Science skills Coverage-Plants

Skill	Y3	Y4	Y5	Y6
Identify different parts of flowering plants.	*Label the main parts of the plant and describe the basic function of a flowering plant.*	*Identify/ Understand specialised plant parts.*	Use knowledge of the parts of the flower to explain reproduction.	Research similarities/differences between petals, leaves, stamen and stigma on variety of plants.(Locality)
Understanding plant growth.	*Comparing and explain factors on plant growth. (light and nutrition)*	*Compare plants growing in a local habitat to those in contrasting habitats.*	Describe the different ways in which new plants can be grown(eg, bulbs, cuttings ect)	Describe how plants have adapted to suit their environment.
Understanding plant reproductions	Labelling of reproductive parts.	Understanding the basic reproduction of a plant.	Understanding the reproduction of a plant in a variety of plants.	Understanding seasonal impact on reproduction
Life Cycles	Ordering pictures , showing stages of life cycle.	Diagram to show life cycle of a familiar plant.	Comparing and understanding the differences of life cycles. (seasons)	Comparing and understanding the differences of life cycles in different plants.
Classification	Sort and classify a range of seeds into dispersal methods.	Using classification keys to categorize plants into groups.(Flowers/leaves)	Classify plants into how they reproduce.	Devising classification keys in their immediate environment. Giving reasons for classification.

Science Skills Coverage- Animals

Skill	Y3	Y4	Y5	Y6
Identification and functions	Identify bones in the bodies and explain how the skeleton and its muscles work together.	Identify different types of teeth and their functions. Identify body parts associated with the digestive system.	.	Identify major parts of the human circulatory system and its functions.
Classification	Identify invertebrates and vertebrates.	Assign living things to groups developing their own keys.	Describe how we define mammals and how this relates to classification.	Recognise the break-down of the classification system and its inception.
Food Chains	Identify the positions within a food chain.	Identify the positions within a food chain and define the terms (Predator, prey ect)		
Reproduction			Describe the process of sexual reproduction in a familiar animal and	

			important for species survival. See Jigsaw for links to human body and puberty.	
Life Cycles			Key stages in development from birth to old age. Draw the life cycle of insects, birds and mammals. Differences and similarities. Gestation and birth – variation within species.	Describe how the life cycle of bacteria and viruses.
Nutrition	Describe how each of the main food groups benefit the human body. Designing a healthy meal based on this.	Identify different foods that can effect teeth and oral hygiene. Compare and contrast the digestive system of a herbivore and carnivore.	Make informed choice to maintain health and well-being. Explaining choices.	Describe how lifestyle is important and the impacts of it on the body. Understanding the impact of drugs and other substances on the body.

	Comparing diets of a herbivore and a carnivore with humans.			

Science Skills Coverage-Evolution and inheritance

Skill	Y3	Y4	Y5	Y6
Identify/ Function	Identify a range of fossils animals and plants from pictures. Define what a fossil is and how they are formed. Suggest what the fossils of the future may be.			Identify feature which are inherited from parents. Eg-eye colour. Match offspring to their parents –linked to observable features. Identify how specific plants or animals have adapted to their environment. Explain how fossils are formed and how discoveries have

				developed the theory of evolution.
Enquiry				Describe how variation in living things leads to evolution of a species. Research the work of Darwin/ Wallace to explain the theory of evolution.
Impact				Suggest ways in which future changes in climate may impact on us and other living things. Suggest ideas for how we may adapt to these changes.

Science Skills Coverage-Earth and Space

Skill	Y3	Y4	Y5	Y6
Identify/ Function			Name the eight planets of the solar system. Describing their position and movement relative to the sun and other planets. Describe what a moon is and how they maintain an orbit round a planet. Describe the key force responsible for planets being spherical.	
Research/Justification			Explain day and night using the Earths rotations.	Explain how the day length changes in other parts of the world. EG- Artic / Equatorial regions.

			Explain how the Earths position affects day length.	
Comparisons				Compare times in other parts of the world and relate it to the use of time zones.

Science Skills Coverage-Electricity

Skill	Y3	Y4	Y5	Y6
Safety	Create rules that show an understanding of electrical safety requirements in the home.	Recognise the dangers of working with electricity and work safely.		Demonstrate how to work safely with electrical circuits.
Identification		Identify/name a range of familiar devices and equipment that require electricity for power.		Identify/ name components of circuits and define terms such as voltage/current.
Circuits		Construct simple series circuits using a range of		Construct a series circuit for a specific

		components and switches. Predict whether a circuit will work and draw simple circuits using their own or own circuit symbols. Recognise that a cell is a power source generating and pushing current through a circuit and by adding cells the power increases.		device and explain how it works. Draw a series circuit using conventional circuit symbols. Describe the relationship between number/voltage of a cell and the effect it has on a bulb or buzzer.
Classify		Sort and classify materials into conductors and insulators.		Predict materials that could be good conductors of electricity and conduct a fair test.

Science Skills Coverage-Forces

Skill	Y3	Y4	Y5	Y6
Identify/ Function	Name a range of familiar daily activities which are caused by forces and magnets. Describe forces in actions –pulling and pushing and whether the force require direct contact between objects or whether the force can act at a distance. Explain the terms magnetic attraction, repulsion and magnetic poles.	Identify how the magnetic north and south pole is different to the geographic north and south poles. Demonstrate key forces in actions during a given activity. Develop research skills using secondary sources, eg Find out why auroa form at north and south magnetic poles.	Identify and define opposing forces that act upon objects moving through air, water or along a surface. Describe the force of gravity, what causes it and how it can change. Use study of scientists Newton/Galileo. Demonstrate, using a model, how simple levers, gears and pulleys assist the movement of objects.	Recap previous years
Predictions	Make predictions, explain thinking and then test a range of magnets for strength and polarity.		Make predictions to test the effect of friction of movement and distance travelled.	
Classification	Sort and group materials into those that are magnetic and		Classify and group forces based on their actions or whether they	

	those that are not and identify patterns.		act directly or at distance.	
Measuring	Compare how an object moves over surfaces made from different materials making predictions and measuring distance travelled.	Test whether any materials block magnetic attractions. Compare the speed in which objects fall to the ground through the same distance of air or water, using their knowledge of forces to explain.	Compare the speed with which objects of different shapes and different surface area fall through air and explain reasons for differences.	

Science Skills Coverage- Light and sound

Skill	Y3	Y4	Y5	Y6
Identification and functions	Identify that light is reflected from surfaces, using equipment such as mirrors. Recognise that dark is the absence of light and	Listen to and be able to identify different familiar sounds and what is vibrating. Describe how sound travels through a	Identify by investigation if and how light and sound travels through space, using specific examples.	Identify parts of the eye and draw a diagram showing how light enters our eyes in order to see, using the correct scientific terminology.

	describe how it behaves. Explain how shadows are formed.	medium to the outer ear and how sound is transferred to the inner ear. Describe and demonstrate how the volume or the pitch of a sound can be altered using equipment.	Describe the Earth's rotations to explain day and night.	Describe how white light can be split using prisms and droplets of water and what colours white light is made from.
Classification through Investigation	Classify a range of objects as sources or reflectors. Compare how the size, shape and sharpness of shadows can change.	Investigate and classify materials for their ability to insulate against sound.	Investigate shadows in relation to times of day and explain why the sun appears to move across the sky.	Classify a range of objects or surfaces for their reflective qualities using scientific testing. Compare how a beam of light changes direction when passing through different mediums.
Measuring		Measure and compare the volume of a sound at different distances from its source.	Compare day lengths during different seasons and provide an explanation for why they differ.	Explain how light behaves and travels in straight lines. Demonstrate using a model/diagram and how this explains why

				we can see objects and how shadows are formed.
Impact	Recognising that light from the sun is damaging for vision and the skin and how we can protect ourselves.	Recognise that certain sounds can be damaging for hearing and identify ways which the ear can be protected.	Recognise that it isn't safe to look directly at the Sun, even when wearing dark glasses.	Recognise the dangers of using lasers and how they can be used safely.

Skill	Y3	Y4	Y5	Y6
Identification		Listen to and be able to identify different familiar sounds and what is vibrating.	.	
		Describe how sound travels through a medium to the outer ear and how sound is transferred to the inner ear. Describe and demonstrate how the volume or the pitch of a sound can be altered using equipment.		
Classify	.	Investigate and classify materials for their ability to insulate against sound.		
Measuring		Measure and compare the volume of a sound		

		at different distances from its source.		
		Recognise that certain sounds can be damaging for hearing and identify ways which the ear can be protected.		.
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Science Skills Coverage-Substances, matter and materials

Skill	Y3	Y4	Y5	Y6
Identification of materials	Identify names of rocks and soil. Describing how fossils are formed	Identification of water changes state- using correct terminology. Relating this to the water cycle.	Identify a wide range of reversible and irreversible changes in everyday life.	Identify plants that have survived on Earth for millions of years and how we know this.
Classification	Classifying/grouping rocks according to physical properties and appearance. Investigate the physical properties	Classifying liquid, solids and gasses.	Classifying/group mixtures for how they can be separated.	Revision of previous year groups.

	of one or a number of rock types and relate their properties to their appearance.	Describe the properties of solids, liquids and gasses.	Describe physical properties including transparency, conductivity, solubility and magnetism. Providing evidence and reasons why a material may be chosen.	
Enquiry	Suggest reasons why certain rocks or stones are used for a specific purpose. Explain the terms weathering and erosion and describe the effect they have on different types of rocks/soils.	Describe a material whose use can change as its state changes. Explain the effect of heating and cooling on a range of substances.	Describe what happens when a solute dissolves in a solvent to form a solution.	
Presenting data	Compare in details a range of rock or soil samples from the locality, using simple tables and diagrams to present their findings.	Measure or research the temperate at which materials change state.	Compare reversible with irreversible change, using flow diagrams /equations to show which materials are added/ what is made and indicating if the reaction can be reversed.	

Science Skills Coverage- Working scientifically

Skill	Y3	Y4	Y5	Y6
Questioning	Use ideas to pose questions, independently about the world around them.	Suggest relevant questions and know they can be answered in a variety of ways.	Raise different types of scientific questions and hypothesis.	Pose the most appropriate line of enquiry to investigate scientific questions.
Enquiry	Discuss enquiry methods and describe a fair test. Make decisions about what to observe during an investigation.	Make decisions about different enquiries including recognizing when a fair test is necessary and begin to identify variables. Making systematic and careful observations.	Plan and carry out comparative and fair tests. Making systematic and careful observations.	Select and plan the most suitable line of enquiry. Explaining which variables need to be controlled and why. Making systematic and careful observations.
Measuring	Take accurate measurement using standard units.	Take accurate measurement using standard units and a range of equipment.	Take accurate measurements using standard units and a range of equipment	Choose the most appropriate equipment in order to take measurements

			with increasing accuracy.	explaining how to use it accurately. Decide how long to take measurements for, checking results with additional reading.
Recording	Talk about some criteria for grouping, sorting and categorizing, beginning to see patterns in relationships. Record finding using scientific language and present in note form, diagrams, tables and charts. Gather record and use data in a variety of ways to answer a simple question. With help, draw a simple conclusion based on evidence	Identify similarities/differences/changes when talking about scientific processes. Use and begin to create simple keys. Choose appropriate ways to record and present information, findings and conclusions for different audiences. Identify, with help, changes, patterns, similarities and differences in data to help form conclusions. Use scientific evidence which support their findings.	Use and develop keys to identify, classify and describe living things and materials. Record data and results of increasing complexity, using scientific diagrams, labels, classification keys, tables, bar and line graphs and models. Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.	Identify and explain patterns seen in the natural environment. Choose the most effective approach to record and report results, linking to mathematical knowledge. Identify and explain causal relationships in data and identify evidence that supports or refutes their findings. Select fact from opinion.

	form an enquiry or observation.	Use recorded data to make predictions, pose new questions and suggest improvements for further enquires.	Use a simple mode of communication to justify conclusions on a hypothesis and begin to recognize how scientific ideas change over time.	Identify validity of conclusion and required improvements to methodology. Discuss how scientific ideas develop ever time.