



Science End Of Year Milestones 2017-2018



KS1			KS2				
Skills	Year 1	Year 2	Skills	Year 3	Year 4	Year 5	Year 6
Identifying and classifying	To identify some materials. To ask simple questions with support. To compare some materials. To perform a simple test with support. To suggest answers to a question based on what I have observed with support.	To know that questions can be answered in different ways. To identify a wider selection of materials. To ask simple questions. To compare a wider selection of materials. To perform a simple test. To suggest answers to a question based on what I have observed.	Planning	To ask relevant questions with support. To conduct a scientific enquiry to answer my own questions with support. To set up a simple scientific enquiry.	To ask relevant questions. To conduct a scientific enquiry to answer my own questions. To set up a comparative enquiry. To set up a fair test.	To plan different types of scientific enquiries to answer different questions. To recognise and control variables with support.	To plan different types of scientific enquiries to answer different questions that I have formulated independently. To recognise and control variables.
Observing	To observe closely using simple equipment. To suggest answers to questions based on what I have observed. To identify and compare some plants and animals. I can ask simple questions with support.	I know that questions can be answered in different ways. To observe closely and carefully using simple equipment. To suggest answers to questions based on what I have observed and learned. To identify and compare a wider selection of plants and animals. I can ask simple questions.	Data	To make careful observations. To take accurate measurements using standard units of measure. To use data loggers with support. To gather and record data to answer a question. To report findings using simple scientific language. To report findings using drawings, labelled diagrams and tables. To report findings from an enquiry orally and in writing.	To make systematic observations. To use thermometers. To use data loggers. To gather, record and classify data to answer a question. To report data to answer a question. To report findings using simple scientific language, both orally and in writing. To report findings using keys and bar charts.	To take accurate and precise measurements using scientific equipment with support. To repeat measurements where appropriate. To record data and results using diagrams with labels, tables and bar and line graphs.	To take accurate and precise measurements using scientific equipment. To know when to repeat measurements where appropriate. To record data and results using classification keys, bar graphs, line graphs and scatter graphs.
Creating and using data	To gather and record data to answer a question, with support. To ask simple questions with less support. To suggest answers to questions based on what I have observed.	To know questions can be answered in different ways. To gather and record data to answer a question. To ask more refined questions. To suggest answers to questions based on what I have observed and learned.	Evaluation	To use results to draw a simple conclusion. To use results to make a prediction for further values. To identify difference, similarities, and changes related to simple scientific ideas. To start to use scientific evidence to answer a question and support my findings.	To use results to suggest improvements to a method and develop further questions. To identify difference, similarities, and changes related to simple scientific ideas. To use scientific evidence to answer a question and support my findings.	To use test results to make further predictions, which will feed into further comparative and fair tests, with support. To report findings from an enquiry both orally and in writing. To make a conclusion based on a test with support. To explain results from and identify a degree of trust within an enquiry.	To use test results to make further predictions, which will feed into further comparative and fair tests. To independently report findings from an enquiry both orally and in writing. To make a conclusion based on a test. To identify causal relationships from an enquiry. To explain results from and identify a degree of trust within an enquiry. To identify scientific evidence that can be used to support or refute an idea or argument.
Knowledge	Year 1	Year 2	Knowledge	Year 3	Year 4	Year 5	Year 6
Changing Materials	<p>To distinguish between an object and the material from which it is made. To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. To describe the simple physical properties of a variety of everyday materials. To compare and group together a variety of everyday materials on the basis of their simple physical properties. To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p>Key scientists: Harold "Doc" Egerton - bouncy ball experiment. South American Natives who covered clothes in latex in the 13th century. Archimedes.</p> <p>Key vocabulary: material, object, property, suitable, changes</p>		Electricity	<p>To identify common appliances that run on electricity. To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. To 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. To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. To recognise some common conductors and insulators, and associate metals with being good conductors. 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 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 use recognised symbols when representing a simple circuit in a diagram.</p> <p>Key scientists: Michael Faraday, Thomas Edison, Nikola Tesla Key vocabulary: electricity, circuit, component, cell, battery, switch, series, parallel, conductor, insulator, voltage, symbols.</p>			

<p>Our Living Earth</p>	<p>To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. To identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p> <p>To notice that animals, including humans, have offspring which grow into adults.</p> <p>To find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>Key scientists: Mary Anning, Dong Zhiming, Charles Darwin</p> <p>Key vocabulary: fish, amphibian, reptile, bird, mammal, carnivore, herbivore, omnivore, human, offspring, survival, exercise, food, hygiene.</p>	<p>Geology, rocks and mixtures</p>	<p>To compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>To recognise that soils are made from rocks and organic matter. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).</p> <p>To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>To demonstrate that dissolving, mixing and changes of state are reversible changes. To 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.</p> <p>Key scientists: Janet Vida Watson, Alfred Wegner</p> <p>Key vocabulary: solids, liquids, gases, organic matter, soil, change state, degrees Celsius, evaporate, condense, water cycle, separate, materials, dissolving, mixing, reversible.</p>
<p>Habitats and Seasonal Changes</p>	<p>To observe changes across the four seasons.</p> <p>To observe and describe weather associated with the seasons and how day length varies. To 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.</p> <p>To identify and name a variety of plants and animals in their habitats, including microhabitats.</p> <p>To 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.</p> <p>Key scientists: John Dalton, Daniel Fahrenheit</p> <p>Key vocabulary: seasons, winter, spring, summer, autumn, weather, habitat, plant, animal, food chain</p>	<p>Evolution and Inheritance</p>	<p>To explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p>To construct and interpret a variety of food chains, identifying producers, predators and prey. To recognise that living things can be grouped in a variety of ways.</p> <p>To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>To recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.</p> <p>To 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.</p> <p>To give reasons for classifying plants and animals based on specific characteristics. 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.</p> <p>To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>Key scientists: Charles Darwin, Jane Goodall</p> <p>Key vocabulary: flower, pollination, dispersal, food chain, producer, predator, prey, classification key, environment, life cycle, characteristics, micro-organisms, fossils, offspring, adapt, evolve.</p>