






Year 1 – Scientific Enquiry Skills

	Comparative Test	<ul style="list-style-type: none">• Performing simple tests.
	Identify & Classify.	<ul style="list-style-type: none">• Identifying and classifying.
	Observation Over Time	<ul style="list-style-type: none">• Observing closely, using simple equipment.
	Pattern Seeking	<ul style="list-style-type: none">• Gathering and recording data to help in answering questions.
	Research and Communication	<ul style="list-style-type: none">• Ask simple questions and recognise that they can be answered in different ways.• Using their observations and ideas to suggest answers to questions.

Maths within Science

Types of Scientific Enquiry

Comparative / fair testing

Changing one variable to see its effect on another, whilst keeping all others the same.



Research

Using secondary sources of information to answer scientific questions.



Observation over time

Observing changes that occur over a period of time ranging from minutes to months.



Pattern-seeking

Identifying patterns and looking for relationships in enquiries where variables are difficult to control.



Identifying, grouping and classifying

Making observations to name, sort and organise items.



Skill Statements

Asking questions

Asking questions that can be answered using a scientific enquiry.



Making predictions

Using prior knowledge to suggest what will happen in an enquiry.



Setting up tests

Deciding on the method and equipment to use to carry out an enquiry.



Observing and measuring

Using senses and measuring equipment to make observations about the enquiry.



Recording data

Using tables, drawings and other means to note observations and measurements.



Interpreting and communicating results

Using information from the data to say what you found out.



Evaluating

Reflecting on the success of the enquiry approach and identifying further questions for enquiry.



Year 1










- ★ I can ask simple questions about the world.
- ★ I am beginning to recognise that questions can be answered in different ways.
- ★ I am beginning to make predictions based on my own ideas
- ★ I can perform simple tests with support.
- ★ I am beginning to discuss my ideas about how to find things out.
- ★ I am beginning to observe changes over time
- ★ I am beginning to notice patterns and relationships with support.
- ★ I can collect simple data.
- ★ I can record data in a table my teacher has provided.
- ★ I can show my results in a simple table that my teacher has provided.
- ★ I am beginning to say what I would change about my investigation.



Year 1 – Plants

National Curriculum Objectives	Sticky Knowledge	Vocabulary		
<ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants. Identify and name the roots, trunk, branches and leaves of trees. 	<ul style="list-style-type: none"> Plants grow from seeds/bulbs Plants need light and water to grow and survive Plants are important We can eat lots of plants 	Leaves, trunk, branch, root, seed, bulb, flower, stem, wild, garden, deciduous, evergreen		
		Key Scientists	Linked Texts	
			<i>A first book of nature</i> <i>From a tiny seed to a mighty tree</i> <i>The Tiny Seed</i> <i>It starts with a seed</i> <i>The thing that I love about trees</i> <i>Jack and the Beanstalk</i>	
Prior Learning	Key Question(s):	Future Learning		
In EYFS Children should: <ul style="list-style-type: none"> Make observations of plants Know some names of plants, trees and flowers May be able to name and describe different plants, trees and flowers Show some care for their world around them 	<ul style="list-style-type: none"> How do Plants grow? What do Plants need to grow? Do all plants need water? Are all plants green? Why do seeds look different? Can plants grow as big in the shade? What is the biggest/smallest/smelliest (etc) tree/flower/plant on the planet? 	In Year 2 Children will: <ul style="list-style-type: none"> Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and warmth to grow and stay healthy. 		








Teaching Ideas

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
What does a plant need to grow? How do we plant a seed/bulb? 	Can you name the basic parts of a plant? (stem/leaf/flower/root) Can you describe their function?  	Can you name and identify a range of wild/garden plants? 	Can you identify and name an evergreen tree/deciduous tree?  What is the difference between the 2 trees? Can you label to parts of a tree? 	Can you identify and name a range of fruit and vegetable plants? Can you identify a range of fruits and vegetables?  	How can we sort these different plants ? Can you identify them and sort them into categories? Wild/garden/evergreen/deciduous 

Year 1 – Animals, including Humans

National Curriculum Objectives	Sticky Knowledge	Vocabulary		
<ul style="list-style-type: none"> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores 	<ul style="list-style-type: none"> There are many different animals with different characteristics. Animals have senses to help individuals survive. When animals sense things they are able to respond. Animals need food to survive. Animals need a variety of food to help them grow, repair their bodies, be active and stay healthy. 	Amphibians, birds, fish, mammals, reptiles, carnivores, herbivore, omnivore, sight, hearing, touch, taste, smell, head, neck, ear, mouth, shoulder, hand, fingers, leg, foot, thumb, eye, nose, knee, toes, teeth, elbow		
		Key Scientists	Linked Texts	
		Chris Packham (Animal Conservationist)	<i>The snail and the Whale</i> <i>Hooray for Fish</i> <i>Blue Whale</i> <i>The Emperors Egg</i> <i>Growing frogs</i> <i>Non-fiction texts</i>	
Prior Learning	Key Question(s):	Future Learning		
<p>In Early Years children should:</p> <ul style="list-style-type: none"> be able to identify different parts of their body. Have some understanding of healthy food and the need for variety in their diets. Be able to show care and concern for living things. Know the effects exercise has on their bodies. Have some understanding of growth and change. Can talk about things they have observed including animals 	<ul style="list-style-type: none"> What do animals eat? Do all animals eat the same food? Which of our senses is the most accurate at identifying food? Do all animals hunt? Why are animals different colours and patterns? 	<p>In Year 2 children will:</p> <ul style="list-style-type: none"> Know that animals, including humans, have offspring which grow into adults Know the basic stages in a life cycle for animals, including humans. Find out and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 		






Teaching Ideas

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
<p>Can you group animals according to their characteristics?</p> 	<p>What do different animals eat?</p> <p>Can you name some herbivores, omnivores and carnivores?</p>  	<p>Can you label the parts of the body?</p> 	<p>Can you name the 5 senses and name the relevant body parts?</p> 	<p>Can you name and group some common birds, fish, mammals, reptiles and amphibians?</p> 	<p>Seasons</p> 

Year 1 – (ENERGY) Seasons and How they Change

National Curriculum Objectives	Sticky Knowledge	Vocabulary	
<ul style="list-style-type: none"> Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies. 	<ul style="list-style-type: none"> Weather can change There are lots of different types of weather: Rain, Sun, Cloud, Wind, Snow, etc Days are longer and hotter in the summer Days are shorter and colder in the winter There are four seasons: Spring, Summer, Autumn, Winter 	Seasons, spring, summer, autumn, winter, windy, sunny, overcast, snow, rain, temperature	
		Key Scientists	Linked Texts
			The leaf thief Tree (Seasons come, seasons go) One Springy Day The Rescue Party After the Storm One Snowy Day Stick Man Pumpkin Soup Non-fiction texts
Prior Learning	Key Question(s):	Future Learning	
In Early Years children should: <ul style="list-style-type: none"> Developing an understanding of change. Observe and explain why certain things may occur (e.g leaves falling off trees, weather changes). Look closely at similarities, differences, patterns and change. Comments and questions about the place they live or the natural world. 	<ul style="list-style-type: none"> Why is the ground wet? Does more rain take longer to dry? How does rainfall and temperature change over time in our school grounds? What do you notice about different leaves? What do you notice about different leaves? What colours can we find outside? Does this change across the seasons? 	In Year 3 children will: <ul style="list-style-type: none"> Recognise that they need light in order to see things and that dark is the absence of light. 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. 	

Teaching Ideas







<u>Term 1 and 2</u>	<u>Term 3</u>	<u>Term 4</u>	<u>Term 5 and 6</u>	<u>Research</u>	<u>BIG Question – Assessment Opportunity</u>
What is the weather like in Autumn? How hot is it? How windy is it? What do we wear? What do the trees look like? What time does it get light/dark? 	What is the weather like in Winter? How hot is it? How windy is it? What do we wear? What do the trees look like? What time does it get light/dark? 	What is the weather like in Spring? How hot is it? How windy is it? What do we wear? What do the trees look like? What time does it get light/dark? 	What is the weather like in Summer? How hot is it? How windy is it? What do we wear? What do the trees look like? What time does it get light/dark? 	Are there plants that are in flower in every season? What are they? 	What is it like in Winter, Spring, Summer and Autumn?

Year 1 – Materials

National Curriculum Objectives	Sticky Knowledge	Vocabulary	
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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. 	Hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy/not bendy, waterproof/not waterproof, absorbent, opaque,	
		Key Scientists	Linked Texts
		Dr Pearl Agyakwa	Alfie's feet Splish, splash, splosh Non-fiction texts Dogger Tractio Man

Prior Learning	Key Question(s):	Future Learning
<p>In Early Years children should:</p> <ul style="list-style-type: none"> 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>It is recommended that materials be taught three times through KS1. Give a theme for each topic e.g. buildings, exploration, toys, the seaside. Plan to investigate a couple of classes of materials and properties in each topic so children get a depth of experience each topic and cover all the classes of materials over the key stage</p> <p><u>Buildings</u></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><u>Toys & Nice things</u></p> <ul style="list-style-type: none"> Which fabric would make the softest blanket? The baby has spilt her drink, which material would absorb the drink the best? We want to make a really slippery slide, which liquid would be best to use? Which chocolate will melt the fastest on a warm plate (a model of a warm hand) Which wrapping papers are strong enough to wrap and send a present? <p><u>Clothing & Materials</u></p> <ul style="list-style-type: none"> Which material could be used to make a waterproof hat for the teacher when she is on the playground at playtime? Which plastic would be flexible enough to make a belt? 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 could you paint on the runaway gingerbread man that would allow him to swim the river and get away from the fox and not turn to mush? 	<p>In Year 2 children will:</p> <ul style="list-style-type: none"> 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.

Teaching Ideas

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Can you identify materials and name them? Walk around school 	Object or material? Identify the difference between object and material. Describe materials 	Can I describe the properties of everyday materials? 	Testing different materials to find out what properties they have 	Umbrella investigation Which material is best to keep us dry? 	Can I sort classify and sort materials based on their properties? 	WoW!