Science Assessment Statements

Year: Reception – Use lesson objectives to inform EYFS profile points

Topic	By the end of the topic, children at the Expected standard should:	At Greater Depth within the Expected standard they should (NB – No Exceeding in ELG):
All About Me My Body My Senses The Great Outdoors – Autumn **Winter Wonderland** Nocturnal Animals Arctic and Antarctic Animals **Space** Planets in our solar system The Great Outdoors – Winter **Globe-trotters** Rainforests Endangered Animals The Great Outdoors – Spring **All things Great and Small** Life Cycles – Insects and Plants Life Cycles – Mammals and Reptiles Climate Change Recycling and materials **Sunshine and Seasides** On the sea – Boats The Great Outdoors – Summer	**ELG: The Natural World** **Children at the expected level of development will:** • Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	• Make links and connections between different concepts. • Work more independently. • Use technical vocabulary. • Provide more detailed explanations. • Asks further questions e.g. how do we know the earth is not flat? What is the moon made of?

Working Scientifically:

Ask simple questions and recognise that they can be answered in different ways Observe closely, using simple equipment Perform simple tests

Identify and classify Using their observations and ideas to suggest answers to questions. Gather and record data to help in answering questions.

Working Scientifically:

Science Assessment Statements Year 1

☐ Ask simple questions and recognise that they can be answered in different ways ☐ Observe closely, using simple equipment ☐ Perform simple tests
☐ Identify and classify ☐ Using their observations and ideas to suggest answers to questions. ☐ Gather and record data to help in

Topic	By the end of the topic, children at the Expected standard should:	At Greater Depth within the Expected standard children may:
Animals including Humans All about me	• Identify, name, draw and label the basic parts of the human body. • Name the 5 senses. • Identify which part of the body is associated with each sense.	• Make links and connections between different concepts. • Work more independently. • Lead group work. • Use technical vocabulary. • Provide more detailed explanations. • Asks further questions e.g. How do we know when winter starts? How can we tell if a material is waterproof?
Seasonal Change	• Name the 4 seasons in order and state which season each month belongs to. 4 seasons = one year. • Describe the weather associated with each season. • Describe changes regarding both flora and fauna related to seasons e.g. hibernation, deciduous trees shedding their leaves. • Describe how day length varies in each season and that the number of daylight hours is most in the summer and least in the winter.	
Exploring Everyday Materials 1 and 2	• 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 e.g. hard, soft, opaque, transparent, stretchy, stiff. • Identify objects that are natural and manmade. • Compare and group together a variety of everyday materials on the basis of their simple physical properties	
Animals including Humans All about Animals	• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • 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 (fish, amphibians, reptiles, birds and mammals including pets.	
Plants	• Identify and name a variety of common and wild garden plants e.g. bluebell, daffodil, daisy including deciduous and evergreen trees (conifer, fir, holly, oak, sycamore, beech) • Identify and describe the basic structure of a variety of common flowering plants.) root, stem, petal, leaf), including trees (trunk, branch, root, leaf).	

Working Scientifically:

Science Assessment Statements Year 2

☐ Ask simple questions and recognise that they can be answered in different ways ☐ Observe closely, using simple equipment ☐ Perform simple tests

☐ Identify and classify ☐ Using their observations and ideas to suggest answers to questions. ☐ Gather and record data to help in

Topic	By the end of the topic, children at the Expected standard should:	At Greater Depth within the Expected standard children may:
Uses of Everyday Materials	• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	• Make links and connections between different concepts. • Work more independently. • Lead group work. • Use technical vocabulary. • Provide more detailed explanations. • Asks further questions e.g. How long can we survive without food?
Animals including Humans – Health and Survival	• 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.	
Animals including Humans – Lifecycles	• Notice that animals, including humans, have offspring which grow into adults. • Identify a variety of animals using terms 'offspring' and 'adult/parent'. • Name and sequence the stages in human development – baby, child, teenager, adult, old age. • Describe what can be expected at each stage of development.	
Living things and their Habitats Living things and their Habitats – Habitats around the World	• Explore and compare the differences between things that are living, dead, and things 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 microhabitats, ocean, arctic, rainforest. • 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.	
Plants	• Observe and describe how seeds and bulbs develop into mature plants • Describe how plants need water, light and a suitable temperature to grow and stay healthy. • Describe the life-cycle of a plant inc. germination and reproduction.	

Working Scientifically:

Science Assessment Statements Year 3

- [ ] Ask relevant questions and use different types of scientific enquiries to answer them.
- [ ] Set up simple practical enquiries, comparative and fair tests.
- [ ] Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
- [ ] Gather, record, classify and present data in a variety of ways to help in answering questions.
- [ ] Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.
- [ ] Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- [ ] Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- [ ] Identify differences, similarities or changes related to simple scientific ideas and processes.
- [ ] Use straightforward scientific evidence to answer questions or to support their findings.

Topic	By the end of the topic, children at the Expected standard should:	At Greater Depth within the Expected standard children may:
Light	• Recognise that you need light in order to see things and that dark is the absence of light. • Notice that light is reflected from surfaces and name surfaces/objects that can reflect light. • Recognise that light from the sun can be dangerous and that there are ways to protect the eyes. • Recognise that shadows are formed when the light from a light source is blocked by an opaque object. • Identify patterns in the way that the size of shadows change.	• Make links and connections between different concepts. • Work more independently. • Lead group work. • Use technical vocabulary. • Provide more detailed explanations. • Asks further questions e.g. Why do vehicles move slowly on sand, but fast on tarmac?
Animals including humans – Skeletal system	• Identify that animals, including humans, need the right types and amount of nutrition. • Identify the five main food groups; protein, carbohydrate, vitamins, minerals, fatty acids. • Humans cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement. • Describe different types of skeleton: vertebrate, invertebrate, endoskeleton exoskeleton. • Name and identify bones in the skeleton e.g. humerus, ulna, radius, tibia, fibular.	
Forces and Magnets	• Describe how things move on different surfaces. • Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance. • Describe how magnets attract or repel each other and attract some materials and not others e.g. iron, steel, copper. • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. • Describe magnets as having 2 poles. • Describe whether 2 magnets will attract or repel each other, depending on which poles are facing.	
Rocks	• Name different types of rock i.e. igneous, sedimentary, metamorphic. • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • Describe in simple terms how fossils are formed when things that have lived are trapped within rock. • Recognise that soils are made from rocks and organic matter.	
Plants	• Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers, chlorophyll, xylem. . • Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. • Explain how water is transported within plants. • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal, naming relevant parts of the plant e.g. anther, stigma, style..	

Working Scientifically:

Science Assessment Statements Year 4

- ☐ Ask relevant questions and use different types of scientific enquiries to answer them.
- ☐ Set up simple practical enquiries, comparative and fair tests.
- ☐ Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
- ☐ Gather, record, classify and present data in a variety of ways to help in answering questions.
- ☐ Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.
- ☐ Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- ☐ Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- ☐ Identify differences, similarities or changes related to simple scientific ideas and processes.
- ☐ Use straightforward scientific evidence to answer questions or to support their findings

Topic	By the end of the topic, children at the Expected standard should:	At Greater Depth within the Expected standard children may:
Animal including Humans – Digestive system	• Describe the simple functions of the basic parts of the digestive system in humans Inc. oesophagus, stomach, small intestine and large intestine. • Identify the different types of teeth in humans and their simple functions (incisor, canine, molar, premolar). • Construct and interpret a variety of food chains, identifying producers, consumers, predators and prey.	• Make links and connections between different concepts. • Work more independently. • Lead group work. • Use technical vocabulary. • Provide more detailed explanations. • Asks further questions e.g. Is the ear the part we can see? Or are there parts we can't see?
Electricity	• Identify common appliances that run on electricity (mains/battery). • 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 a complete loop with a battery. • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • Recognise some common conductors and insulators, and associate metals with being good conductors e.g. copper, rubber.	
States of Matter	• Compare and group materials together, according to whether they are solids, liquids or gases. • Describe what happens to materials when they change state (when they are heated or cooled), and measure or research the temperature at which this happens in degrees Celsius (°C). • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	
Sound	• Identify how sounds are made, associating some of them with something vibrating. • Recognise that vibrations from sounds travel through a medium to the ear. • Find patterns between the 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. • Recognise that sounds get fainter as the distance from the sound source increases. • Sound is measured in decibels.	
Living Things and their Habitats	• Recognise that living things can be grouped in a variety of ways inc. vertebrate/invertebrate, flowering/non-flowering. • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.	
Living Things and their Habitats – Conservation	• Name ways in which environments can change e.g. deforestation, pollution, drought, sewage. • Recognise that these environmental changes can pose dangers to living things.	

Working Scientifically:

Science Assessment Statements Year 5

- ☐ Plan different types of scientific enquiries to answer questions. This should include recognising and controlling variables, where necessary.
- ☐ Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- ☐ Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- ☐ Use test results to make predictions to set up further comparative and fair tests.
- ☐ Report and present findings from enquiries.
- ☐ This will include conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- ☐ Identify scientific evidence that has been used to support or refute ideas or arguments.

Topic	By the end of the topic, children at the Expected standard should:	At Greater Depth within the Expected standard they should:
Earth and Space	• Describes the movement of the Earth and other planets relative to the sun in the solar system, naming the planets in our solar system both terrestrial and gas. • Describe the movement of the moon relative to the Earth (inc. waxing, waning). • Describe the sun, Earth and moon as approximately spherical bodies. • Use the idea of the Earth's rotation to explain day night and the apparent movement of the sun across the sky.	• Make links and connections between different concepts. • Work more independently. • Lead group work. • Use technical vocabulary. • Provide more detailed explanations. • Asks further questions e.g. Does everything fall to Earth at the same rate?
Properties of Materials	• Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. • Identify thermal conductors and thermal insulators. • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. • Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.	
Forces	• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Identify the effects of air resistance on a parachute. • Describe factors which affect an object's ability to resist water. • Describe the effects of friction on different surfaces. • Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.	
Changes of Materials	• Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Describe how to use evaporation to recover the solute from a solution • Demonstrate that dissolving, mixing and changes of state are reversible changes • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	
Living things and their Habitats	• Describe the key stages in the life cycles of a mammal. • Describe the similarities/ differences in the life cycles of an amphibian and an insect. • Describe the differences/similarities in the life cycles of a reptile and a bird. • Describe the life process of reproduction in some plants inc. sexual and asexual reproduction. • Discuss the life and work of Jane Goodall and David Attenborough.	
Animals including Humans – Human Development	• Describe the key stages of a mammal's lifecycle. • Describe the changes as humans develop to old age. • Describe the gestation periods of mammals. • Describe foetal development. • Describe the changes experienced during puberty Inc. naming relevant parts of the body e.g. penis, vulva, vagina, uterus.; Identify changes that occur during puberty in male/ female or both. • Describe the changes humans may experience during adulthood and old age.	

Science Assessment Statements – Year 6

Topic	By the end of the topic, children at the Expected standard should:	At Greater Depth within the Expected standard they should:
Animals including Humans – Circulatory System	• Identify and name the main parts of the heart and its role in the circulatory system Inc. atrium, ventricle, vessel, valves. • Identify and compare blood vessels (artery, vein, capillary) and blood (red and white blood cells, platelets) and describe their function in the circulatory system. • Describe the ways in which nutrients and water are transported within animals, including humans (osmosis and diffusion). • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function in particular their heart rate.	• Make links and connections between different concepts. • Work more independently. • Lead group work. • Use technical vocabulary. • Provide more detailed explanations. • Asks further questions e.g. What is happening inside the wires to conduct electricity?
Evolution and Inheritance	• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • Identify how animals have adapted to suit their environment in different ways. • Identify how animals have adapted to suit their environment in different ways. • Describe the theory of evolution (Darwin) and use it to explain human evolution.	
Electricity	• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • 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. • Use recognised symbols when representing a simple circuit in a diagram. • Apply knowledge to identify problems in a circuit including the main components, conductors/insulators.	
Light	• 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.	
Living things and their Habitats	• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, (including micro-organisms such as bacteria, fungi, viruses, protozoa)., plants and animals. • Give reasons for classifying plants and animals based on specific characteristics. • Classify living things using the Linnaean system.	
Looking after our Environment	• Describe climate change (global warming). • Explore ways to reduce how much rubbish is sent to landfill. • Describe ways to reduce energy consumption (renewable/non- renewable, greenhouse gases, net zero) • Explore what happens when fuels are burnt (industrial revolution, fossil fuel s coal) • Discuss scientific evidence that has been used to support or refute ideas or arguments related to COP26.	

Working Scientifically:

- ☐ Plan different types of scientific enquiries to answer questions. This should include recognising and controlling variables, where necessary.
- ☐ Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- ☐ Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- ☐ Use test results to make predictions to set up further comparative and fair tests.
- ☐ Report and present findings from enquiries.
- ☐ This will include conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- ☐ Identify scientific evidence that has been used to support or refute ideas or arguments.