.		volume			
Real life science										
Cross-curricular links	Music – instrumen	ts from around the wo	rld and pitch.							





	YEAR 5 – FORCES EARTH AND SPACE									
Science How do planets and moons move and how does it affect life on earth?	How have models of the solar system changed?	What are the planets in the solar system?	Why does the moon look different in the night sky?	How do night and day happen?	Who has been to space and when did they go?	Vocab				
Learning Objective	To compare the contributions of Ptolemy, Alhazen and Copernicus to models of the Solar system and pose testable questions about the solar system.	To be able to name and describe planets in the solar system.	To name some phases of the moon and describe how they occur using scientific vocabulary.	To explain the causes of day and night and the seasons and draw scientific diagrams.	To know about the space race and oder key events to show the evolvement of space travel.	axis celestial bodies climate change day daytime (daylight) data				
Key facts	To know that the Sun is a star at the centre of our solar system. To know that the Sun, Earth and Moon are approximately spherical bodies	To know the names, order and relative positions of the planets and other main celestial bodies.	To know that a moon is a celestial body that orbits a planet.		1947 – fruit flies sent to space 1957 – Laika the dog sent to space 1961 – Yuri Gagarin first man in space 1963 - Valentina Tereshkova first woman in space 1969 – Neil Armstrong first man on the moon (Apollo 11) 1992 – Mae Jemison first African American woman in space 1998 – International space station sent to space 2015 – Tim Peake becomes first British man to go to space.	Earth first quarter moon force full moon gravity horizon Jupiter last quarter moon Mars Mercury moon Neptune new moon phase				
Forces in motion	To know that the Earth and other planets orbit around the Sun		To know that the Moon orbits around the Earth and that this causes the phases of the moon. Name the different phases of the moon.	To understand how the Earth's rotation causes day and night and the apparent movement of the Sun across the sky. To know that the tilt of the Earth and its orbit around the Sun causes the seasons		planet Pluto orbit our Solar System reflect rotate Saturn season shadow				
Factors affecting forces						Solar System space				

Working	Listen to and make	To label the planets	To use a light source	To use a light source	Order events and then carry out own	spherical
scientifically	notes on evidence	on a heliocentric	(sun) and spherical	(sun) and spherical	research on one of the events to	star
	for each model and	model and research	items (earth and	items (earth and moon)	present to the class.	summer
	draw conclusions to	and record key facts	moon) to explore how	to explore how day and		sunrise
	suggest which	about planets,	the phases of the	night occur. Draw/fill in		sunset
	model is used	including whether	moon occur. Draw/fill	diagram to show how		table
	today.	they are rock or gas	in diagram to show	night and day happen		the Sun
	Compose own	and how long their	the phases of the	and write explanations		the Moon
	testable questions	orbit around the sun	moon and write	using scientific		tilt
	about the solar	takes and distance	explanations using	vocabulary.		Uranus
	system that can be	from the sun.	scientific vocabulary.			Venus
	researched.					winter
						year
Real life science	To know significant	people who have cor	ntributed to discoveries	in space		
Cross-curricular links	English – 'Cosmic'	- Frank Cottrell Boyo	e			

What are the properties of materials? Learning Objective	Which material is the best thermal insulator? To investigate thermal conductors and insulators	Which electrical conductor makes bulbs shine the brightest? To investigate electrical conductors and order	How does temperature affect solubility? To investigate how temperature affects how	Can we separate mixtures? To use different methods to separate mixtures and	What is an irreversible change? To identify and explain irreversable changes	Vocab control variable dissolve
-	and write a scientific report.	objects from most conductive to least conductive.	things dissolve and present findings in a bar chart.	draw diagrams.	and sort reversable and irreversable changes.	evaporation method filtering
Identifying and Naming						mixture particle
Properties and uses	Thermal conductors let heat through. Thermal insulators will stop heat from getting through.	To know which materials are the most conductive.		To describe a broader range of materials and their properties including response to magnets.		sieve solution variable change of state conductor
Change			To know that some substances will dissolve in a liquid to form a solution. To know the factors that affect the time taken to dissolve, including temperature.	To know that some liquids and solids can be separated using sieving, filtering, magnetism and evaporation and to describe these processes.	To understand that some changes result in the formation of new materials and that these are usually irreversible. To understand that dissolving, mixing and changes of state are reversible changes	electrical conductivity insulator irreversible change mixture reversible change soluble insoluble
Working scientifically	Carry out an investigation to find out the best material that is thermal insulator that could be used as part of a lunch box to keep food cool (use ice cubes). Make predictions and identify the different variables. Record findings in table and write conclusions based on findings.	To test a range of materials to identify which are the most conductive to make the bulb shine the brightest as part of a circuit. Order objects from most to least conductive and provide an explanation using scientific vocabulary.	As a class, make predictions whether different materials are soluble or insoluble (coffee, sand, flour, water) and test together as a class. In pairs. Investigate how temperature affects the speed that sugar dissolves using hot, warm and cold water, Identify the variables and record findings in a table and then into a bar chart.	Use filtering, sieving, magnetism and evaporation to show how sand and water, salt and water, flour and raisins, paperclips and rice can be separated and draw scientific diagrams to show how separation was achieved.	To observe an irreversible change (mixing vinegar and milk) in action. Group images based on whether they will be a reversable or irreversible change and explain reasons using scientific vocabulary.	

Real life science

Cross-curricular links

	YEAR 5 – FORCES: UNBALANCED FORCES								
Science What are the effects of forces?	What is gravity and its effect?	What is air resistance and its effect?	What is water resistance and its effect?	What is friction and its effect?	What effect do gears, levers and pulleys have on movement?		Vocab		
Learning Objective	To describe gravity and its effects and analyse data to write a conclusion.	To describe air resistance and is effects and plan and carry out a fair test.	To describe water resistance and its effects and create own table to show results.	To describe friction and its effects and evaluate a method.	To describe the effects of levers, pulleys and simple machines on movement and draw and label a diagram.		aerodynamics air resistance amplify balanced contact force distance effort		
Key facts	To know that gravity is a non-contact force that pulls objects together.	To know that air resistance and water resistance are both types of friction	To know that air resistance and water resistance are both types of friction	To know that air resistance and water resistance are both types of friction			force friction gear gravity lever load machine		
Forces in motion	To know that unsupported objects fall towards the Earth because of gravity.	To know that air resistance act in the opposite direction to a moving object. To know that when forces are imbalanced, the speed, shape or direction of an object changes. To know that when forces are balanced the speed, shape or direction of an object stays the same.	To know that water resistance act in the opposite direction to a moving object. To know that when forces are imbalanced, the speed, shape or direction of an object changes. To know that when forces are balanced the speed, shape or direction of an object stays the same.	To know that when forces are imbalanced, the speed, shape or direction of an object changes. To know that when forces are balanced the speed, shape or direction of an object stays the same			mass matter non-contact force pivot pulley streamlining surface area unbalanced water resistance		
Factors affecting forces		To know that the larger the surface area of an object the greater the air	To know that the larger the surface area of an object the greater the water	To know that rougher surfaces have more friction between them than smoother	To know that some mechanisms including levers, pulleys and gears allow a smaller				

		it creates.	resistance it creates.	surfaces and how that may affect movement.	force to have a greater effect			
Working scientifically	To analyse data to write a conclusion including, identifying anomalies in data.	To plan and carry out a fair test to investigate air resistance and conclude findings. Find the average of results.	To use pattern to investigate: Does surface area affect the time taken for an object to sink? Carry out investigation and create own table to show results.	Carry out investigation and evaluate method by comparing results with model results. Explain why model results are more accurate	To create a wind- powered pulley and draw and label a diagram. Write a scientific explanation of how the pulley affected the force.			
Real life science	To know how gears	To know how gears, levers and pulleys are used in real life.						
Cross-curricular links	DT – creating an a	erodynamic car						

	YEAR 5 - ANIMALS: HUMAN TIMELINE KAROW								
Science How do humans change?	How do humans change from birth to old age?	What changes happen during puberty?	What is the gestation period of humans and other animals?				Vocab		
Learning Objective	To describe how humans change from babies through to old age To use a line graph to identify patterns in height and predict values	To identify changes in males and females as a result of puberty.	To explore the gestation periods of humans and other animals and plot data on a scatter graph.				adolescence adolescent adult adulthood child childhood		
Animal growth	To describe the human life cycle, including the stages of growth and development (baby, toddler, child, teenager, adult, elderly).	To describe changes that occur during puberty (in boys and girls).	To know that gestation periods vary across mammals.				foetus gestation period hormones infant life cycle newborn		
Working scientifically	To describe some of the key milestones that happen in each stage of the human timeline. To analyse data on a line graph to show the rates of growth.	Label the changes on diagrams that happen during puberty. Suggest ways to help to manage changes.	To create a scatter graph with labelled axis to show the gestation period of humans and other animals.				old age period (menstruation) puberty toddle		
Real life science	To know how physic	l cal and emotional cha	l anges that happen durii	 ng puberty can be mana	l ged.				
Cross-curricular links	RSE								

	YEAR 5	- LIVING THINGS	AND THEIR HABITA	AT: LIFECYCLES A	ND REPODUCTIO	N Kapow Primary	
Science Are all lifecycles the same?	What is the lifecycle of a plant? N.B. will need to set up investigation that links to the final lesson in the sequence	What is the lifecycle of a mammal?	What is the lifecycle of a bird?	What is the lifecycle of an amphibian?	What is the lifecycle of an insect?	What is asexual reproduction?	Vocab
Learning Objective	To describe the life cycle of a plant, including the sexual reproductive stage.	To describe the life cycle of a mammal.	To describe the life cycle of a bird and compare it with that of a mammal and to explore different	To describe the life cycle of an amphibian and suggest how temperature may affect hatching.	To describe the lifecycle of an insect and analyse data to make predictions	To describe asexual rerpoduction and present findings from investiagation.	adolescence asexual reproduction characteristic chrysalis cocoon
Variation and Inheritance	To know that sexual reproduction involves pollen from one flower fertilising the egg of another to produce a seed A life cycle shows the changes an animal or plant goes through until the reproduction of a new generation when the cycle starts again.	Mammal – egg inside female – develops into an embryo – gives birth to live young - infant – adult. Animals need male/female to reproduce (sexual 2 parents)	Bird – egg, develop inside the egg, hatch – chick – adult. All living things must reproduce for the species to survive.	Amphibian – eggs – develop in eggs – hatch – develop in water – adult.	Insect – eggs – lava – pupa – adult insect. To know the threestaged lifecycle and the four-staged lifecycle.	Only one parent is needed in asexual reproduction and the offspring are exact copies	egg estimating fertilisation flowering stage four-legged four-stage life cycle germination stage gestation hatchling incubation infancy juvenile larva metamorphosis nymph ovule pollen pollination pupa reproduction
Working scientifically	To observe and label reproductive parts in flowers. To compare reproductive parts in different flowers	To compare the lifecycles of different mammals.	To pose questions to compare the life cycles of different birds.	To use analyse data to draw conclusions to suggest how temperature may affect egg hatching.	To analyse data to identify patterns and use data to make predictions.	To plot data accurately on a line graph and estimate missing data. To extrapolate a line graph.	reproduction seed dispersal seed stage seedling stage seed sexual reproduction three-stage life cycle
Real life science	To talk about the wo	ork of David Attenboroug	gh and Jane Goodall				
Cross-	PSHE - RSE						
curricular links	Geography – biome	es					





	YEAR 6 – CIRCUITS, BATTERIES AND SWITCHES KAPON							
Science How is energy transferred?	What symbols are used for electrical components?	How can do we draw circuit diagrams?	How does the number of bulbs in a circuit affect their brightness?	How are batteries different?	How does voltage affect bulb brightness?		Vocab	
Learning Objective	To use recognised symbols for electrical components.	To predict and present results for electrical circuits and to use standardised symbols when drawing diagrams.	To recognise a link between the number of components and resistance and explain results using scientific knowledge.	To compare different properties of batteries and design a results table	To investigate how voltage affects bulb brightness and to plan an enquiry.		ammeter appliance battery bulb buzzer cell	
Sources	To know a wider variety of components in a series circuit (including buzzer and motor)	To know the conventions used to draw circuit diagrams, including the recognised symbols for common components and					circuit component electrical conductor electrical insulator electricity hazard	
Transfer		using straight lines.					nazard mains material motor power source precaution	
Factors affecting energy			To know the more bulbs, the dimmer bulbs will be.	Voltage (or potential difference) measures the energy carried by the charge flowing in a circuit. It is the electrical 'push' from the power source.	To know that the voltage of a circuit can be changed and how this affects bulb brightness (or buzzer volume)		precaution property safety series circuit switch wire	
Working scientifically		To build circuits and draw diagrams using standardised symbols.	To carry out an investigation and explain findings using scientific vocabulary.	To observe different batteries (or images from resources) and create a table to compare different batteries.	To plan and carry out enquiry, identifying variables, drawing scientific diagrams, recording findings and writing conclusions.			
Real life science	Consider how circu	its are used in real life	;					
Cross-curricular links	DT							

	YEAR (6 – LIVING THING	S AND THEIR HA	BITAT: CLASSIFYI	NG BIG AND SMAL	L Kapow	
Science How can we group livings things and how are their habitats changing?	Who was Carl Linnaeus?	What are the characteristics of cold-blooded vertebrates?	What are the characteristics of warm-blooded vertebrates?	What are the characteristics of invertebrates?	How can we classify different plants?	What are the characteristics of micro-organisms?	Vocab
Learning Objective	To explain how organisms are classified using the Linnaean system	To classify the cold- blooded vertebrate groups using their common characteristics.	To classify warm- blooded vertebrate groups using their common characteristics.	To classify invertebrates.	To describe how the plant kingdom is organised (based on shared characteristics). To produce a working classification key	To describe and classify micro-organisms.	characteristic classify classification key cold-blooded
Characteristics of living thigs	To know that 'organism' is a term used to refer to an individual living thing	To describe the characteristics of fish, amphibians and reptiles. To use a branching key to identify the coldblooded vertebrates.	To describe the characteristics of birds and mammals. To compare characteristics of vertebrate groups.	To describe the characteristics of worms, snails, spiders and insects.	To name plant groups and describe their characteristics	To know that micro- organisms are incredibly small and cannot usually be seen by the naked eye.	conifer exoskeleton fern fish flowering plant insect invertebrate life process
Variation and inheritance							Linnaean system
Habitats and interdependence							mammal micro- organism microscopic moss
Working scientifically	To write an explanation of the work of Carl Linnaeus. Organise a diagram to show the Linnaean system	To draw scientific diagrams and describe characteristics of cold-blooded vertebrates using scientific vocabulary including: skin, breathing, blood, reproduction.	To draw scientific diagrams and describe characteristics of warmblooded vertebrates using scientific vocabulary, including: skin, breathing, blood, reproduction.	To compare and group worms, snails, spiders and insects based on their characteristics (legs, exoskeleton, gills, segmented bodies)	To write questions to create classification keys to identify the leaves.	To explain what a micro- organism is classify bacteria.	organism reptile snail spider vertebrate warm-blooded worm
Real life science Cross-curricular links	To know of the wor	k of Carl Linnaeus		_		_	_

		YEA	R 6 -EVOLUTION	AND INHERITENC	E Kapow		
Science How can we group livings things and how are their habitats changing?	Why do the same species of animal look different?	ለ ለ ለ ለ ለ ለ ለ ለ ለ ለ ለ ለ ለ ለ ለ ለ ለ ለ ለ	How do animals adapt to their environment?	What is natural selection?	What is evolution?	What is the evidence for evolution?	Vocab
Learning Objective	To explain why there are differences within a species. To group factors	To recognise the inheritance of characteristics in plants and animals.	To explain why adaptation is necessary.	To model how natural selection affects population size. To evaluate the degree of trust and pose new questions for further enquiry.	To describe the theory of evolution. To consider evidence used to inform theories	To recognise evidence that can be used for evolution. To consider the degree of trust in the evidence used.	adaptation ancestor characteristic competition environmental evidence
Characteristics of living thigs							evolution extinct
Variation and inheritance	Identify examples of variation. Explain causes of variation. To know that characteristics are passed from parents to their offspring, but that all offspring vary from their parents	To know that living things produce offspring of the same kind. To identify variation that is inherited.		To know what natural selection is. To explain how variation may affect the survival within a population.	To know what evolution is. To know the key steps in evolution of a species.	To know that fossils provide us with information about living things that inhabited the Earth millions of years ago	fossil gene habitat inherit natural selection offspring peer review population
Habitats and interdependence			To know how animals have adapted to survive in habitats. To know that adaptations cannot be chosen.				reproduce scientific theory selective breeding
Working scientifically	To explain the causes of variation and group the different factors affecting variation	To describe patterns of inheritance and explain how farmers might use this in real life.	To match adaptations to animals and write scientific explanations about how adaptations help animals to survive.	To carry out investigation to answer 'How does beak shape affect how much food is eaten?' Identify variables and record findings. Evaluate findings.	To write an explanation to describe the theory of evolution including scientific vocabulary. To describe some of the evidence used for evolution.	To consider the advantages and disadvantages of evidence used to explain evolution. To evaluate the advantages and disadvantages of the evidence used and consider a degree of trust.	species specimen survival survival of the fittest variation
Real life science	Charles Darwin – e	volution. Mary Anning	j – fossils.	l	l		l

	Υ	EAR 6 – ANIMALS	INCLUDING HUMAI	NS: CIRCULATION	AND HEALTH KAPPON	u Y	
Science How does our body work and how can I keep it healthy?	What are the factors affecting health?	How does our heart work?	What does blood transport around the body?	What is the relationship between animal size and heart rate?	What is the relationship between exercise and heart rate?	What is the relationship between heartrate and fitness?	Vocab
Learning Objective	To identify factors that affect our health and evaluate sources of information.	To summarise the key structures and purpose of the circulatory system.	To identify the key roles of blood.	To explore relationships between animal size and heartrate and interpret patterns in data.	To investigate the relationship between exercise and heartrate and write a method.	To describe the relationship between heartrate and fitness and draw a line graph.	balanced diet blood bloodstream blood vessels carbon dioxide
Structure & function		Right side – de- oxygenated blood. Pumps blood to lungs to collect a fresh supply of oxygen. Left side- pumps re- oxygenated blood. Heart – pumps blood around the body/lungs Blood vessels – carry blood to and from the heart.	Blood – provides cells with oxygen and removes carbon dioxide. Transports nutrients and water Blood has red blood cells for carrying oxygen. White blood cells immune system and fighting infections. Arteries carry oxygenated blood away from lungs. Veins carry blood to lungs/heart to get more oxygen.				circulatory system diet drug exercise fitness health heart heart rate lifestyle lungs mass nutrient oxygen
Health & nutrition	To understand the impact of diet, exercise, drugs and lifestyle on the way a body functions.			Know that heart rate is number of beats per minute and breathing rate is breaths per minute.	To know that exercise increases heart rate.	The fitter a person is the lower their resting heartrate is.	pulse pump (verb) rate resting heart rate transport water

Working scientifically	To analyse secondary sources of information, considering the degree of trust in them.	To use scientific vocabulary in explanations	To draw or label diagrams and use scientific vocab in explanations.	To research and plot data in tables and graphs. To come to conclusions and predict patterns.	To conduct a scientific enquiry. Identify changed, measured and controlled variables. Suggesting the most appropriate equipment. Recording findings and drawing conclusions.	To plot data on a line graph and label axis accurately.	
Real life science							
Cross- curricular links	Maths – presenting of PSHE – keeping hea	.	ohs. Finding the mean.				