



Cherry Tree Academy Medium Term Science Cycle A

Autumn 1		
LKS2	Rocks	
	Year 3	Year 4
	<p>L1: Can I name and compare the three different types of rocks? L2: Can I classify rocks according to their features? L3: Can I explain how a fossil is formed? L4: Can I explain what a palaeontologist does and why Mary Anning's discoveries were important? L5: Can I explain what soil is made from and how it is formed?</p>	<p>L1: Can I name and compare the three different types of rocks? L2: Can I classify rocks according to their features? L3: Can I explain how a fossil is formed? L4: Can I explain what a palaeontologist does and why Mary Anning's discoveries were important? L5: Can I explain what soil is made from and how it is formed?</p>
Key Concepts to assess	<p>L1: Children will compare different types of rocks based on their appearance in the context of understanding the difference between natural and human-made rocks. L2: Children will group rocks based on their physical properties. L3: Children will explain to process of fossilization. L4: Children will describe Mary Anning's contributions to palaeontology. L5: Children will observe soils. Children will explain the process of soil formation.</p>	<p>L1: Children will compare different types of rocks based on their appearance and explain the difference between natural and human-made rocks. L2: Children will decide how to group rocks based on their physical properties. L3: Children will explain to process of fossilization and compare fossils to the animals that they belong to. L4: Children will describe Mary Anning's contributions to palaeontology and explain how palaeontology has changed our understanding of prehistoric animals. L5: Children will observe similarities and differences between different soils. Children will explain the process of soil formation.</p>
Vocabulary	<p>Rocks, igneous, sedimentary, metamorphic, form, formation, volcano, sea, seabed, changes, compare, types, natural, human-made, strata, anthropic, group, classify, properties, hard, soft, durable, buoyancy, fossil, sedimentary, fossilization, animals, bones, chemical fossils, body fossils, trace fossils, layers, pressure, coprolite, trackways, Mary Anning, ichthyosaur, dinosaurs, Jurassic, Lyme Regis, scientists, William Buckland, paleontology, observe, soil, organic matter, animals, top soil, sub soil, bedrock, additions, losses, translocations, transformations.</p>	<p>Rocks, igneous, sedimentary, metamorphic, form, formation, volcano, sea, seabed, changes, compare, types, natural, human-made, strata, anthropic, group, classify, properties, hard, soft, durable, buoyancy, permeable, impermeable, fossil, sedimentary, fossilization, animals, bones, chemical fossils, body fossils, trace fossils, layers, pressure, coprolite, compare, Mary Anning, ichthyosaur, dinosaurs, Jurassic, Lyme Regis, scientists, William Buckland, prehistoric, palaeontology, observe, similarities, differences, soil, organic matter, animals, top soil, sub soil, bedrock, additions, losses, translocations, transformations.</p>
Experiences	Trip to Mam Tor	
SMSC		
British Values		
School Values	<p>Considerate of animals in soils, rocks and at the coast. Health-hygiene and hand washing after handling and observing rocks and soils.</p>	



Cherry Tree Academy Medium Term Science Cycle A

Autumn 2		
LKS2	Light	
	Year 3	Year 4
	<p>L1: Can I identify a range of light sources? L2: Can I explain reflection and identify reflective objects? L3: Can I use a mirror to reflect light onto different objects? L4: Can I investigate which materials block light to form shadows? L5: Can I observe patterns in the way that shadows change size?</p>	<p>L1: Can I identify a range of light sources? L2: Can I explain reflection and identify reflective objects? L3: Can I use a mirror to reflect light onto different objects? L4: Can I investigate which materials block light to form shadows? L5: Can I observe patterns in the way that shadows change size?</p>
Key Concepts to assess	<p>L1: Children will explain that we need light to see things and that dark is the absence of light. Children will identify man-made and natural light sources. L2: Children will investigate which surfaces reflect light. L3: Children will know what the image in a mirror is reversed. They will use a mirror to reflect light onto different objects. L4: Children will test how shadows are formed when the light from a light source is blocked by a solid object. They will investigate the best material to use for curtains for a baby's bedroom. L5: Children will find patterns in the way that the size of shadows change, by investigating what happens when you change the distance between the object and the light source.</p>	<p>L1: Children will explain that we need light to see things and that dark is the absence of light. Children will identify man-made and natural light sources and explain why the moon, a mirror and a window are not light sources. L2: Children will investigate which surfaces reflect light and select the most reflective material for a purpose. L3: Children will know what the image in a mirror is reversed. They will use a mirror to reflect light onto different objects and explain to most effective angle in which to position the mirror for doing so. L4: Children will plan and set up an investigation to test how shadows are formed when the light from a light source is blocked by a solid object. They will investigate the best material to use for curtains for a baby's bedroom. L5: Children will find patterns in the way that the size of shadows change, by investigating what happens when you change the distance between the object and the light source. Children will explain the patterns that they find.</p>
Vocabulary	light, source, dark, man-made, natural, reflect, see, illuminate, visible, predict, test, mirror, smooth, shiny, rays, rough, scatter, reverse, beam energy, travel, straight, opaque, translucent, transparent, block, shadow, observe, pattern, size, distance, change.	light, source, dark, man-made, natural, reflect, reflective, see, illuminate, visible, predict, test, mirror, smooth, shiny, rays, rough, scatter, reverse, beam, angle, position, effective, energy, travel, straight, opaque, translucent, transparent, block, shadow, plan, observe, pattern, size, distance, change.
Experiences		
SMSC		
British Values		
School Values		



Cherry Tree Academy Medium Term Science Cycle A

Spring 1		
LKS2	Electricity	
	Year 3	Year 4
	<p>L1: Can I identify common appliances that run on electricity? L2: Can I classify common appliances according to whether they are mains or battery powered? L3: Can I identify circuit components and build a working circuit? L4: Can I draw a labelled diagram of a circuit? L5: Can I predict whether a circuit will work? Can I identify circuits as incomplete or complete?</p>	<p>L1: Can I identify common appliances that run on electricity? L2: Can I classify common appliances according to whether they are mains or battery powered? L3: Can I identify circuit components and build a working circuit? L4: Can I draw a labelled diagram of a circuit? L5: Can I predict whether a circuit will work? Can I identify circuits as incomplete or complete?</p>
Key Concepts to assess	<p>L1: Children will identify and name household electrical appliances. L2: Children will sort pictures of electrical appliances according to whether they are mains or battery powered. L3: Children will identify and name the different components in a circuit and build a circuit that works. L4: Children will construct a simple series electrical circuit and record by drawing and labelling a diagram. L5: Children will use given diagrams to predict whether a circuit will work. They will build it to test it and describe it as complete or incomplete. Children will discuss what they have observed and found out.</p>	<p>L1: Children will identify and name household electrical appliances and classify objects according to them being electrical and non-electrical on a Venn diagram. L2: Children will sort pictures of electrical appliances according to whether they are mains or battery powered on a Venn diagram, placing objects that can be both in the middle. L3: Children will identify and name the different components in a circuit and build a circuit that works. Children will observe what happens to bulb brightness when more cells are added. L4: Children will construct a simple series electrical circuit and record by drawing and labelling a diagram. Children will write simple instructions about how to construct a circuit safely. L5: Children will use given diagrams to predict whether a circuit will work. Children build a series circuit for their partner to examine that is either incomplete or complete. Children will identify incomplete and complete circuits and explain how to make an incomplete circuit complete.</p>
Vocabulary	Appliance, mains, battery, electricity, powered, device, sort, classify, circuit, series circuit, bulb, wire, buzzer, switch, cell, battery, component, diagram, complete circuit, incomplete circuit, conductor.	Appliance, mains, battery, electricity, powered, device, sort, classify, Venn diagram circuit, series circuit, bulb, wire, buzzer, switch, cell, battery, component, diagram, brightness, safety complete circuit, incomplete circuit, conductor.
Experiences	Building circuits.	
SMSC		
British Values		
School Values		



Cherry Tree Academy Medium Term Science Cycle A

Spring 2		
LKS2	Electricity	
	Year 3	Year 4
	<p>L1: Can I identify conductors and insulators of electricity? L2: Can I explain what a switch is and the job it does in a circuit? L3: Can I make a switch? L4: Can I discuss and solve problems about electricity? L5: Can I explain the dangers of electricity?</p>	<p>L1: Can I identify conductors and insulators of electricity? L2: Can I explain what a switch is and the job it does in a circuit? L3: Can I make a switch? L4: Can I discuss and solve problems about electricity? L5: Can I explain the dangers of electricity?</p>
Key Concepts to assess	<p>L1: Children will make predictions about which materials conduct electricity, test, observe and record results. Children will explain how they have carried out a fair test by changing one variable. L2: Children will try adding a switch into the simple series circuit (bulb, wire and cell) they used in previous lessons. Children will explain that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. L3: Children will use folded card and foil to make a switch and add into a simple circuit they used in previous lessons. L4: Children will apply their knowledge of electricity to answer why plastic is used to cover plugs, light switches and plug sockets. L5: Children will make a poster to promote electrical safety in the home.</p>	<p>L1: Children will plan and set up an investigation to predict, test, observe and record which materials conduct electricity. Children will explain how they have carried out a fair test by changing one variable. L2: Children will research different types of switch, add a switch to a circuit and explain that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. L3: Children will use folded card and foil to make a switch and add into a simple circuit they used in previous lessons. Children will draw a diagram, showing how the switch opens and closes the circuit. L4: Children will apply their knowledge of electricity to answer why a circuit completed with a plastic-coated paper clip will not work. L5: Children will make a poster to promote electrical safety in the home and at school.</p>
Vocabulary	Electricity, cell, bulb, battery, circuit, complete, incomplete, conductor, insulator, material, object, equipment, prediction, results, conclusion, fair, variable, metal, wood, plastic, fabric, switch, complete circuit, incomplete circuit, closed, open, on, off, danger, fire, electrocute, water, pylons.	Electricity, cell, bulb, battery, circuit, complete, incomplete, conductor, insulator, material, object, equipment, prediction, results, conclusion, fair, variable, metal, wood, plastic, fabric, plan switch, complete circuit, incomplete circuit, closed, open, on, off, slide switch, toggle switch, selector switch, push button switch danger, fire, electrocute, water, pylons.
Experiences	Trip to Eureka.	
SMSC		
British Values	Rule of law-safety in school and the workplace.	
School Values		



Cherry Tree Academy Medium Term Science Cycle A

Summer 1		
LKS2	Sound	
	Year 3	Year 4
	<p>L1: Can I explain how sound sources vibrate, creating sound?</p> <p>L2: Can I explain how sounds travel to our ears?</p> <p>L3: Can I observe and describe patterns between the pitch of a sound and features of the object that made the sound?</p> <p>L4: Can I explain how sound can be affected by distance?</p> <p>L5: Can I investigate the best material for absorbing sound?</p>	<p>L1: Can I explain how sound sources vibrate, creating sound?</p> <p>L2: Can I explain how sounds travel to our ears?</p> <p>L3: Can I observe and describe patterns between the pitch of a sound and features of the object that made the sound?</p> <p>L4: Can I explain how sound can be affected by distance?</p> <p>L5: Can I investigate the best material for absorbing sound?</p>
Key Concepts to assess	<p>L1: Children will identify sound sources around school. Children will feel (vocal chords) and see vibrations (rice on a drum and tuning fork in water)</p> <p>L2: Children will explain how vibrations travel through a medium to our ears. Children will make observations and find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>L3: Children will make and identify high and low sounds. Children will play high and low sounds on different musical instruments and record the features of each instrument.</p> <p>L4: Children will explain that sounds get quieter as the distance between the sound source and the listener increases. Children will construct and test a string telephone and explain that sound travels along the string.</p> <p>L5: Children will make a pair of ear defenders by attaching different materials to test which best insulate against sound.</p>	<p>L1: Children will identify sound sources around school and explain what was vibrating to create each sound. Children will feel (vocal chords) and see vibrations (rice on a drum and tuning fork in water)</p> <p>L2: Children will explain how vibrations travel through a medium to our ears. Children will make observations and find and conclude patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>L3: Children will make and identify high and low sounds. Children will play high and low sounds on different musical instruments and record the features of each instrument. Children will look for patterns in the features and describe how the pitch can change.</p> <p>L4: Children will explain that sounds get quieter as the distance between the sound source and the listener increases. Children will construct and test a string telephone and explain that sound travels along the string. Children will explain why sounds can be heard better through the string than over the same distance through air</p> <p>L5: Children will make a pair of ear defenders by attaching different materials to test which best insulate against sound. Children will use a data logging App to record the loudness of sounds heard through each material.</p>
Vocabulary	<p>Sound, vibration, volume, tuning fork, sound source, vibration, amplitude, loud, quiet, travel, wave, particles, ear, observe, pattern, high, low, pitch, string instruments, pitched percussion instruments, wind instruments, distance, loud, quiet, telephone, transmit, sound waves, soundproof, absorb, insulate, sound, material, noise, sponge, bubble wrap.</p>	<p>Sound, vibration, volume, tuning fork, sound source, vibration, amplitude, loud, quiet, travel, wave, particles, ear, observe, pattern, conclude high, low, pitch, string instruments, pitched percussion instruments, wind instruments, change, distance, loud, quiet, telephone, transmit, sound waves, air, soundproof, absorb, insulate, sound, material, noise, sponge, bubble wrap, record, results, data logging App/equipment.</p>
Experiences	<p>Making and testing string telephones.</p> <p>Make sound proof ear defenders.</p>	
SMSC		
British Values	<p>Rule of law-noise pollution</p>	
School Values	<p>Considerate-noise pollution</p>	



Cherry Tree Academy Medium Term Science Cycle A

Summer 2		
LKS2	Living things and their habitat	
	Year 3	Year 4
	<p>L1: Can I group living things in a variety of ways? L2: Can I generate questions to use in a classification key? L3: Can I hunt for invertebrates and use a classification key to answer questions to identify and name what I find? L4: Can I recognise positive and negative changes to the local environment? L5: Can I describe environmental dangers to endangered species?</p>	<p>L1: Can I group living things in a variety of ways? L2: Can I generate questions to use in a classification key? L3: Can I hunt for invertebrates and use a classification key to answer questions to identify and name what I find? L4: Can I recognise positive and negative changes to the local environment? L5: Can I describe environmental dangers to endangered species?</p>
Key Concepts to assess	<p>L1: Children will sort living things according to given criteria on a Venn and Carroll diagram. L2: Children will explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment by generating 3 questions to sort vertebrates in a classification key. L3: Children will find invertebrates in the local environment. After carefully examining their invertebrate, children will identify the invertebrate by answering questions on a classification key. Children will draw a labelled diagram and describe the characteristics that they have used in identification. L4: Children will identify dangers to wildlife in the local environment and suggest how humans can have a positive effect on the local environment. L5: Children will name some endangered species and describe how changes to the environment have affected them. Children will research an endangered species and write a report including information gathered.</p>	<p>L1: Children will generate criteria and sort living things accordingly on a Venn and Carroll diagram. L2: Children will explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment by generating 4 questions to sort vertebrates in a classification key. L3: Children will find invertebrates in the local environment. After carefully examining their invertebrate, children will identify the invertebrate by answering questions on a classification key. Children will draw a labelled diagram and describe the characteristics that they have used in identification. Children will compare two invertebrates. L4: Children will identify dangers to wildlife in the local environment and suggest how humans can have a positive effect on the local environment. Children will write an explanation of how their suggestion will help protect local living things. L5: Children will name some endangered species and describe how changes to the environment have affected them. Children will research an endangered species and write and present a report including information gathered. Children will suggest ideas of how we can contribute to the conservation of endangered species.</p>
Vocabulary	<p>Living things, organism, sort, group, criteria, Venn diagram, Carroll diagram, classification key, yes/no question, variation, classification, vertebrates, invertebrates, similarities, differences, local environment, specimen, thorax, abdomen, antenna, segmented, wing case, mandible, proboscis, prolegs, diagram, label, characteristics, habitat, wildlife, change, danger, vulnerable, threat, positive, negative, protect, endangered, extinct, research, report.</p>	<p>Living things, organism, sort, group, generate, criteria, Venn diagram, Carroll diagram, classification key, yes/no question, variation, classification, vertebrates, invertebrates, similarities, differences, local environment, specimen, thorax, abdomen, antenna, segmented, wing case, mandible, proboscis, prolegs, diagram, label, characteristics, compare, habitat, wildlife, change, danger, vulnerable, threat, positive, negative, protect, explanation endangered, extinct, conservation, research, report, presentation.</p>
Experiences	Go on an invertebrate hunt in the local environment.	
SMSC	Moral-caring for living things by handling them carefully with correct equipment and placing them back where they were found. Discuss poaching and deforestation.	
British Values	Rule of law-animal cruelty.	
School Values		

Cherry Tree Academy Medium Term Science Cycle A

