| **Term** | **Science Topic** | **Knowledge and understanding** | **Scientific Enquiry Skills** | **What I will know and remember** |
| --- | --- | --- | --- | --- |
| 1 | Introduction to states of matter and changing states | compare and group materials together, according to whether they are solids, liquids or gases  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)  identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature | Asking relevant questions and using different types of scientific enquiries to answer them  Setting up simple practical enquiries, comparative and fair tests  Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers  Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions  Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables  Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions  Identifying differences, similarities or changes related to simple scientific ideas and processes  Using straightforward scientific evidence to answer questions or to support their findings. | [Lesson 1 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-states-of-matter-and-changing-states/lessons/properties-of-solids-liquids-and-gases?sid-f9248b=n1LuYHRfW2&sm=0&src=4#worksheet) I can observe and describe simple properties of solids, liquids and gases.    [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-states-of-matter-and-changing-states/lessons/comparing-and-grouping-solids-liquids-and-gases?sid-aaae08=RcWgKjeXoF&sm=0&src=4) I can compare and group materials according to whether they are in solid, liquid or gas state.    [Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-states-of-matter-and-changing-states/lessons/changing-state-solid-to-liquid?sid-0773f2=cZxDtky3Ev&sm=0&src=4#lesson-details) I can observe that some materials change state from solid to liquid when they are heated.    [Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-states-of-matter-and-changing-states/lessons/changing-state-liquid-to-solid?sid-2773d4=P5l86j5Y4X&sm=0&src=4) I can observe that some materials change state from liquid to solid when they are cooled.    [Lesson 5 Plan](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-states-of-matter-and-changing-states/lessons/melting-temperatures-plan?sid-e8e57c=ec7Sh-tOG1&sm=0&src=4) / [Lesson 5 Do -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-states-of-matter-and-changing-states/lessons/melting-temperatures-do-and-review?sid-308d8b=fMoMUCS2yd&sm=0&src=4#slide-deck) I can fairly test the melting points of common materials.    [Lesson 6 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-states-of-matter-and-changing-states/lessons/changing-state-liquid-to-gas?sid-9895c1=c_G9WZJ3XE&sm=0&src=4) I can observe water change from the liquid state to the gas state.    [Lesson 7 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-states-of-matter-and-changing-states/lessons/evaporation-and-condensation-in-the-water-cycle?sid-af5838=V_03YT4dzI&sm=0&src=4) I can research and observe the part played by evaporation and condensation in the water cycle.    [Lesson 8 Plan](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-states-of-matter-and-changing-states/lessons/temperature-and-evaporation-plan?sid-ef81f5=WdZOCQBnp5&sm=0&src=4) / [Lesson 8 Do](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-states-of-matter-and-changing-states/lessons/temperature-and-evaporation-do-and-review?sid-a4c754=9M0bNib019&sm=0&src=4) - I can find patterns in how temperature affects the rate of evaporation. |
| **Vocabulary**  states of matter, solid, liquid, gas, properties, state, heat, melt, freeze, melting temperature, degrees celsius, water vapour, evaporation, water cycle, condensation, precipitation | | | | |
| 2 | Simple Electrical Circuits | identify common appliances that run on electricity  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 | Asking relevant questions and using different types of scientific enquiries to answer them  Setting up simple practical enquiries, comparative and fair tests  Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers  Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions  Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables  Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions  Identifying differences, similarities or changes related to simple scientific ideas and processes  Using straightforward scientific evidence to answer questions or to support their findings. | [Lesson 1 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/simple-electrical-circuits/lessons/electrical-appliances?sid-67fee2=aujnHF1vbi&sm=0&src=4) I can identify, name and group common appliances that run on electricity.  [(extra resources)](https://drive.google.com/drive/folders/1QAFGf0zCp8NvV53GPtaI4MdSD9kzuNs6?usp=drive_link)  [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/simple-electrical-circuits/lessons/components-in-a-simple-circuit?sid-10818d=qmI_aayqr_&sm=0&src=4) I can identify and name basic components in a simple electrical circuit.    [Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/simple-electrical-circuits/lessons/building-simple-circuits?sid-d66d0c=rpEMd33GNB&sm=0&src=4) I can use research to build a simple series electrical circuit.    [Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/simple-electrical-circuits/lessons/troubleshooting-problems-with-circuits?sid-75d390=RgYkD0TzTB&sm=0&src=4) I can use research to solve problems and improve simple circuits.  [*Ogden Trust Resource : Phizzi Electricity: Enquiry A - Circuit Analysts*](https://drive.google.com/file/d/1uH34-jlIVDg4bgtM6ZGjIhsZb1lbY_Nb/view?usp=drive_link)  [(resources)](https://drive.google.com/drive/folders/1jINLR9TcxXFDiTgaVNbONuqX-ur4MUI7?usp=drive_link)  [Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/simple-electrical-circuits/lessons/switches?sid-67a0ec=Ez4uKjFngy&sm=0&src=4#worksheet) I can fairly test how a switch is used to open and close a circuit.  [*Ogden Trust Resource : Phizzi Electricity: Enquiry B - Buzz off!*](https://drive.google.com/file/d/1uH34-jlIVDg4bgtM6ZGjIhsZb1lbY_Nb/view?usp=drive_link)    [Lesson 6 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/simple-electrical-circuits/lessons/electrical-conductors-and-insulators?sid-b17da3=U0KPLTQsUf&sm=0&src=4#additional-material) I can fairly test and sort materials into electrical conductors and insulators.    [Lesson 7 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/simple-electrical-circuits/lessons/electrical-conductors-testing?sid-c0b686=dHzgBDaJH9&sm=0&src=4) I can identify objects made from a range of metals and fairly test for electrical conductivity. |
| **Vocabulary**  electricity, electrical appliance, circuit, component, device, complete, incomplete, series, connectors, electrician, analyst, switch, control variable, material, conductor, insulator, minerals, metal | | | | |
| 3 | Introduction to the Human Digestive System | describe the simple functions of the basic parts of the digestive system in humans  identify the different types of teeth in humans and their simple functions | Asking relevant questions and using different types of scientific enquiries to answer them  Setting up simple practical enquiries, comparative and fair tests  Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers  Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions  Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables  Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions  Identifying differences, similarities or changes related to simple scientific ideas and processes  Using straightforward scientific evidence to answer questions or to support their findings. | [Lesson 1 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-digestive-system/lessons/types-of-teeth?sid-4fb57e=CvJdd2RHky&sm=0&src=4) I can identify, observe and name different types of teeth in humans.    [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-digestive-system/lessons/the-functions-of-teeth?sid-efeab7=_s5BAxyLqm&sm=0&src=4) I can research the simple functions of the different types of human teeth.    [Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-digestive-system/lessons/different-teeth-for-different-food?sid-6d31f1=UvUi7gqGPK&sm=0&src=4#lesson-details) I can research which teeth are used to eat different types of food.    [Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-digestive-system/lessons/the-human-digestive-system?sid-bd98ae=ecF8Yr6whZ&sm=0&src=4) I can research and describe the first part of the journey of food through the human digestive system.    [Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-digestive-system/lessons/carnivore-herbivore-and-omnivore-teeth-non-statutory?sid-5f09ae=_6csQCsb7v&sm=0&src=4) I can compare the teeth of carnivores, herbivores and omnivores.    [Lesson 6 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-digestive-system/lessons/more-about-the-journey-of-food?sid-bb85f6=7hAXe8Qy0a&sm=0&src=4#lesson-details) I can research the final part of the journey of food through the human digestive system. |
| **Vocabulary**  teeth, incisor, canine, molar,digestive system, function, omnivore, digestion, saliva, oesophagus, stomach acid, diet, carnivore, herbivore, intestine, nutrients, rectum, faeces, anus | | | | |
| 4 | Living Things and Their Environments | recognise that living things can be grouped in a variety of ways  explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment  recognise that environments can change and that this can sometimes pose dangers to living things | Asking relevant questions and using different types of scientific enquiries to answer them  Setting up simple practical enquiries, comparative and fair tests  Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers  Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions  Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables  Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions  Identifying differences, similarities or changes related to simple scientific ideas and processes  Using straightforward scientific evidence to answer questions or to support their findings. | [Lesson 1 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/living-things-and-the-environment/lessons/introducing-observable-characteristics?sid-f75a01=k7G7ufFMt7&sm=0&src=4#slide-deck) I can group objects using observable characteristics.    [Lesson 2a](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/living-things-and-the-environment/lessons/grouping-animals?sid-c24ef4=AbXKvNaLG3&sm=0&src=4) / [Lesson 2b](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/living-things-and-the-environment/lessons/grouping-plants?sid-ef3782=iyZPNyVqhh&sm=0&src=4) - I can use observable characteristics to classify plants and animals in different ways.    [Lesson 3a](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/living-things-and-the-environment/lessons/classification-keys-to-identify-animals?sid-72e382=65FIWr4Vj9&sm=0&src=4#lesson-details) / [Lesson 3b](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/living-things-and-the-environment/lessons/classification-keys-to-identify-plants?sid-4b8f7a=0wJ-0AHzaN&sm=0&src=4#lesson-details) - I can use classification keys to identify plants and animals.  [(possible introduction)](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/living-things-and-the-environment/lessons/classification-keys?sid-2207a0=lActoB7H25&sm=0&src=4)  [Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/living-things-and-the-environment/lessons/environments-and-seasonal-changes?sid-23a5a6=b6QA-kY1w7&sm=0&src=4) I can research that environments can change as the seasons change.    Lesson 5 - I can research and compare the impact of litter in the environment.  [*L4. Litter in the environment*](https://www.mcsuk.org/what-you-can-do/fun-learning/primary-learning/teaching-resources/upper-primary/marine-litter/)    [Lesson 6 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/living-things-and-the-environment/lessons/changing-environments-land-development-and-deforestation?sid-93e148=ZX4Wy7IDTe&sm=0&src=4) I can research some negative effects of human impact on the environment. |
| **Vocabulary**  common, observable characteristic, classification key, structure, zoologist, botanist, environment, seasons, migrate, hibernate, litter, marine life, pollution, microplastics, environmental issue, chemicals, impact, population, deforestation, habitat | | | | |
| 5 | More about food chains | construct and interpret a variety of food chains, identifying producers, predators and prey | Asking relevant questions and using different types of scientific enquiries to answer them  Setting up simple practical enquiries, comparative and fair tests  Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers  Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions  Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables  Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions  Identifying differences, similarities or changes related to simple scientific ideas and processes  Using straightforward scientific evidence to answer questions or to support their findings. | [Lesson 1](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/more-about-food-chains/lessons/simple-food-chains?sid-fbb90a=rJsfESXFK1&sm=0&src=4) - I can use a simple food chain to show how animals and plants depend on each other for food, using my research.    [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/more-about-food-chains/lessons/producers-in-a-food-chain?sid-349221=jso88hS_u3&sm=0&src=4) I can identify and name producers in different food chains.    [Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/more-about-food-chains/lessons/consumers-in-a-food-chain?sid-8c53a8=hX6oZuLU-D&sm=0&src=4) I can identify and name consumers in different food chains.    [Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/more-about-food-chains/lessons/predators-and-prey-in-a-food-chain?sid-c8f65f=v132C9yLKi&sm=0&src=4) I can identify and name predators and prey in different food chains.    [Lesson 5a](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/more-about-food-chains/lessons/creating-food-chains?sid-35fffd=Yy8YwVbDeP&sm=0&src=4) / [Lesson 5b](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/more-about-food-chains/lessons/comparing-different-food-chains?sid-77edab=85eXi_ajYJ&sm=0&src=4) - I can create my own food chains and use scientific language to compare them with others, using my own research. |
| **Vocabulary**  animals, basic needs, plants, depend, food chain, absorb, photosynthesis, producer, consumer, herbivore, omnivore, carnivore, prey, predator | | | | |
| **6** | Introduction to 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 | Asking relevant questions and using different types of scientific enquiries to answer them  Setting up simple practical enquiries, comparative and fair tests  Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers  Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions  Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables  Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions  Identifying differences, similarities or changes related to simple scientific ideas and processes  Using straightforward scientific evidence to answer questions or to support their findings. | [Lesson 1 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-sound/lessons/how-sounds-are-made?sid-4d9573=tvbPmNZ2-9&sm=0&src=4) I can observe that sounds are made when something vibrates.    [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-sound/lessons/how-vibrations-travel?sid-f73031=FewbRDeGug&sm=0&src=4) I can research that vibrations from sounds travel through a medium to the ear.    [Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-sound/lessons/vibrations-and-solid-materials?sid-064584=m3QQttimOt&sm=0&src=4) I can research how sounds can travel through a solid medium to our ears.  [*Ogden Trust Resource : Phizzi Light and Sound : Investigation H - String Telephones*](https://drive.google.com/file/d/1w8vTcihq1ukzGfn1OqtIv4evYTWnysHO/view?usp=drive_link)    [Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-sound/lessons/louder-and-quieter-sounds?sid-36398f=iBEwpD08Ck&sm=0&src=4) I can compare the volume of different sounds and identify loud and quiet sounds.  [*Ogden Trust Resource : Phizzi Light and Sound : Investigation G - Sound Circus*](https://drive.google.com/file/d/1w8vTcihq1ukzGfn1OqtIv4evYTWnysHO/view?usp=drive_link)    [Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-sound/lessons/measuring-the-volume-of-sounds?sid-898c56=aP4kHqmQK-&sm=0&src=4) I can use a data logger to take accurate measurements to compare the volume of sounds.    [Lesson 6 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-sound/lessons/sound-insulation?sid-043ebd=nxp4afsxwH&sm=0&src=4#lesson-details) I can fairly test which materials are good sound insulators and describe how these are used in everyday life.    Lesson 7 - I can compare how the pitch of a sound can change.  [*Ogden Trust Resource : Phizzi Light and Sound : Investigation I - Investigating Pitch*](https://drive.google.com/file/d/1w8vTcihq1ukzGfn1OqtIv4evYTWnysHO/view?usp=drive_link) |
| **Vocabulary**  sounds, objects, vibrations, medium, soundwaves, solid, taut, loud, quiet, volume, decibels, absorb, sound insulator, pitch, frequency, high, low | | | | |