| **Term** | **Science Topic** | **Knowledge and understanding** | **Scientific Enquiry Skills** | **What I will know and remember**  |
| --- | --- | --- | --- | --- |
| 1 | Rocks and soils | compare and group together different kinds of rocks on the basis of their appearance and simple physical propertiesdescribe in simple terms how fossils are formed when things that have lived are trapped within rockrecognise that soils are made from rocks and organic matter | Asking relevant questions and using different types of scientific enquiries to answer themSetting up simple practical enquiries, comparative and fair testsMaking systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggersGathering, recording, classifying and presenting data in a variety of ways to help in answering questionsRecording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tablesReporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusionsUsing results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questionsIdentifying differences, similarities or changes related to simple scientific ideas and processesUsing straightforward scientific evidence to answer questions or to support their findings. | [Lesson 1 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/rocks-and-soils/lessons/introduction-to-rocks?sid-d0494c=GPsFRtA1Vv&sm=0&src=4#video) I can observe rocks that occur naturally and research their uses for different purposes.[Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/rocks-and-soils/lessons/the-appearance-of-rocks?sid-a46d6e=aVXlpRCfTA&sm=0&src=4) I can compare, group and identify different rocks by observing their appearance.[Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/rocks-and-soils/lessons/physical-properties-of-rocks-hardness?sid-0101fe=4o42R8wPiy&sm=0&src=4#worksheet) I can fairly test, compare and group different rocks by investigating their hardness[Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/rocks-and-soils/lessons/physical-properties-of-rocks-permeability?sid-91b666=OYUmycQBcJ&sm=0&src=4) I can fairly test, compare and group different rocks by investigating their permeability. [Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/rocks-and-soils/lessons/how-fossils-are-formed?sid-944fc0=SMthnIBWKH&sm=0&src=4) I can research and describe in simple terms how fossils are formed.[Lesson 6 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/rocks-and-soils/lessons/what-soils-are-made-from?sid-c41e03=UJaBqUI1Fg&sm=0&src=4) I can research what soil is and what soils are made from.[Lesson 7 - Ogden Trust Resources - Enquiry C: Space Soils](https://drive.google.com/file/d/1xfAQj_ZmLtaJHCon6uHIhVqlB4AJWq1J/view?usp=drive_link)I can fairly test different soil types. [Lesson 8 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/rocks-and-soils/lessons/how-geologists-work?sid-22e74b=o40UMEvG-b&sm=0&src=4) I can research the work of geologists. |
| **Vocabulary**material, rock, earth, natural, quarry, hardness, permeability, permeable, impermeable, suitability, fossil, decay, sediment, pressure, imprint, soil, silt, organic matter, geologist |
| 2 | Introduction to the human skeleton | identify that humans and some other animals have skeletons and muscles for support, protection and movement | Asking relevant questions and using different types of scientific enquiries to answer themSetting up simple practical enquiries, comparative and fair testsMaking systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggersGathering, recording, classifying and presenting data in a variety of ways to help in answering questionsRecording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tablesReporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusionsUsing results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questionsIdentifying differences, similarities or changes related to simple scientific ideas and processesUsing 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-skeleton-and-muscles/lessons/the-human-skeleton-support?sid-470612=3-M71ahSq3&sm=0&src=4) I can research how the skeleton supports the human body. [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-skeleton-and-muscles/lessons/the-human-skeleton-protection?sid-4bf807=0axrflaTS_&sm=0&src=4#additional-material) I can observe and research how bones provide protection for the human body.[Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-skeleton-and-muscles/lessons/bone-length-plan-and-do?sid-7143f6=9HpxsPeib5&sm=0&src=4) I can fairly test bones to find patterns as we grow older.[Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-skeleton-and-muscles/lessons/bone-length-review?sid-5f02eb=dGY1QrJ4HO&sm=0&src=4) I can find patterns using data. [Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-skeleton-and-muscles/lessons/animal-skeletons?sid-62e02a=FNJF3rHalr&sm=0&src=4) I can compare and group vertebrate animals based on their skeleton.[Lesson 6 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-skeleton-and-muscles/lessons/animals-without-bones?sid-e0e93d=NQfFLY6zEC&sm=0&src=4) I can compare and group invertebrate animals based on the structure of their bodies.[Lesson 7 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-the-human-skeleton-and-muscles/lessons/muscles-for-movement?sid-e380ee=eXj46-q6qb&sm=0&src=4) I can research why humans have muscles and observe how they move. |
| **Vocabulary**skeleton, bones, x-ray, support, protection, organs, skull, rib cage, spine, adult, endoskeleton, vertebrate, invertebrate, exoskeleton, fluid, muscle, movement, direction, joint |
| 3 | Simple forces including magnets | compare how things move on different surfacesnotice that some forces need contact between 2 objects, but magnetic forces can act at a distanceobserve how magnets attract or repel each other and attract some materials and not otherscompare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materialsdescribe magnets as having 2 polespredict whether 2 magnets will attract or repel each other, depending on which poles are facing | Asking relevant questions and using different types of scientific enquiries to answer themSetting up simple practical enquiries, comparative and fair testsMaking systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggersGathering, recording, classifying and presenting data in a variety of ways to help in answering questionsRecording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tablesReporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusionsUsing results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questionsIdentifying differences, similarities or changes related to simple scientific ideas and processesUsing straightforward scientific evidence to answer questions or to support their findings. | [Lesson 1 - Ogden Trust - Phizzi Forces - Enquiry C: Slippy shoes](https://drive.google.com/file/d/1wRX-nAoBZ92QV9qb2gFOzUEmnHRsY06U/view?usp=drive_link)I can fairly test how things move on different surfaces. [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/simple-forces-including-magnets/lessons/contact-forces?sid-5429f9=m930SZp55E&sm=0&src=4#slide-deck) I can observe that some forces need contact between two objects and give examples from real life.[Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/simple-forces-including-magnets/lessons/magnetic-force-at-a-distance?sid-d715a9=2IMZE1cs7E&sm=0&src=4) I can observe and measure magnetic forces acting at a distance. [Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/simple-forces-including-magnets/lessons/different-magnets-and-their-parts?sid-c38522=lvESOQzEWn&sm=0&src=4) I can identify and name different types of magnets and their parts.[Lesson 5 - Ogden Trust - Phizzi Forces - Enquiry A: Magnetic Materials](https://drive.google.com/file/d/1wRX-nAoBZ92QV9qb2gFOzUEmnHRsY06U/view?usp=drive_link)I can compare and group together everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.[Lesson 6 - Ogden Trust Resource : Phizzi Forces : Enquiry E - Attract/Repel](https://drive.google.com/file/d/1wRX-nAoBZ92QV9qb2gFOzUEmnHRsY06U/view?usp=drive_link)I can observe whether two magnets will attract or repel each other.  |
| **Vocabulary**surface, rough, smooth, force, push, pull, contact force, magnetic force, non-contact force, distance, poles, north-seeking, south-seeking, magnetic, attract, non-magnetic, metal, repel, opposite |
| 4 | Light and shadows | recognise that they need light in order to see things and that dark is the absence of lightnotice that light is reflected from surfacesrecognise that light from the sun can be dangerous and that there are ways to protect their eyesrecognise that shadows are formed when the light from a light source is blocked by an opaque objectfind patterns in the way that the size of shadows change | Asking relevant questions and using different types of scientific enquiries to answer themSetting up simple practical enquiries, comparative and fair testsMaking systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggersGathering, recording, classifying and presenting data in a variety of ways to help in answering questionsRecording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tablesReporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusionsUsing results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questionsIdentifying differences, similarities or changes related to simple scientific ideas and processesUsing 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-light-and-shadows/lessons/light-and-seeing?sid-561ff0=o_jwsGe7nm&sm=0&src=4) I can research and understand that light is necessary for us to see things.[Lesson 2](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-light-and-shadows/lessons/light-sources?sid-5dad99=Nj57Dl74te&sm=0&src=4) - I can identify and name natural and human-made light sources.[Lesson 3 Plan](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-light-and-shadows/lessons/protecting-our-eyes-from-the-sun-plan?sid-da308c=3WfVUuVIJ2&sm=0&src=4#worksheet) / [Lesson 3 Do](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-light-and-shadows/lessons/protecting-our-eyes-from-the-sun-do-and-review?sid-49bb29=fimkx9D7Q8&sm=0&src=4) - I can fairly test the use of sun protection.[Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-light-and-shadows/lessons/opaque-transparent-and-translucent?sid-1b89b2=RQYkvZ_jVx&sm=0&src=4) I can compare different materials based on how transparent they are.[Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-light-and-shadows/lessons/making-shadows?sid-73e25d=0kIZXsWNju&sm=0&src=4) I can research and observe how shadows are formed. [Lesson 6 - Ogden Trust Resource : Phizzi Light and Sound : Investigation F - Shadow Investigation](https://drive.google.com/file/d/1w8vTcihq1ukzGfn1OqtIv4evYTWnysHO/view?usp=drive_link)I can find patterns when investigating shadow sizes.  |
| **Vocabulary**eye, light, dark, see, light source, human-made, natural, sun, protect, damage, ultraviolet, expose, material, opaque, transparent, translucent, shadow, object, distance |
| 5 | Healthy eating | identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat | Asking relevant questions and using different types of scientific enquiries to answer themSetting up simple practical enquiries, comparative and fair testsMaking systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggersGathering, recording, classifying and presenting data in a variety of ways to help in answering questionsRecording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tablesReporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusionsUsing results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questionsIdentifying differences, similarities or changes related to simple scientific ideas and processesUsing straightforward scientific evidence to answer questions or to support their findings. | [Lesson 1 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/healthy-eating/lessons/making-or-finding-food?sid-20170e=q3LUQ50RwR&sm=0&src=4) I can research that animals, including humans, cannot make their own food.[Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/healthy-eating/lessons/types-of-food?sid-1cf053=4hFR_-m1Rn&sm=0&src=4#worksheet) I can identify that humans get nutrients from different types of foods.[Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/healthy-eating/lessons/amounts-of-food?sid-fbbe51=iEEyPhViFD&sm=0&src=4) I can research why the amount of foods humans eat is important. [Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/healthy-eating/lessons/nutrition-from-food?sid-eac4e4=6Ls2K98bzW&sm=0&src=4) I can identify that humans get nutrition from what they eat.[Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/healthy-eating/lessons/different-diets-for-different-people?sid-dfea31=g0l70tyahd&sm=0&src=4#lesson-details) I can observe the diet choices of others.  |
| **Vocabulary**basic needs, food, wild, captivity, habitat, nutrient, vitamin, carbohydrate, protein, calcium, dietician, nutrition, nutritional information, calorie, diet, allergy, alternative, balance |
| **6** | What plants need | identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowersexplore 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 plantinvestigate the way in which water is transported within plantsexplore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal | Asking relevant questions and using different types of scientific enquiries to answer themSetting up simple practical enquiries, comparative and fair testsMaking systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggersGathering, recording, classifying and presenting data in a variety of ways to help in answering questionsRecording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tablesReporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusionsUsing results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questionsIdentifying differences, similarities or changes related to simple scientific ideas and processesUsing straightforward scientific evidence to answer questions or to support their findings. | [Lesson 1 Plan](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/what-plants-do-and-what-they-need/lessons/what-plants-need-plan) / [Lesson 1 Do](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/what-plants-do-and-what-they-need/lessons/what-plants-need-do?sid-c9166d=P64agHNgb5&sm=0&src=4) - I can fairly test to understand what plants need. [Lesson 2 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/what-plants-do-and-what-they-need/lessons/the-function-of-leaves?sid-81ebae=A4TVi8uHft&sm=0&src=0#slide-deck) I can research and observe the function of leaves. [Lesson 3 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/what-plants-do-and-what-they-need/lessons/the-function-of-roots?sid-4fd60e=ucojvXMwBX&sm=0&src=0#additional-material) I can research and observe the function of roots. [Lesson 4 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/what-plants-do-and-what-they-need/lessons/plants-without-roots?sid-296a13=eZUpy07oOA&sm=0&src=0#additional-material) I can observe and fairly test what happens to a plant without roots. [Lesson 5 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/what-plants-do-and-what-they-need/lessons/how-water-is-transported-in-plants?sid-97758f=npvZF3ZZBT&sm=0&src=0) I can observe how water is transported through plants. [Lesson 6 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/what-plants-do-and-what-they-need/lessons/the-parts-of-a-flower?sid-654b22=aQKOyE46R0&sm=0&src=0#slide-deck) I can research and observe the functions of flowers on flowering plants and identify some parts of a flower.[Lesson 7 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/what-plants-do-and-what-they-need/lessons/pollination?sid-e7c188=mFxCOpOjYC&sm=0&src=0#slide-deck) I can research how flowers are pollinated. [Lesson 8 -](https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/what-plants-do-and-what-they-need/lessons/seed-formation-and-seed-dispersal?sid-6838ba=WcsfpuHVX-&sm=0&src=0) I can research how seeds are formed and dispersed.  |
| **Vocabulary**plants, conditions, requirements, leaf, function, carbon dioxide, photosynthesis, roots, absorb, nutrients, soil, anchor, stem, transport, flower, life cycle, reproduce, pollination, petals, stamen, anther, stigma, ovary, petal, pollen, pollinator, fertilisation, seed dispersal, seed formation |