Be the Best .....

Lewannick Community Primary School

Cycle A | Kestrel Class | Y5&6

	Autumn 1 Ain't no mountain high enough Year 5 Plymouth Science	Autumn 2 Are we still evolving? Year 6 Plymouth Science	Spring 1 Battles, Blackouts and the Blitz	Spring 2 A Pollution Solution Year 6 Plymouth Science	Summer 1 Is it creepy, is it crawly? Year 6 Plymouth Science	Summer 2 Greece Lightning Year 6 Plymouth Science
Big Concepts	Earth and Space	Evolution and Inheritance	Sound	Electricity	Living Things	Light
Scientific Enquiry ✨	Raise questions and suggest reasons for similarities and differences. Use measurement to represent planets in a model Record my work using scientific diagrams and labels. Use a model to discuss communicate and justify scientific ideas using scientific vocabulary. Present results in a variety of ways to answer a question. Plan own test and control variables.		Observe vibrations which cause sound. Measure distance to nearest cm. Set up tests to create the best string phone. Record results in a table and spot patterns. Record sound measured in DB in a table. Produce line graph. Evaluate musical instrument based on sound and knowledge of pitch. Observe how sounds are created. Set up own tests and record results. Set up own tests based on animal ear shapes or this could be asking questions.	Answer questions by investigating Take accurate measurements Develop predictions Present results Use diagrams to support explanations	Answer own questions and record results in a table Use a classification key Make observations Raise questions about animals in order to group Predict how micro-organisms will decay food Evaluate the effects of yeast	Use scientific models and labelled diagrams. Draw diagrams with accuracy. Use diagrams to support explanations Make careful observations Make predications based on scientific knowledge. Evaluate using scientific language
Prior Learning and opportunity for recap and recall	Children will be able to : Identify how sounds are made Recognise that vibrations from sound travels through a medium. Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Children will be able to: Understand the differences between living, dead and never lived Describe how animals obtain their food from plants and animals Understand that animals, including humans have off-spring which grow into adults Understand the requirements of plants for life and growth Understand a variety of lifecycles of plants and animals Describe in simple terms how fossils are formed when things that have lived are trapped in rock Recognise that environments can change and that this can pose a danger to living things	Children will be able to: Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Children will be able to: Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of the complete loop with a battery Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp light is in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors	Children will be able to: Identify and name a variety of common wild and garden plants identify and describe the basic structure of a variety of common flowering plants, including trees. Identify and name a variety of common animals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals Understand the differences between living, dead and never been alive Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things	Children will be able to: Recognise that they need light to see things and that dark is the absence of light Notice that light is reflected from surfaces Recognise that light from the sun can be dangerous and that there are ways to protect their eyes Recognise that shadows are formed when the light from a light source is blocked by an opaque object Find patterns in the way that the size of shadows change
Core Knowledge	Show using diagrams the movement of the Earth and moon. Explain the rotation of the Earth and how this causes night and day. Explain evidence gathered about the position of shadows in terms of movement of the Earth. Explain how a sundial works. Explain why we have time zones.	Explain the process of evolution. Give examples of how plants and animals are suited to their environment. Give examples of how an animal or plant has evolved over time e.g. penguin, peppered moth. Give examples of things that lived millions of years ago and the fossil evidence to support this. Identify where offspring are not identical to their parents.	Describe different types of objects producing different sounds and that the sound is produced by vibration in the object. Describe sounds travelling through different mediums such as air, water, metal. Find patterns between pitch and volume and the features of the object producing it. Recognise that sounds get fainter as the distance from the sound source increases. Explain what happens when you strike a drum or pluck a string- use diagrams to show. Demonstrates how to increase/decrease pitch and volume.	Make circuits to solve particular problems e.g. how to make the door bell louder. Carry out fair tests exploring changes in circuits Make circuits that can be controlled. Understand electricity symbols and draw circuits. Understand how switches work. Understand electrical hazards. Understand how cells/batteries work. Understand voltage.	Give examples of animals in the five vertebrate groups and some of the invertebrate groups. Give key characteristics of the five vertebrate groups and some invertebrate groups. Give examples of flowering and non-flowering plants. Use classification keys to identify unknown plants and animals. Create classification keys. Give a number of characteristics that explain why an animal belongs to a particular group.	Describe with diagrams how light travels in straight lines, either from sources or reflected from other objects into our eyes. Describe with diagrams how light travels in straight lines past translucent or opaque objects to form a shadow of the same shape.

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Thinking like a …….						
Vocabulary	Earth, sun, moon, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune, Pluto (dwarf planet), spherical, solar system, rotates, star, orbit, planets, axis, night, day, season, galaxy. Meteorite, celestial.	Offspring, sexual reproduction, vary, variation, characteristics, suited, adapted, environment, inherited, species, fossils, adaptation, acquired characteristic, inherited characteristic, gene, natural selection, artificial selection.	Sound, source, vibrate, vibration, travel, pitch, volume, faint, loud, insulation.	Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage. NB Children do not need to understand what voltage is but will use volts and voltage to describe different batteries. The words cells and batteries are now used interchangeably	Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and non-flowering.	Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous, refraction, medium, dense.
Lesson 1	Describe the movement of the Earth and other planets, relative to the sun in the solar system. I can raise questions and ask questions and suggest reasons for similarities and differences. I can identify and classify planets.	I understand that fossils provide information about living things that inhabited the Earth millions of years ago. I can use ideas from secondary sources to support my ideas. I can identify scientific evidence that has been used to support or refute ideas or arguments	To identify how sounds are made, associating some of them with something vibrating. I can observe vibrations which cause sound. We are identifying how sounds are made	I can compare and give reasons for variations in how components function. I can answer questions by investigating. I can identify different electrical components.	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 I can classify plants and animals and record in a table I can sort plants and animals based on their observable characteristics.	I recognise that light appears to travel in straight lines. I can use scientific diagrams, models and labels. I can look for patterns in how light reflects from surfaces.
Lesson 2	Describe the movement of the Earth and other planets, relative to the sun in the solar system. I can use measurement to represent planets in a model. I can identify and classify planets.	Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents I can raise questions about a range of phenomena I can talk about and explain my research using scientific knowledge and understanding	Recognise that vibrations from sounds travel through a medium to the ear. - Recognise that sounds get fainter as the distance from the sound source increases. I can set up tests to create the best string phone I can plan a fair test.	To use recognised symbols when representing a simple circuit in a diagram. I can take accurate measurements using a data logger. I can notice patterns when I add more bulbs to a circuit.	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 I can answer my own questions based on observations made. I can use and produce classification keys independently by posing questions. I can classify and sort minibeasts using classification keys.	Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. I can use labelled diagrams to support my explanation. I can use subject knowledge and research to make a periscope
Lesson 3	Describe the movement of the moon relative to the Earth. I can record my work using scientific diagrams and labels when representing the Moon phases. I can observe changes over time.	I recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. I can develop predictions not based on results of a scientific enquiry but using own ideas and subject knowledge. I can identify patterns which can be found in natural environments	Find patterns between pitch and volume of a sound and features of the object that produced it. I can record my results in a table to spot patterns. I can spot patterns in my results.	To compare and give reasons for variations in how components function. I can make predictions using my own ideas and subject knowledge. I can compare how effective different materials are to make a battery.	Give reasons for classifying plants and animals based on specific characteristics. I can raise questions about animals to group and classify. I can research the specific classifications of animals using the Linnaeus system.	Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes I can make careful observations about how the eye works. I can identify different parts of the eye and explain how each part works.
Lesson 4	Describe the Sun, Earth and Moon as approximate spherical bodies. I can use a model to discuss, communicate and justify scientific ideas using scientific vocabulary. I can use research and secondary sources to find out about the Moon.	To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. I can focus on scientific reasons for overall patterns rather than comparisons. I draw valid conclusions when sorting and classifying.	Recognise that sound gets fainter as the distance from the sound source increases I can record my results in a table and a line graph. I can spot patterns in my results to make conclusions.	To associate the volume of a buzzer with the number and voltage of cells used in the circuit I can use my results and present them in a line graph. I can carry out a fair test to compare voltage with the amount of sound produced in a circuit.	Give reasons for classifying plants and animals based on specific characteristics. I can observe and raise questions about animals and how they are adapted to their environment. I can research animals to place them in the classification system	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. I can draw diagrams to represent concepts with accuracy I can look for patterns in my observations.
Lesson 5	To use the Earth's rotation to explain day and night due to the apparent movement of the sun across the sky. I can present my results in a variety of ways to answer a question. I can look for patterns in how much day light each place gets in relation to where the country is located.	To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. Children use scientific diagrams and labels to explain abstract concepts. I can present my findings including explanations in oral and written forms.	I can find patterns between pitch and volume of a sound and the features of the object that produced it. We are observing how sounds are created and feeling the vibrations causing the sound. I can carry out a pattern seeking enquiry.	To design and construct simple electric circuits for a purpose. (application of…variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.) I can use labelled diagrams to support my explanations.	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 I can make predictions on how microorganisms will affect food over time.	Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. I can make predictions based on scientific knowledge and use tests to gather evidence to support my predictions.

				We are researching different ways to apply our electronic knowledge.	I can observe the effects of microorganisms over time.	can use subject knowledge about refraction to make predictions.
Lesson 6	Describe the movement of the moon relative to the Earth. WS: I can plan my own fair test and control variables. I can plan my own fair test and control variables. I can conduct a fair test where variables are identified and controlled.	I can recognise that normally offspring vary and are not identical to their parents inheritance. I can describe and evaluate my own and other people's scientific ideas supported by evidence. I can look for patterns when considering variation.	I can plan a fair test I can evaluate my test	To use and understand recognised symbols when representing a simple circuit in a diagram. I can use scientific diagrams and labels accurately. I can identify the correct component to use in a circuit following step by step instructions.	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. Children to evaluate the effects of yeast in baking. I can look for patterns in data to use when evaluating	Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye I can evaluate, using scientific language, how my enquiry answers the question. I can look for patterns in how we see things.
Assessment Opportunities	End of Unit Quiz Children's comments and completion of learning tasks Response to developmental marking	Final knowledge assessment/End of unit quiz Completed concept maps Verbal feedback from children during whole class discussions and 1:1 feedback From developmental marking and feedback	End of Unit Quiz Children's responses to learning tasks	End of Unit Quiz Children's responses to learning tasks	Completed concept map End of Unit Quiz Response of verbal and developmental feedback	Completed concept map End of Unit Quiz Children's responses to learning tasks Verbal feedback from children during whole class discussions and 1:1 feedback
SEN Provision	Use of Word Banks Use of drawings with annotations Pre-prepared diagrams and labels Use of a scribe	Pre-prepared pictures Use of drawings with annotations Use of a scribe	Word Banks Pre-prepared diagrams and labels Use of diagrams and annotations	Word Banks Pre-prepared diagrams and labels Use of diagrams and annotations	Pictures of parts of a circuit Word banks Use of drawings with annotations Use of a scribe	Drawings with annotations Word Banks Use of scribe Pre-prepared labels
Unit Must	Describe the movement of the Earth and other planets, relative to the sun in the solar system. With support, describe the movement of the moon relative to the Earth With support, use Earth rotation to explain day and night due to the apparent movement of the sun across the sky.	To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago To recognise that living things produce offspring of the same kind With support, identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	To identify how sounds are made Recognise that vibrations cause sound With support, find patterns between pitch of sound the object it has come from With support, understand relationship between volume of sound and the strength of vibrations Recognise that sound gets fainter as the distance from the sound source increases	To compare how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. To use recognised symbols when representing a simple circuit in a diagram.	Describe how living things are classified into broad groups according to common observable characteristics With support, give reasons for classifying plants and animals based on specific characteristics.	Recognise that light appears to travel in straight lines. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes With support: Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Should	Describe the movement of the Earth and other planets, relative to the sun in the solar system. Describe the movement of the moon relative to the Earth. Describe the Sun, Earth and Moon as approximate spherical bodies. Use Earth rotation to explain day and night due to the apparent movement of the sun across the sky.	To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	To identify how sounds are made, associating some of them with something vibrating. (Vibration stations) Recognise that vibrations from sounds travel through a medium to the ear. (String phones) Find patterns between pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it.	To 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. To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. To use recognised symbols when representing a simple circuit in a diagram.	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.	Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

			Recognise that sound gets fainter as the distance from the sound source increases			
Could	Use Earth rotation to explain the seasons					