



Markland Hill Science Curriculum – Lower Key Stage 2 Sequence of Learning – YEAR A

physics
biology
chemistry

Rocks (Y3)	Sound (Y4)	Animals, Including Humans (Y3)	Animals, Including Humans (Y4)	States of Matter (Y4)
Scientist: Mary Anning Substantive Knowledge Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soils are made from rocks and organic matter Disciplinary Knowledge: Observe rocks, including those used in buildings and gravestones, and explore how and why they might have changed over time; Use a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. Research and discuss the different kinds of living things whose fossils are found in	Substantive Knowledge 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 Disciplinary Knowledge: Find patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. End points	Scientist: Marie Curie Substantive Knowledge 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 Identify that humans and some other animals have skeletons and muscles for support, protection and movement Disciplinary Knowledge: Identify and group animals with and without skeletons and observing and comparing their movement; Explore ideas about what would happen if humans did not have skeletons. Compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat.	Scientist: Ivan Pavlov Substantive Knowledge 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 Construct and interpret a variety of food chains, identifying producers, predators and prey Disciplinary Knowledge: Compare the teeth of carnivores and herbivores and suggesting reasons for differences; Find out what damages teeth and how to look after them. Draw and discuss their ideas about the digestive system and compare them with models or images. Report on findings from enquiries, including oral and written explanations, displays or	Scientist: John Priestly Substantive Knowledge 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 Disciplinary Knowledge: Group and classify a variety of different materials. Explore the effect of temperature on substances such as chocolate, butter, cream. Research the temperature at which materials change state, for example, when iron melts or

sedimentary rock and explore how fossils are formed. Explore different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they are in water. Raise and answer questions about the way soils are formed. End points I can compare different types of rock (natural and human-made) based upon their appearance. I can make systematic and careful observations by examining different types of rocks. I can group together different kinds of rocks on the basis of their simple physical properties in the context of natural rocks I can describe in simple terms how fossils are formed when things that have lived are trapped within rock by explaining the fossilisation process and by comparing fossils to the animals they belong to. I can explain Mary Anning's contribution to palaeontology. I can recognise that soils are made from rocks and organic	I can identify how sounds are made, associating some of them with something vibrating. I can recognise that vibrations from sounds travel through a medium to the ear. I can find patterns between the pitch of a sound and features of the object that produced it. I can find patterns between the volume of a sound and the strength of the vibrations that produced it. I can recognise that sounds get fainter as the distance from the sound source increases. I can find patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. Key Vocabulary: Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation.	Research different food groups and how they keep us healthy, and design meals based on what they find out. End points I can 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 I can identify that humans and some other animals have skeletons and muscles for support, protection and movement. I can identify and group animals with and without skeletons and observing and comparing their movement; I can explore ideas about what would happen if humans did not have skeletons. I can compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. I can research different food groups and how they keep us healthy, and design meals based on what they find out. Key Vocabulary: Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine	presentations of results and conclusions. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions End points I can describe the simple functions of the basic parts of the digestive system in humans. I can identify the different types of teeth in humans and their simple functions. I can construct and interpret a variety of food chains, identifying producers, predators and prey. I can compare the teeth of carnivores and herbivores and suggesting reasons for differences. I can find out what damages teeth and how to look after them. I can draw and discuss their ideas about the digestive system and compare them with models or images. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. I can use results to draw simple conclusions, make predictions for new values, suggest	when oxygen condenses into a liquid. Observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing drying or snowmen melting. End points I can compare and group materials together, according to whether they are solids, liquids or gases I can 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). I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. I can group and classify a variety of different materials. I can explore the effect of temperature on substances such as chocolate, butter, cream. I can research the temperature at which materials change state, for example, when iron melts or
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matter by explaining how soil is formed. I can make systematic and careful observations in the context of investigating the permeability of different soils. Key Vocabulary: Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil			improvements and raise further question. Key Vocabulary: Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain	when oxygen condenses into a liquid. I can observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing. Key Vocabulary: Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle
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