KS1 Science Curriculum Overview – Progression in skills

Year 1

Throughout the year chn will ask simple questions and recognise they can be answered in different ways.

Record data about weather throughout the year

Topic		Key skills	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Animals, including Humans Key Question: Is everyone's body the same? Enquiry: Problem solving	**Autumn 1**	Identify name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Use observations and ideas to suggest answers to questions	Know that feet, legs, arms, hands, torso, head, skin, ears, eyes, nose, mouth and tongue are parts of the body and identify them	Know which part of the body is associated with each sense	Know that tongue with taste and skin with touch	Know that eyes are associated with sight, ears are associated with sound How to use a hand lens	Know that the nose is associated with smell Scientist link: Dr. Linda Buck	TAPS Assessment: Body Parts	Observe changes across the four seasons. TAPS Assessment: Seasonal change (all year) Observe over time and record data to help in answering questions
Everyday Materials (Chemistry) Key Question: Are all materials the same?	**Autumn 2**	Distinguish between an object and the material from which it is made. Describe the simple physical properties of a variety of everyday materials. Identify and name a variety of everyday materials, including	Know that Autumn is a season and that animals prepare for Winter. TAPS Assessment: Outdoor Learning:	Know some examples of materials in the real world. (shiny/dull Rough/smooth Hard/soft)	Know from observation how to distinguish between materials made of wood, plastic, glass, metal, water, paper,	Know that some materials are opaque or transparent. TAPS Assessment: Ways to test transparency	Know what materials can float and sink (waterproof/ not waterproof). TAPS Assessment Do: Float and sink	Know materials are absorbent/ not absorbent. Correct way to use a pipette.	

Enquiry: Fair testing		wood, plastic, glass, metal, water and rock. Compare and group together a variety of everyday materials on the basis of their simple physical properties. Perform simple tests to compare and group	Shades of colour Observation		rock, brick, foil, fabrics. (bendy/not bendy Stretchy/stiff)	Recognise that sorting questions can be answered in different ways	Scientist link: Charles Macintosh		
Animals, including Humans (Biology) Key Question: Are all animals totally different? Enquiry: Identifying, grouping and classifying	**Spring 1**	Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets) Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets).	Know that the winter is likely to bring ice on the ground when water freezes due to the cold. Continue TAPS Assessment: Seasonal change (all year) Observe over time and record data to help in answering questions	Introduce animals, what do children know about groups. Pets/not pets?	Know that mammals are different to other animals in that they have fur/hair and they feed milk to their young.	Know that birds are different to other animals in that they have feathers and wings.	Know that fish are different to other animals in having gills so that they can breathe underwater and scaly skin	Know that reptiles are different to other animals in that they breathe air and have scaly skin.	

		Identify and classify							
Animals. including Humans (Biology) Key Question: Are we all the same or are we all different? Enquiry: Research	**Spring 2**	Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets) Describe and compare the structure of a variety of common animals (birds, fish, amphibians,reptiles, mammals and invertebrates, including pets). Identify and classifying	Know that amphibians are different to other animals in that they begin their lives with gills but then develop lungs and breathe on land.	Know that a cat is an example of a carnivore; that a rabbit is an example of an herbivore; know that many humans are examples of omnivores (though not vegetarians)	Science Week	Know that herbivorous animals eat plants; carnivorous animals eat other animals; omnivorous animals eat both animals and plants	Know that fish, amphibians, reptiles, birds and mammals are similar in that they have internal skeletons and organs; these are known as vertebrates, which means they are animals that have a backbone		
Plants (Biology) Key Question: What parts are a plant made from? Enquiry: Observation over time	**Summer 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 closely using simple	TAPS Assessment: Animals including Humans Identify and classify Link to STEM job: zoologists	Know that Spring is one of the four seasons and recognise the signs of spring. Continue TAPS Assessment: Seasonal change (all year) Observe over time and	Know a seed will grow into a plant Observing a seed growing over time (Plant seeds)	Know that a flowering plant consist of roots, stem, leaves and flowers. TAPS Assessment: Leave Look Observing closely	Know that a flowering plant consist of roots, stem, leaves and flowers. TAPS Assessment: Plant structure Observe closely using	Know an oak tree, a birch tree and a horse chestnut tree by sight and know that parts of a tree.	

				record data to help in answering questions		(practising using hand lens)	simple equipment. (Assess- hand lens and rulers) Scientist link: botanists		
Seasonal Changes (Earth Science) Key Question: Is the weather the same every day? Enquiry: Pattern seeking	**Summer 2**	Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. Gathering and recording data to help in answering questions.	Know that evergreen trees maintain their leaves throughout the year and that deciduous trees shed their leaves in autumn. Link to seasons	Know that Summer is one of the four seasons and recognise the signs of Summer. TAPS Assessment: Seasonal changes Observe over time and record data to help in answering questions	Know that weather changes through the year, getting hotter in the summer and colder in the winter.	Know that the four seasons are spring, summer, autumn and winter and know the order of the cycle.	Know that the Earth orbits the Sun with one orbit constituting a year of roughly 365 days. TAPS Assessment: Seasonal changes Observe over time and record data to help in answering questions		

Everyday Materials (Chemistry) **Plants (Biology)** **Seasonal Changes (Earth Science)** **Animal, including Humans (Biology)** **Scientist/STEM jobs**

Working scientifically/enquiry types

Year 2

Topic		***Key skills***	***Week 1***	***Week 2***	***Week 3***	***Week 4***	***Week 5***	***Week 6***	***Week 7***	***Week 8***
Use of Everyday materials (Chemistry) Key question: What materials could be used to make a good boat? Enquiry: Research	**Autumn 1**	Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Ask questions and recognise that they can be answered in different ways Perform simple tests to answer questions Gather and record data to help in	Transition Week	(retrieval) Know that science is a way to understand our world by carefully thinking about it and testing our guesses with observations and experiments. Know that objects are made from materials such as wood, plastic, glass, metal, water, rock Naming	(retrieval) Know that materials have properties such as being hard, soft, strong, weak, absorbent, heavy, light, solid, runny, smooth and rough; these descriptions denote the properties of a material. Know that matter (stuff) is made from tiny building blocks Describing TAPS Assessment: Materials hunt Gather and record data to help in	Know that applying forces to objects can change their shape, by squeezing, stretching, bending and twisting. TAPS Assessment: Rocket mice Perform simple tests to answer questions	Know that materials can have useful properties for a given job (including being waterproof, strong, hard, soft, flexible, rigid, light or heavy) Comparing TAPS Assessment: Waterproof materials Ask simple questions and recognise that they can be answered in different ways STEM job: materials engineers. Charles Macintosh	To research materials to identify properties to make a boat.	Testing materials to identify properties. Know that rubber is flexible, that rock is rigid. Know that polystyrene (a type of plastic) is light and that iron (a type of metal) is heavy. Know that many types of plastic are waterproof, that steel (a type of metal) is strong, that rock is hard, that cotton wool is soft Comparing TAPS Assessment:	Testing materials to identify properties. Know that rubber is flexible, that rock is rigid. Know that polystyrene (a type of plastic) is light and that iron (a type of metal) is heavy. Know that many types of plastic are waterproof, that steel (a type of metal) is strong, that rock is hard, that cotton wool is soft Comparing

					answering questions				Boat materials Describe what they have found out and use their results to make comparisons.	TAPS Assessment: Boat materials Describe what they have found out and use their results to make comparisons.
Living Things and Habitats (Biology) Key question: Is everything on Earth alive? Enquiry: Identifying, grouping and classifying	**Autumn 2**	Identify and name a variety of plants and animals in their habitats, including microhabitats. Explore and compare the differences between things that are living, that are dead and that have never been alive Identify and classifying Gather and record data	(retrieval) Know that a trout is an example of fish, a frog is an example of an amphibian; a lizard is an example of a reptile; a robin is an example of a bird; a rabbit and a human are examples of a mammal	(retrieval) Know that a trout is an example of fish, a frog is an example of an amphibian; a lizard is an example of a reptile; a robin is an example of a bird; a rabbit and a human are examples of a mammal	Know what makes a fish a fish etc features of animal groups.	Know that herbivorous animals eat plants; a carnivorous animal eats other animals; omnivorous animals eat both animals and plants.	Know that living things move, grow, consume nutrients and reproduce; that dead things used to do these things, but no longer do; and that things that never lived have never done these things.	Know that living things move, grow, consume nutrients and reproduce; that dead things used to do these things, but no longer do; and that things that never lived have never done these things.	Assessment Key question: Is everything on Earth alive? TAPS Assessment: Sorting living and non-living Use of appropriate scientific language to communicate their ideas STEM job:	

									zoologists	
Animals Including Humans (Biology) Key question: Is all food good for us? Enquiry: Fair testing	**Spring 1**	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. Using their observations and ideas to suggest answers to questions Identifying and classifiying	Know that animals, including humans, need food, water and air to survive Know the basic food groups: fruit and vegetables, carbohydrates, protein, dairy, fat and sugary foods Know that fats and sugary foods should be eaten rarely and in small amounts.	Know that animals, including humans, need food, water and air to survive Know the basic food groups: fruit and vegetables, carbohydrates, protein, dairy, fat and sugary foods Know that fats and sugary foods should be eaten rarely and in small amounts.	Know that proteins are good for growth, carbohydrates for energy and fruit and vegetables provide vitamins and minerals which help keep us healthy (e.g. calcium for healthy bones and teeth) Know that more than half of our diet should be made up of carbohydrates, fruit and vegetables.	Know that people need to exercise often to help their body stay strong and fit. Know that keeping clean, including washing and brushing teeth, is an important part of staying healthy.	To recognise growth in humans. TAPS Assessment: Comparing hand spans Using their observations and ideas to suggest answers to questions STEM job: an anatomists	To look at a balanced diet for humans. Assessment Key question: Is all food good for us?	NA	NA
Plants (Biology) Key question:	**Spring 2**	Observe and describe how seeds and bulbs grow into mature plants.	Germination Know that is inside a seed Look at seeds/inside a seed make	Know that seeds and bulbs need to be buried underground in soil and that	Science Week	Know that seeds and bulbs need to be buried underground in soil and	Know that plants create seeds to grow new plants (reproduction)			

Do plants grow the same amount every day? Enquiry: Observation over time		Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Observe closely, using simple equipment Performing simple tests	predictions about the range of seeds Observe closely and asking questions	they will grow into adult plants under the right conditions (water, warmth) TAPS Assessment: plant growth Observe closely, using simple equipment STEM job: A botanist		that they will grow into adult plants under the right conditions (water, warmth) Parts of a plant and their jobs				
Living Things and Habitats (Biology) Key question: Are all habitats the same? Enquiry: Pattern seeking	**Summer 1**	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. Describe how animals obtain their food from	Know that plants that are deprived of light, food or air will not grow and will die. Scientist link: George Washington Carver Assessment Key question: Do plants	Know that polar bears are an example of an animal adapted to its environment – thick fur for warmth and oily paw pads to ensure that they don't freeze to the ice	Know that dolphins are another example – smooth skin and streamlined shape for quick swimming; and air hole for breathing.	Know that cacti are an example of a plant adapted to its environment – thick skin keeps a store of water safe; sharp spikes keep animals from stealing the water.	Know that woodlice live under logs – an example of a microhabitat - as they need somewhere dark and damp so that they do not dry out Know that frogs can live in ponds – an example of a microhabitat -	Know that light is a form of energy. Know that plants absorb energy from the Sun; that this energy is consumed by herbivorous animals; and that	NA	NA

		plants and other animals, using the idea of a simple food chain, and identify and name different sources of food Using their observations and ideas to suggest answers to questions	grow the same every day?			Know that Joshua tree has adapted to its environment (thick bark)	as they water in which to lay their eggs (frogspawn)	carnivorous animals eat other animals.		
Living Things and Life Cycles (Biology) Key question: Do all animals start off small? Enquiry: Problem-solving	**Summer 2**	Notice that animals, including humans, have offspring which grow into adults. Gather and record data to help in answering questions. Identifying and classifying	Know that plants and animals produce offspring that grow into adults.	Know that the arrows on a food chain show the direction that the energy travels.	Know what animals need to survive in a microhabitat	Know what animals need to survive in a microhabitat TAPS Assessment: Woodlice habitats Gather and record data to help in answering questions. STEM job: a zoologists	Know what animals need to survive in a microhabitat by using materials to build a microhabitat	TAPS Assessment: Nature Spotters Identifying and classifying STEM job: conservation officers	Assessment	NA

Use of Everyday materials (Chemistry) Living Things and habitats (Biology) Animals Including Humans (Biology) Plants (Biology) Scientist/STEM jobs
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