| **Term** | **Science Topic** | **Knowledge and understanding** | **Scientific Enquiry Skills** | **What I will know and remember**  |
| --- | --- | --- | --- | --- |
| 1 | Keeping healthy | recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessaryTaking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriateRecording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphsUsing test results to make predictions to set up further comparative and fair testsReporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentationsIdentifying scientific evidence that has been used to support or refute ideas or arguments | [Lesson 1 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/keeping-healthy/lessons/the-impact-of-a-balanced-diet?sid-d11929=evFuZRuhKv&sm=0&src=4) I can research and observe the impact of diet on the human body. [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/keeping-healthy/lessons/healthy-heart-rate?sid-cad974=7FptnyhFMn&sm=0&src=4) I can observe the impact of exercise on the human body by finding patterns. [Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/keeping-healthy/lessons/heart-recovery-time-after-exercise?sid-68b428=nPr8xJhCC4&sm=0&src=4#slide-deck) I can observe the recovery time of my heart after exercise. [Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/keeping-healthy/lessons/healthy-hearts?sid-4afd67=mpiACxjYxy&sm=0&src=4#worksheet) I can use my research and observations to make recommendations. [Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/keeping-healthy/lessons/legal-and-illegal-drugs?sid-e4bb6b=Zvhduo9yzY&sm=0&src=4) I can research and observe how legal and illegal drugs can affect the body. [Lesson 6 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/keeping-healthy/lessons/the-impact-of-smoking?sid-4d8671=DvsazPpCbd&sm=0&src=4) I can research and observe the impact of smoking, including vaping, on the human body. [Lesson 7 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/keeping-healthy/lessons/the-impact-of-alcohol?sid-a20564=reVHWFWCcz&sm=0&src=4) I can research and observe the impact of alcohol on the human body. [Lesson 8 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/keeping-healthy/lessons/monitoring-and-improving-lifestyle-choices?sid-9b922e=8QhHaKy2vt&sm=0&src=4#slide-deck) I can observe lifestyle choices over a period of time.  |
| **Vocabulary**diet, impact, nutrients, beneficial, heart rate, oxygen, artery, exercise, circulation, recovery time, pulse, muscle, heart health, aerobic, fitness, illegal, addictive, prescribed, nicotine, drug, lungs, alcohol |
| 2 | Human circulatory system | identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blooddescribe the ways in which nutrients and water are transported within animals, including humans | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessaryTaking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriateRecording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphsUsing test results to make predictions to set up further comparative and fair testsReporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentationsIdentifying scientific evidence that has been used to support or refute ideas or arguments | [Lesson 1 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/the-human-circulatory-system/lessons/function-of-the-heart?sid-b5e724=igm3LWWhwe&sm=0&src=4) I can observe the human heart and research what it does. [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/the-human-circulatory-system/lessons/function-of-blood?sid-b7f112=aLkfXr-HxB&sm=0&src=4) I can research what blood is and what it does. [Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/the-human-circulatory-system/lessons/function-of-blood-vessels?sid-b0d3b7=aePSAge9nZ&sm=0&src=4) I can research what blood vessels are and what they do. [Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/the-human-circulatory-system/lessons/how-nutrients-and-water-are-transported-within-humans?sid-5d92a2=Sm3kC4zFTj&sm=0&src=4) I can research how water and nutrients from food travel through the body. [Lesson 5a](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/the-human-circulatory-system/lessons/the-circulatory-system-in-humans-plan?sid-381fa8=aSvT87GKBE&sm=0&src=4) / [Lesson 5b](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/the-human-circulatory-system/lessons/circulatory-system-do-and-review?sid-996631=Cmyn-gYRmR&sm=0&src=4) - I can use my research about the circulatory system to present my findings. [Lesson 6](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/the-human-circulatory-system/lessons/the-use-of-animal-hearts-in-humans-non-statutory?sid-3cce57=jaxVrEteH7&sm=0&src=4) - I can use research to consider arguments for and against the use of animal hearts to repair or replace human hearts. |
| **Vocabulary**organ, function, heart, blood, oxygen, nutrients, carbon dioxide, blood vessels, arteries, veins, oxygenated, deoxygenated, digest, intestine, bloodstream, circulatory system, transplant |
| 3 | Why we group and classify living things | 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 animalsgive reasons for classifying plants and animals based on specific characteristics | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessaryTaking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriateRecording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphsUsing test results to make predictions to set up further comparative and fair testsReporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentationsIdentifying scientific evidence that has been used to support or refute ideas or arguments | [Lesson 1](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/why-we-group-and-classify-living-things/lessons/comparing-characteristics-of-living-things?sid-1d641f=8VXA48OS-5&sm=0&src=4#slide-deck) - I can compare the characteristics of living things and describe their similarities and differences.[Lesson 2](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/why-we-group-and-classify-living-things/lessons/how-and-why-we-group-animals?sid-7bc913=20opMw7dQE&sm=0&src=4#worksheet) - I can group animals using observable characteristics.[Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/why-we-group-and-classify-living-things/lessons/how-and-why-we-group-plants?sid-ee9030=uBk0IxwMRt&sm=0&src=4) I can group plants using observable characteristics.[Lesson 4](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/why-we-group-and-classify-living-things/lessons/micro-organisms-are-living-things?sid-d13eed=QxAEq9lE44&sm=0&src=4#slide-deck) - I can research what micro-organisms are, and know that they are living things.[Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/why-we-group-and-classify-living-things/lessons/grouping-micro-organisms?sid-394c67=7WV6CA1FZ9&sm=0&src=4) I can group micro-organisms based on similarities and differences.[Lesson 6a](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/why-we-group-and-classify-living-things/lessons/micro-organisms-living-on-food-plan-and-do-non-statutory?sid-c8e70f=ZPPauzYD03&sm=0&src=4) / [Lesson 6b](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/why-we-group-and-classify-living-things/lessons/micro-organisms-living-on-food-review-non-statutory?sid-724e6c=W5TwYusmf8&sm=0&src=4) - I can observe what happens to food when it is left to decompose. [Lesson 7](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/why-we-group-and-classify-living-things/lessons/carl-linnaeus-and-classification?sid-5f383d=u-pegaC6ec&sm=0&src=4#slide-deck) - I can research the work of Carl Linnaeus and his contribution to how we classify living things. |
| **Vocabulary**observable, characteristic, vertebrate, invertebrate, flowering, non-flowering, seeds, spores, living thing, organism, micro-organism, microbe, microscope, bacteria, virus, fungi, organism, taxonomy, mould, decompose |
| 4 | 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 agorecognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parentsidentify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessaryTaking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriateRecording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphsUsing test results to make predictions to set up further comparative and fair testsReporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentationsIdentifying scientific evidence that has been used to support or refute ideas or arguments | [Lesson 1a](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/evolution-and-inheritance/lessons/what-fossils-can-tell-us-about-the-past?sid-2f8126=MYUblP6Ynl&sm=0&src=4) / [Lesson 1b](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/evolution-and-inheritance/lessons/how-living-things-have-changed-over-time?sid-de9170=KBhht4c7nv&sm=0&src=4) - I can research what fossils can tell us about the past and observe how living things have changed over time. [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/evolution-and-inheritance/lessons/offspring-similar-but-not-identical?sid-363fba=1EF-m6z_Ph&sm=0&src=4#quiz) I can observe how offspring of different animals are similar but not identical to their parents.[Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/evolution-and-inheritance/lessons/inherited-characteristics?sid-30b088=_Co81rORPy&sm=0&src=4) I can identify inherited and environmental characteristics of different offspring.[Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/evolution-and-inheritance/lessons/animal-adaptations?sid-741ad8=A4_A9efL33&sm=0&src=4) I can research some adaptations in a range of animals.[Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/evolution-and-inheritance/lessons/charles-darwin-and-finches?sid-af7576=EQHAE0eB1P&sm=0&src=4#slide-deck) I can fairly test different shaped beaks to show how they are adapted to suit different food sources.[Lesson 6 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/evolution-and-inheritance/lessons/plant-adaptations?sid-4408eb=wSk9lQfjPz&sm=0&src=4) I can research some adaptations in a range of plants. |
| **Vocabulary**evidence, fossil record, fossil, theory, palaeontologist, sedimentary rock, geologist, offspring, similar, vary, identical, variation, generation, characteristic, inheritance, inherited characteristic, environmental characteristic, habitat, adaptation, survive, environment, predatory |
| 5 | Light and how it travels | recognise that light appears to travel in straight linesuse the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyeexplain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyesuse the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessaryTaking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriateRecording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphsUsing test results to make predictions to set up further comparative and fair testsReporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentationsIdentifying scientific evidence that has been used to support or refute ideas or arguments | [Lesson 1 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/light-and-how-it-travels/lessons/how-light-travels?sid-d16c0b=HggU3SyyHU&sm=0&src=4#slide-deck) I can observe that light travels in straight lines. [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/light-and-how-it-travels/lessons/light-enters-our-eyes?sid-4968bf=gn9E7pOjB0&sm=0&src=4#worksheet) I can observe that we see things when light travels into our eyes. [Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/light-and-how-it-travels/lessons/reflected-light?sid-e70957=yp7nup_zzd&sm=0&src=4#lesson-details) I can observe that we see things when light is reflected from an object into the eye.[Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/light-and-how-it-travels/lessons/changing-the-direction-of-light?sid-6297c7=fqc9nVAwK1&sm=0&src=4#worksheet) I can observe how mirrors are reflective materials that are used to change the direction in which light travels.Lesson 5 - I can compare how changing the angle of a mirror affects the angle of reflected light.[Ogden Trust : Investigation D : Reflections](https://drive.google.com/file/d/1w8vTcihq1ukzGfn1OqtIv4evYTWnysHO/view?usp=drive_link)[Lesson 6 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/light-and-how-it-travels/lessons/how-shadows-form?sid-20a22d=9gy1ilJEF_&sm=0&src=4#slide-deck) I can observe the size, colour and features of a shadow, and compare shadows to reflections of objects. |
| **Vocabulary**light, light source, enter, pupil, reflect, surface, light ray, direction, angle, periscope, protractor, shadow, opaque, features |
| **6** | Changing circuits | associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuitcompare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switchesuse recognised symbols when representing a simple circuit in a diagram | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessaryTaking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriateRecording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphsUsing test results to make predictions to set up further comparative and fair testsReporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentationsIdentifying scientific evidence that has been used to support or refute ideas or arguments | [Lesson 1 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/changing-circuits/lessons/components-and-simple-circuits?sid-b4bd59=sLbmfIpHoA&sm=0&src=4#lesson-details) I can research what makes an effective circuit, build and test a range of simple circuits using common components.[Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/changing-circuits/lessons/circuit-symbols-and-diagrams?sid-b67d42=pV8mX0UIpV&sm=0&src=4#lesson-details) I can research circuit symbols and represent components in a simple circuit diagram.Lesson 3 - I can find patterns in how voltage affects the brightness of a lamp in a circuit.[Ogden Trust: Enquiry C: Bright Lights](https://drive.google.com/file/d/1uH34-jlIVDg4bgtM6ZGjIhsZb1lbY_Nb/view?usp=drive_link)Lesson 4 - I can find patterns when exploring how to change the volume of a buzzer. [Ogden Trust: Enquiry D: Blaring Buzzers!](https://drive.google.com/file/d/1uH34-jlIVDg4bgtM6ZGjIhsZb1lbY_Nb/view?usp=drive_link)[Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/changing-circuits/lessons/the-position-of-switches-open-and-closed?sid-332b62=IBKZUW8I0G&sm=0&src=4) I can research how a switch is used in a simple circuit. |
| **Vocabulary**circuit, component, cell, battery, terminal, circuit symbol, circuit diagram, voltage, brightness, switch, control, appliance, complete, buzzer, decibel |