



Science progression – Cycle A KS1



Term 1 - Everyday Materials (Year 1 NC)

National Curriculum Objectives	Key Knowledge	Vocabulary	Key Scientists	Prior Learning	Future Learning
<p>Distinguish between and object and the material from which it is made. Identify and name a variety of everyday materials, including wood, metal, plastic, glass, water and rock, Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple properties</p>	<p>There are many different materials that have different describable and measurable properties. Materials that have similar properties are grouped into metals, rocks, fabrics, wood, plastic and ceramics (including glass). The properties of a material determine whether they are suitable for a purpose.</p>	<p>Hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy/not bendy, waterproof/not waterproof, absorbent, opaque,</p>	<p>William Addis (Toothbrush Inventor) Charles Mackintosh (Waterproof coat) John MacAdam (roads)</p>	<p>Be able to ask questions about the place they live. Talk about why things happen and how things work. Discuss the things they have observed such as natural and found objects. Manipulates materials to achieve a planned effect.</p>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>
<p>Key Question(s):</p>	<p>Working Scientifically opportunities:</p>	<p>Big Question - Assessment opportunity</p>	<p>Linked Texts</p>		
<p>Theme: buildings. Plan to investigate a couple of classes of materials and properties in this topic so children</p>	<p>Competitive tests - Which materials are the most flexible? Which materials are the most</p>	<p>What are the things I use made from?</p>	<p>The Great Paper Caper (Oliver Jeffers) Who Sank the Boat</p>		



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<p>get a depth of experience and cover all the classes of materials over the key stage.</p> <p>Buildings</p> <ul style="list-style-type: none"> • Which rocks are the least crumbly? • Which materials absorb the most water? • Which type of brick would be the easiest to drag to make a pyramid? • Which material would be the strongest to use as a floor tile? 	<p>absorbent? Which material would be best for the roof of the little pig's house?</p> <p>Identify and Classify - We need to choose a material to make an umbrella. Which materials are waterproof?</p> <p>Observation Overtime - What happens to materials over time if we bury them in the ground? What happens to shaving foam over time?</p> <p>Pattern Seeking - Is there a pattern in the types of materials that are used to make objects in a school?</p> <p>Research - How are bricks made? Which</p>		<p>(Pamela Allen)</p> <p>The Three Little Pigs (Lesley Sims)</p>		
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	materials can be recycled?				
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Term 2 - Use of Materials (Year 2 NC)

National Curriculum Objectives	Key Knowledge	Vocabulary	Key Scientists	Prior Learning	Future Learning
<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Find out how shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>Materials can be changed by physical force (twisting, bending, squashing and stretching)</p>	<p>Waterproof, fabric, rubber, cars, rock, paper, cardboard, wood, metal, plastic, glass, brick, twisting, squashing, bending, matches, cans, spoons,</p>	<p>William Addis (Toothbrush Inventor)</p> <p>Charles Mackintosh (Waterproof coat)</p> <p>John MacAdam (roads)</p>	<p>Distinguish between and object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials, including wood, metal, plastic, glass, water and rock, Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple properties.</p>	<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soils are made from rocks and organic matter.</p>
Key Question(s):	Working Scientifically opportunities:	Big Question - Assessment opportunity	Linked Texts		
Theme: Eggs.			The Tin Forest		



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<p>Plan to investigate a couple of classes of materials and properties in this topic so children get a depth of experience and cover all the classes of materials over the key stage.</p> <p>Eggs: Which material could I wrap my ice egg / snowman in to stop it melting, or would it make it melt quicker? What could I wrap a chicken egg in to keep it warm when it is waiting to hatch? What material could I make a parachute out of to save an egg?</p>	<p>Competitive tests - Which shapes make the strongest paper bridge?</p> <p>Identify and Classify - Which materials will float and which will sink? Which materials will let electricity go through them, and which will not? Which materials are shiny and which are dull?</p> <p>Observation Overtime - How long do bubble bath bubbles last for? What will happen to our snowman?</p> <p>Pattern Seeking - How do materials change with heat? leave outside in sunshine/windowsill/radiator How does amount of water affect the strength of a kitchen towel?</p> <p>Research - How have the materials we use changed over time? How are plastics made?</p>	<p>How do we choose the best material for a given purpose?</p>	<p>(Helen Ward)</p> <p>Traction Man (Mini Grey)</p> <p>After the Fall (Dan Santat)</p>		
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Term 3 - Understanding Animals, including Humans (Year 2 NC)

National Curriculum Objectives	Key Knowledge	Vocabulary	Key Scientists	Prior Learning	Future Learning
<p>Know that animals, including humans, have offspring which grow into adults.</p> <p>Know the basic stages in a life cycle for animals, including humans.</p> <p>Find out and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>Animals move in order to survive.</p> <p>Different animals move in different ways to help them survive.</p> <p>Exercise keeps animal's bodies in good condition and increases survival chances.</p> <p>All animals eventually die.</p> <p>Animals reproduce new animals when they reach maturity.</p> <p>Animals grow until maturity and then don't grow any larger.</p>	<p>Living, dead, never alive, habitats, micro-habitats, food, food chain, leaf litter, shelter, sea shore, woodland, ocean, rainforest, conditions, desert, damp, shade.</p>	<p>Steve Irwin (Crocodile Hunter)</p> <p>Robert Winston (Human Scientist)</p> <p>Joe Wicks (Personal Trainer)</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p>	<p>Identify that animals, including humans, need the right types and amount of nutrition, and they cannot make their own food; they get their nutrition from what they eat.</p> <p>Know how nutrients, water and oxygen are transported within animals and humans.</p> <p>Know about the importance of a nutritious, balanced diet.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement:</p>
<p>Key Question(s):</p>	<p>Working Scientifically opportunities:</p>	<p>Big Question - Assessment opportunity</p>	<p>Linked Texts</p>		



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<p>How long do should my pets live for? Do all animals grow and live the same way? Do bigger animals live longer? Why are we all different heights? How and why do we grow and change?</p>	<p>Competitive tests - Do amphibians have more in common with reptiles or fish? Do bananas make us run faster?</p> <p>Identify and Classify - Which offspring belongs to which animal? How would you group things to show which are living, dead, or have never been alive?</p> <p>Observation Overtime - How does a tadpole change over time? How much food and drink do I have over a week?</p> <p>Pattern Seeking - Which age group of children wash their hands the most in a day?</p> <p>Research - What food do you need in a healthy diet and why? What do</p>	<p>Do living things change or stay the same?</p>	<p>The Gruffalo (Julia Donaldson)</p> <p>Meerkat Mail (Emily Gravett)</p> <p>Tadpole's Promise (Jeanne Willis and Tony Ross)</p>		
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	you need to do to look after a pet dog/cat/lizard and keep it healthy?				
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Term 4 - Living things and their habitats (Year 2 NC)

National Curriculum Objectives	Key Knowledge	Vocabulary	Key Scientists	Prior Learning	Future Learning
<p>Explore and compare the difference between things that are living, dead and things that have never been alive.</p> <p>Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.</p> <p>Identify and name a variety of plants and animals in their habitats, including micro habitats.</p>	<p>Some things are living, some were once living but now dead and some things never lived.</p> <p>There is variation between living things.</p> <p>Different animals and plants live in different places. Living things are adapted to survive in different habitats.</p> <p>Environmental change can affect plants and animals that live there.</p>	<p>Living, dead, never alive, habitats, micro-habitats, food, food chain, leaf litter, shelter, sea shore, woodland, ocean, rainforest, conditions, desert, damp, shade,</p>	<p>Terry Nutkins (TV Presenter)</p> <p>Liz Bonnin (Conservationist)</p>	<p>Made comments and asked questions about the place they live or the natural world.</p> <p>Showed care and concern for living things and the environment.</p> <p>Can talk about things they have observed such as plants and animals.</p> <p>Notices features of objects in their environment.</p> <p>Comments and asks questions about their familiar world.</p>	<p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Know and label the features of a river</p> <p>Recognise that environments can change and that this can sometimes pose danger to living things.</p>



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Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name the different sources of food.					
Key Question(s):	Working Scientifically opportunities:	Big Question - Assessment opportunity	Linked Texts		
<p>How do animals eat? Do all animals eat the same thing? Which animals hunt, and which animals are hunted? Why? What animals live in our school environment? How are animals and plants 'adapted' to live in their habitats Why do animals and plants like to live in different places? How do seasons affect our animals and plants? Which animals hibernate and why?</p>	<p>Competitive tests - Which pets are the easiest to look after? Is there the same level of light in the evergreen wood compared with the deciduous wood? Identify and Classify - How would you group these plants and animals based on what habitat you would find them in? Observation Overtime - How does the school pond change over the year?</p>	<p>Why do different animals live in different places?</p>	<p>The Gruffalo (Julia Donaldson) Meerkat Mail (Emily Gravett) No Place Like Home (Jonathon Emmett)</p>		



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<p>Why do snails hibernate, but slugs don't? How do habitats change over our school year?</p>	<p>Pattern Seeking - What conditions do woodlice prefer to live in? Which habitat do worms prefer - where can we find the most worms?</p> <p>Research - How are the animals in Australia different to the ones that we find in Britain? How does the habitat of the Arctic compare with the habitat of the rainforest? What ideas did botanist Arthur Tansley have about habitats in 1935?</p>				
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Term 5 - Seasonal Change (Year 1 NC)

National Curriculum Objectives	Key Knowledge	Vocabulary	Key Scientists	Prior Learning	Future Learning
<p>Observe changes across the four seasons Observe and describe weather associated with</p>	<p>Weather can change There are lots of different types of weather: Rain, Sun, Cloud, Wind, Snow, etc</p>	<p>Seasons, spring, summer, autumn, winter, windy, sunny, overcast, snow, rain, temperature</p>	<p>Dr Steve Lyons (Extreme Weather) Holly Green (Meteorologist)</p>	<p>Developed an understanding of change. Observed and explained why certain things may occur (e.g leaves falling)</p>	<p>Recognise that they need light in order to see things and that dark is the absence of light.</p>



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<p>the seasons and how day length varies.</p>	<p>Days are longer and hotter in the summer Days are shorter and colder in the winter There are four seasons: Spring, Summer, Autumn, Winter</p>			<p>off trees, weather changes). Looked closely at similarities, differences, patterns and change. Made Comments and asked questions about the place they live or the natural world.</p>	<p>Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way that the sizes of shadows change.</p>
<p>Key Question(s):</p>	<p>Working Scientifically opportunities:</p>	<p>Big Question - Assessment opportunity</p>	<p>Linked Texts</p>		
<p>Why do more frequent days of rain saturate the ground? How long does it take for the ground to dry after it has been raining? Does more rain take longer to dry?</p>	<p>Competitive tests - In which season does it rain the most? Identify and Classify - How could you organise all the objects in the solar system into groups?</p>	<p>What is it like in Winter, Spring, Summer and Autumn?</p>	<p>Tree: Seasons Come, Seasons Go (Patricia Hegarty and Britta Teckentrup) One Year with Kipper (Mick Inkpen) After the Storm (Nick Butterworth)</p>		



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<p>Do countries with higher temperatures have less rain? How does rainfall and temperature change over time in our school grounds? Which leaf is the strongest/best shade cover/best at directing water? What do you notice about different leaves? What purpose to leaves serve for a tree? Why do you think leaves turn brown in Winter? What colours can we find outside? Does this change across the seasons? What effect does rain have on the environment? What would happen if there was too much rain? What would happen if there wasn't enough rain?</p>	<p>Observation Overtime - How could you organise all the objects in the solar system into groups? Pattern Seeking - Does the wind always blow the same way? Research - Are there plants that are in flower in every season? What are they?</p>		<p>Electrical Wizard: How Nikola Tesla Lit Up the World (Elizabeth Rusch)</p>		
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Term 6 - Plants (Year 1 NC)

National Curriculum Objectives	Key Knowledge	Vocabulary	Key Scientists	Prior Learning	Future Learning
<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants.</p> <p>Identify and name the roots, trunk, branches and leaves of trees.</p>	<p>Plants grow from seeds/bulbs.</p> <p>Plants need light and water to grow and survive.</p> <p>Plants are important.</p> <p>We can eat lots of plants.</p>	<p>Leaves, trunk, branch, root, seed, bulb, flower, stem, wild, garden, deciduous, evergreen</p>	<p>Beatrix Potter (Author & Botanist)</p>	<p>Make observations of plants.</p> <p>Know some names of plants, trees and flowers.</p> <p>May be able to name and describe different plants, trees and flowers.</p> <p>Show some care for their world around them.</p>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and warmth to grow and stay healthy.</p>
Key Question(s):	Working Scientifically opportunities:	Big Question - Assessment opportunity	Linked Texts		
<p>How do Plants grow?</p> <p>What do Plants need to grow?</p> <p>Do all plants need water?</p> <p>Are all plants green?</p> <p>Why do seeds look different?</p> <p>Can plants grow as big in the shade?</p>	<p>Competitive tests - Which type of compost grows the tallest sunflower? Which tree has the biggest leaves?</p> <p>Identify and Classify - How can we sort the</p>	<p>How many types of plant are there?</p>	<p>Tree: Seasons Come, Seasons Go (Patricia Hegarty and Britta Teckentrup)</p> <p>A Little Guide to Wild Flowers (Charlotte Voake)</p>		



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<p>What is the biggest/smallest/smelliest (etc) tree/flower/plant on the planet?</p>	<p>leaves that we collected on our walk?</p> <p>Observation Overtime - How does a daffodil bulb change over the year? How does my sunflower change each week? How does the oak tree change over the year?</p> <p>Pattern Seeking - Do trees with bigger leaves lose their leaves first in autumn? Is there a pattern in where we find moss growing in the school grounds?</p> <p>Research - What are the most common British plants and where can we find them? How did Beatrix Potter help our understanding of mushrooms and toadstools?</p>		<p>The Things That I LOVE about TREES (Chris Butterworth)</p> <p>Harry's Hazelnut (Ruth Parsons)</p>		
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