Threshold concept	End of phase expectation yr. 2	End of phase expectation yr. 4	End of phase expectation yr. 6
Working scientifically (*this concept should be evidenced across all science lessons)*	Can ask simple questions and recognise that they can be answered in different ways Can observe closely, using simple equipment. Can perform simple tests Can identify and classify. Can use observations and ideas to answer questions and use appropriate scientific language. Can gather and record data to help in answering questions.	Can ask relevant questions and use different types of scientific enquiry to answer them. Can make systematic and careful observations. Can set up simple practical enquiries and comparative and fair tests. Can make accurate measurements using standard units using a range of equipment including thermometers and data loggers. Can gather, record and classify and present data in a variety of ways including drawings, labelled diagrams, keys, bar charts and tables. Can use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests including evaluating and reliability. Can use models and straight forward scientific evidence to answer questions or to support findings.	Can plan different types of scientific enquiry to answer questions, including recognising and controlling variables where necessary. Can use test results to make predications to design comparative and fair tests. Can use appropriate techniques, apparatus and materials during field work and laboratory work. Can take measurements using a range of scientific equipment with increasing accuracy and precision, taking repeat readings where appropriate. Can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs. Can report and present findings from enquiries, including conclusions and causal relationships using appropriate scientific language. Can identify and evaluate scientific evidence (their own and others) that has been used to support or refute ideas or arguments.

Understand plants	Can identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen. Can identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers. Can describe how seeds and bulbs grow into mature plants. Can describe how plants need water, light and a suitable temperature to grow and stay healthy.	Can identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers. Can explain 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. Can investigate the way in which water is transported within plants. Can explain the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	
Understand animals and humans.	Can identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. Can identify and name a variety of common animals that are carnivores, herbivores and omnivores. Can describe and compare the structure of a variety of common animals (birds, fish,	Can identify that animals, including humans, need the right types and amounts of nutrition, that they cannot make their own food and they get nutrition from what they eat. Can construct and interpret a variety of food chains, identifying producers, predators and prey. Can identify that humans and some animals have skeletons and muscles for support, protection and movement.	Can describe the changes as humans develop to old age. Can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Can recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions. Can describe the ways in which nutrients and water are transported within animals, including humans.

	amphibians, reptiles, mammals and invertebrates, including pets). Can identify name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Can explain that animals, including humans, have offspring which grow into adults. Can investigate and describe the basic needs of animals, including humans, for survival (water, food and air). Can describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.	Can describe the simple functions of the basic parts of the digestive system in humans. Can identify the different types of teeth in humans and their simple functions.	
Investigate living things	Can explain the differences between things that are living, that are dead and that have never been alive. Can 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	Can recognise that living things can be grouped in a variety of ways. Can explore and use classification keys. Can recognise that environments can change and that this can sometimes pose dangers to specific habitats.	Can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Can describe the life process of reproduction in some plants and animals. Can describe how living things are classified into broad groups according to common observable characteristics. Can give reasons for classifying plants and animals based on specific characteristics.

	and plants and how they depend on each other. Can identify and name a variety of plants and animals in their habitats, including micro-habitats. Can 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.		
Understand evolution and inheritance			Can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Investigate materials	Can distinguish between an object and the material from which it is made. Can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.	Can compare and group together different kinds of rocks on the basis of their simple, physical properties. Can relate the simple physical properties of some rocks to their formation (igneous or sedimentary).	Can compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets. Can understand how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.

	Can describe the simple physical properties of a variety of everyday materials. Can compare and group together a variety of everyday materials on the basis of their simple physical properties. Can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard for particular uses.	Can describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock. Can recognise that soils are made from rocks and organic matter. Can compare and group materials together, according to whether they are solids, liquids or gases. Can observe that some materials change state when they are heated or cooled and measure the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics. Can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Can demonstrate that dissolving, mixing and changes of state are reversible changes. Can 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.
Understand movement, forces and magnets		Can compare how things move on different surfaces. Can notice that some forces need contact between two objects, but magnetic forces can act at a distance. Can observe how magnets attract or repel each other and attract some materials and not others.	Can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Can identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces. Can understand that some mechanisms including levers, pulleys and gears, allow a smaller force to have a greater effect.

		Can 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. Can predict whether two magnets will attract or repel each other, depending on which poles are facing.	
Understand light and seeing		Can recognise that they need light in order to see things and that dark is the absence of light. Can recognise that shadows are formed when the light from a light source is blocked by a solid object. Can find patterns in the way that the size of shadows changes.	Can explain that light appears to travel in straight lines and that objects are seen because they give out or reflect light into the eyes. Can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes. Can 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.
Investigate sound and hearing		Can identify how sounds are made, associating some of them with something vibrating. Can recognise that vibrations from sounds travel through a medium to the ear.	Can find patterns between the pitch of a sound and features of the object that produced it. Can find patterns between the volume of a sound and the strength of the vibrations that produced it. Can recognise that sounds get fainter as the distance from the sound source increases.
Understand electrical circuits		Can construct a simple series electrical circuit, identifying and naming its basic parts,	Can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.

		including cells, wires, bulbs, switches and buzzers. Can 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. Can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Can recognise some common conductors and insulators, and associate metals with being good conductors.	Can 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. Can u se recognised symbols when representing a simple circuit in a diagram.
Understand the Earth's movement in space	Can observe changes across the four seasons. Can observe and describe weather associated with the seasons and how day length varies.		Can describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Can describe the movement of the Moon relative to the Earth. Can describe the Sun, Earth and Moon as approximately spherical bodies. Can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.