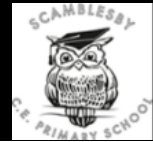


SCAMBLESBY CE PRIMARY SCHOOL: MEDIUM TERM-PLANNING Y1/2 SCIENCE



Milestone 1 Working Scientifically

- Ask simple questions.
- Observe closely, using simple equipment.
- Perform simple tests.
- Identify and classify.
- Use observations and ideas to suggest answers to questions.
- Gather and record data to help in answering questions.

Earth and Space and Seasonal Changes (Autumn Term)

Understand the Earth's movement in space: This concept involves understanding what causes seasonal changes, day and night.

Milestone 1:

- Observe the apparent movement of the Sun during the day.
- Observe changes across the four seasons.
- Observe and describe weather associated with the seasons and how day length varies.

Vocabulary

Earth, Sun, Moon, space, seasons, spin, orbit, weather, changes

Session	Learning Objective	Learning Question / Success Criteria	Lesson outline
1	To know the times of day and night, including midday and midnight, and appreciate that sunrise and sunset change during the year.	How many hours are there in a full day? Why does the sun look like it's moving in the sky during the day? SC: I know there are 24 hours in a full day. (Basic) SC: I know that sunset and sunrise happen because the earth is rotating around the sun. (Advancing) SC: I can demonstrate a 24-hour cycle using a model earth and sun. (Deep)	Share Knowledge Organiser
2	To know that we can use the position of the sun in the sky to identify key points during the day.	If the Sun is in the east, what does that tell us? The sun is directly above me – is it time for lunch? SC: I know that the sun appears to rise in the East and set in the West. (B) SC: I can show with shadows the effect of the Sun on an object at different times of the day. (A) SC: I can explain the effect of the sun moving across the sky during the day. (D)	
3	To know the four seasons and the months, key dates (eg: birthdays) and weather conditions that characterise each season.	A year is a long time – what happens in every year, at roughly the same time? SC: I know that some events happen annually. (B) SC: I can identify, using a calendar or visual prompts, different annual events and how the seasons structure the year. (A) SC: I can describe the seasons and the weather conditions that characterise them. (D)	Organisation of photos, events and key dates into the correct place on a 'year wheel' (divided into quarters)

4	To know that seasons can contain 'unseasonal weather' and identify why this might be.	Is it sunny every day in Summer? Will it snow in Spring? <i>SC: I can describe weather and seasonal expectations. (B)</i> <i>SC: I can identify unseasonal weather. (A)</i> <i>SC: I can use data to explain seasonal and unseasonal temperatures and rainfall. (D)</i>	'Prove It!' activities for more able. Watch examples of weather forecasts and read online versions, interpreting symbols and looking for patterns over a week.
Assessment	Rising Stars: Year 1, Tests 1 – 4 (choice of...), Y1/2 Milestone 1 Earth and Space / Seasonal Changes Unit Analysis and Powerpoints		

Light, Sound and Forces* (Autumn Term) * - Forces to be taught in the Spring Term

Investigate light and seeing: This concept involves understanding how light and reflection affect sight

Investigate sound and hearing: This concept involves understanding how sound is produced, how it travels and how it is heard.

Understand movement, forces and magnets: This concept involves understanding what causes motion.

Milestone 1	- Observe and name a variety of sources of light, including electric lights, flames and the Sun, explaining that we see things because light travels from them to our eyes. - Observe and name a variety of sources of sound, noticing that we hear with our ears. - Notice and describe how things move, using simple comparisons such as faster and slower. - Compare how different things move.		
Vocabulary	LIGHT: sight, eyes, straight lines, shadow, light sources, transparent, translucent, opaque SOUND: loud, quiet, pitch, sound waves, ears, muffled, insulation FORCES: push, pull, movement, fast, slow, friction, gravity		
Session	Learning Objective	Learning Question / Success Criteria	Lesson Outline
1	To know a range of light sources and that light travels in straight lines from objects to our eyes	Why can't I see in the dark? How do mirrors work? <i>SC: I can name a range of light sources. (B)</i> <i>SC: I can demonstrate how light travels in straight lines to reach our eyes. (A)</i> <i>SC: I can draw diagrams to show how mirrors work. (D)</i>	Share Knowledge Organiser
2	To know how we can restrict and block light with different materials	I don't like bright lights – what can I do to help? <i>SC: I know how to make a shadow. (B)</i> <i>SC: I know how to vary the shape and size of shadows. (A)</i> <i>SC: I can devise an investigation to check the opaqueness of a range of materials. (D)</i>	Investigation opportunity
3	To know that we are surrounded by a range of noises, and they have different volumes and pitches.	How do we hear? How many sounds can I hear inside / outside the classroom? What is an example of a 'nice' and 'horrible' sound? <i>SC: I can name a range of sound sources. (B)</i> <i>SC: I can observe how we hear sounds from different directions. (A)</i> <i>SC: I can suggest ways we can protect our ears from loud noises. (D)</i>	Share Knowledge Organiser Aural treasure hunt in and out of the classroom Explanation of how the ear works

4 THIS SESSION TO BE EXTEND ED AND TAUGHT IN FIRST 2 WEEKS OF SPRING TERM	To know that forces are needed for objects to move, and they might be pushes or pulls	How can I get off my chair? How does a toy car move? If I drop a piece of paper, what happens? SC: I know what happens to objects when they are pushed and pulled? (B) SC: I can experiment with a slope and record how this changes the speed at which an object rolls. (A) SC: I can devise ways to slow down a toy car rolling down a slope. (D)	Share Knowledge Organiser Annotation of cartoons and photographs. Extend to dropping scrunched up and flat paper –discussion of gravity and air resistance (for more able children)	
	Assessment	Rising Stars: Years 1 and 2 Tests 1 – 4 (choice of...), Y1/2 Milestone 1 Light, Sound and Forces Unit Analysis and Powerpoints		
	Electricity (Autumn Term)			
Understand electrical circuits: This concept involves understanding circuits and their role in electrical applications.				
Milestone 1	- Identify common appliances that run on electricity. - Construct a simple series electrical circuit.			
Vocabulary	Circuit, electricity, danger, bulb, buzzer, wire, motor, crocodile clips, current, batteries, mains electricity			
Session	Learning Objective	Learning Question / Success Criteria	Lesson Outline	
1	To know the names of items which require electricity to work	Does a phone need electricity to work? What does a battery do? SC: I can observe and name some sources of electricity (mains, battery). (B) SC: I can categorise and compare and contrast electrical appliances and can explain the reasons for my categories. (A) SC: I can investigate: Always, sometimes or never? Electrical appliances need batteries or mains electricity to power them. (D)	Share Knowledge Organiser Sorting and matching activities	
2	To know how to create a simple electrical circuit	How can we get the bulb to light up? SC: I can follow instructions to construct an electrical circuit. (B) SC: I can modify a circuit to add more components. (A) SC: I can diagnose and repair a broken circuit. (D)	Investigations	
Assessment	Rising Stars: Year 1, Tests 1 – 4 (choice of...), Y1/2 Milestone 1: Electricity Unit Analysis and Powerpoints			

Materials (Spring Term)

Investigate materials: This concept involves becoming familiar with a range of materials, their properties, uses and how they may be altered or changed.

Milestone 1

- Distinguish between an object and the material from which it is made.
- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.
- Describe the simple physical properties of a variety of everyday materials.
- Compare and group together a variety of everyday materials on the basis of their simple physical properties.
- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick and paper/cardboard for particular uses.

Vocabulary

Materials, wood, stone, plastic, water, glass, metal, rock, characteristics, properties, similarities, differences, composites, function, feasibility

Ses sion	Learning Objectives	Learning Question / Success Criteria	Lesson Outline
1	To know that objects are made from materials and to be able to match objects to a range of materials, including composites	What is my chair made of? What do my pencil and a cricket bat have in common? SC: I can match an object to its original material. (B) SC: I can choose some objects and explain how they were made from their original material. (A) SC: I can group objects based on the materials they are made from and explain my groupings. (D)	Share Knowledge Organiser
2	To know the properties of a range of materials and suggest possible uses	Why is the floor suitable for walking on but not for sleeping on? SC: I know the properties of a range of materials. (B) SC: I can use my knowledge of the properties of a range of materials to suggest uses. (A) SC: I can suggest possible uses for a range of materials and suitable materials for a range of uses. (D)	
3	To know that items in the classroom and school have different uses and therefore are made of different materials	How many different materials can I find in Hedgehogs Class? SC: I can play 'I Spy' to demonstrate my knowledge of different materials in the classroom. (B) SC: I know the reasons why objects in our classroom are made of different materials. (A) SC: I can suggest appropriate and inappropriate uses for objects of different materials, justifying my opinions and hypotheses. (D)	'Treasure Hunt' around school, photographing and classifying objects and examples of different materials and composites used in specific ways, and suggest feasible alternatives or VERY unfeasible alternatives.
4	To know that different materials have more or less suitability for the task they are used for.	Is a paper boat an effective idea? Is a wooden football a good idea? SC: I can match a material to an appropriate use and an inappropriate use. (B) SC: I know that some materials are more effective for specific purposes than others. (A) SC: I can devise an investigation to prove that one material is more suitable for a purpose than other materials. (D)	'Prove It!' opportunities Questionnaires and investigations to prove / disprove hypotheses
Assessment	Rising Stars: Year 1 and 2, Tests 1 – 4 (choice of...), Y1/2 Milestone 1: Materials Unit Analysis and Powerpoints		

Plants (Summer Term)

Understand plants: This concept involves becoming familiar with different types of plants, their structure and reproduction.

Milestone 1	- Identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen. - Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers. - Observe and describe how seeds and bulbs grow into mature plants. - Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.		
Vocabulary	Flower, stem, roots, stalk, seeds, bulbs, pollen, trunk, leaves, deciduous, evergreen, sycamore, oak, pine, holly, trees, bushes, moss, vegetables, fruit, life cycle, oxygen, sunlight,		
Session	Learning Objective	Learning Question / Success Criteria	Lesson Outline
1	To know a range of plants and trees and their characteristics, including if they are deciduous or evergreen	Why might someone want to plant fir trees? Which different trees can be found around the school? <i>SC: I know the name of trees which are evergreen and which are deciduous. (B)</i> <i>SC: I know the similarities and differences between deciduous and evergreen trees and can think of some ways to categorise plants. (A)</i> <i>SC: I can suggest a garden design for someone who likes privacy and bright autumn colours. (D)</i>	Share Knowledge Organiser 'Gardener's World' activity. Design gardens for different needs – all year privacy, bright colours, children...
2	To know the basic structure of a flowering plant and the purpose of each part.	What two purposes do roots have? Why are petals brightly coloured? <i>SC: I know the names of parts of flowering plants and I can describe the structure of each part of a flowering plant. (B)</i> <i>SC: Taking a selection of (real) different flowering plants, I know what are the structural features (A)</i> <i>SC: I can explain why roots are always at the bottom of a plant and why they are the first thing to grow. (D)</i>	Art – Collage opportunity
3	To know why plants need sunlight, water and a suitable temperature to grow effectively	What happens if a plant does not get watered enough? Is sunlight important for a plant to grow healthily? <i>SC: I know what plants need to stay healthy. (B)</i> <i>SC: I know how to recognise plants that have been exposed to insufficient temperature, light, water or space. (A)</i> <i>SC: I can devise a way of proving that plants need certain conditions for growth.</i>	Link back to 7 life processes. Investigation about different requirements for plants to grow
Assessment	Rising Stars: Year 1 and 2, Tests 1 – 4 (choice of...), Y1/2 Milestone 1: Plants Unit Analysis and Powerpoints		

Animals and Humans (Summer Term) * to be started in last two weeks of Spring Term...

Understand animals and humans: This concept involves becoming familiar with different types of animals, humans and the life processes they share.

Milestone 1	- Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. - 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 (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets). - Identify name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. - Notice that animals, including humans, have offspring which grow into adults. - Investigate and describe the basic needs of animals, including humans, for survival (water, food and air). - Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.
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Vocabulary	Classification, animals, mammals birds, reptiles, amphibians, fish, crustaceans, vertebrates, invertebrates, insects, life cycles, adaptation, shelter, food, water, 7 life processes, healthy living, senses, herbivores, omnivores, carnivores
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Session	Learning Objective	Learning Question / Success Criteria	Lesson Outline
1 and 2	To know that the animal kingdom is divided into a range of species and that each species have a set of specific shared characteristics.	How are goldfish, canaries and rabbits different from each other? SC: I know that animals can be grouped in different ways and I can identify how this can be done. (B) SC: I can use a branching diagram and my knowledge of characteristics to identify and describe a range of animals. (A) SC: I can create a branching diagram to classify a number of animals. (D)	Share Knowledge Organiser, Branching diagram activities
3 and 4	To know the difference between carnivores, omnivores and herbivores and use food chains to explain sequence	What makes a herbivore different to a carnivore? Are humans carnivores? What do all food chains start with? SC: I know that herbivores eat only fruit and vegetables and that carnivores eat meat. (B) SC: I can name a range of animals (and humans) that are either herbivores, omnivores or carnivores. (A) SC: I can read and create food chains, identifying that they all start with plants. (D)	Research and fact files about a range of animals, identifying shared characteristics. Construction of food chains – discussion about how they are created and what is at the start and end of each one? Greater depth – T or F – carnivores are never hunted by other carnivores.
5	To know the structure of a range of animals	What evidence can you show to prove that a reptile is different to a mammal, and that a bird is different to a fish? SC: I can describe the physical characteristics of a range of animals. (B) SC: I can describe the physical characteristics of a range of animals, identifying similarities and differences. (A)	Study of physical characteristics and life cycles of a range of different classes of animals. Explain to an alien visitor the differences and similarities between a range of animals.

		<i>SC: I can explain the differences between different animals and what they tell us about diet, habitat and adaptation. (D)</i>	
6	To know the basic parts of the human body and how they are related to the 5 senses.	How does the human body work? <i>SC: I can name the 5 senses. (B)</i> <i>SC: I can name the 5 senses and how they help us in life. (A)</i> <i>SC: I can identify the challenges encountered if one of the senses didn't work effectively. (D)</i>	Description of how the human body works in relation to the senses, and the implications for blind and deaf people. Challenge – how could we make our school suitable for a blind or deaf pupil?
7	To know the seven life processes and how humans respond to / demonstrate them	<i>How do humans show a response to the 7 life processes? (movement, respiration, sensitivity, growth, reproduction, excretion, nutrition)</i> <i>SC: I can name the 7 life processes. (B)</i> <i>SC: I can name and describe the 7 life processes. (A)</i> <i>SC: I can explain how humans (and animals and plants) need the 7 life processes to function successfully for life to continue. (D)</i>	Group work – each group taking a different (suitable) life process and exploring how that can be demonstrated with examples – presentations to rest of class or other class, recorded on Tapestry.
Assessment	Rising Stars: Year 1 and 2, Tests 1 – 4 (choice of...), Y1/2 Milestone 1: Animals and Humans Unit Analysis and Powerpoints		

Habitats and Living Things (Spring Term) [NB: This builds on Autumn's Animals and Humans unit]			
Investigate living things: This concept involves becoming familiar with a wider range of living things, including insects and understanding life processes			
Milestone 1	- Explore and compare the differences between things that are living, that are dead and that have never been alive. - Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants and how they depend on each other. - Identify and name a variety of plants and animals in their habitats, including micro-habitats. - Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.		
Vocabulary	Habitat, adaptation, climate, woodland, desert, meadow, seashore, rainforest, rivers, mountains, ocean, micro-habitat, micro-climate, environment, food chains, dead, once alive, never alive, alive		
Session	Learning Objective	Learning Question / Success Criteria	Lesson Outline
1	to know that the world contains objects which are alive, were once alive and were never alive, and list examples with details justifying their reasons	Was my sofa ever alive? What was / is alive in my garden? Living room? Classroom? Bathroom? Can you prove that a glass was never alive but that a pencil was? <i>SC: I know that the world contains things which are alive, things which were once alive and things that have never been alive. (B)</i> <i>SC: I know that the world contains things which are alive, things which were once alive and things that have never been alive, and can group them accordingly. (A)</i> <i>SC: I can justify my reasons with scientific evidence and observations. (D)</i>	Share Knowledge Organiser Treasure Hunt?

2	To know the offspring of animals can share characteristics with their parents and siblings	What are animal babies called? What do we call a baby sheep, pig, cow, horse etc? <i>SC: I can match baby animals with their parents. (B)</i> <i>SC: I can identify differences and similarities between adult animals and their offspring. (A)</i> <i>SC: I can identify similarities between adults and their children. (D)</i>	Match babies with their parents – humans and animals. Identify similarities and differences between adult and baby animals (inc. humans)
3	To know how habitats differ and how this affects which animals choose to live there, with regard to their survival and dietary needs	Why does a penguin live at the South Pole but a tiger lives in the jungle? <i>SC: I know that animals can be unique to a location. (B)</i> <i>SC: I can suggest reasons why some animals can only be found in certain locations. (A)</i> <i>SC: I know that some animals have adapted over a long time to suit their environment. (D)</i>	Map work identifying different habitats Group work researching a range of animals and their habitats.
Assessment	Rising Stars: Year 1 and 2, Tests 1 – 4 (choice of...), Y1/2 Milestone 1: Habitats and Living Things Unit Analysis and Powerpoints		