

## Wildground Federation – Science Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>N 2-3 yrs</b>	<ul style="list-style-type: none"> <li>Explore materials with different properties including natural materials.</li> <li>Repeat actions that have an effect eg push a car, shake a rattle</li> </ul>		<ul style="list-style-type: none"> <li>Explore natural materials particularly different textures and give a response to how this feels eg gesture, facial expressions, sounds, words.</li> <li>Repeat actions that have an effect eg push a car, shake a rattle and give a response to this eg. gesture, facial expressions, clap.</li> </ul>		<ul style="list-style-type: none"> <li>Explore and respond to different natural phenomena in their setting and on trips and give some type of response eg. gesture, facial expressions, sounds, words.</li> <li>Repeat actions for an effect and use simple words in response.</li> </ul>	
<b>N 3-4yrs</b>	<ul style="list-style-type: none"> <li>Explore and collect different natural objects and materials indoors and out and start to use language related to the natural world.</li> <li>Explore and respond to different natural phenomena in their setting and on trips and give a verbal response.</li> <li>Explore and talk about different forces and how they can feel</li> </ul>		<ul style="list-style-type: none"> <li>Explore collections of materials with similar or different properties eg. bark, leaves and rocks.</li> <li>Begin to understand the need to respect and care for the natural environments and all living things.</li> <li>Explore materials that sink or float and be able to articulate this.</li> </ul>		<ul style="list-style-type: none"> <li>Select the appropriate resources to plant a seed.</li> <li>Tend to a plant daily giving water and checking for bugs.</li> <li>Understand the key features of a lifecycle of a plant and animal.</li> <li>Comment on observations of materials when they change state eg. cooling, heating, melting.</li> </ul>	

<b>Year R</b>	<ul style="list-style-type: none"> <li>• Explore the natural world around them</li> <li>• Describe what they can see, feel, hear when they are in the outside environment</li> <li>• Name the different seasons correctly</li> <li>• Describe what the weather is like each day</li> <li>• Gain knowledge about the natural world around them</li> <li>• Explore materials in water and be able to predict materials that will float/sink</li> <li>• Problem solve - how to manipulate materials when they have changes state eg how to get a dinosaur out of an ice block. Have some understanding of properties of materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss the change in temperature</li> <li>• Understand the effects of the changing seasons on the environment</li> <li>• Discuss how animals change over time-duck to duckling, caterpillar to butterfly</li> <li>• Explain how animals live in different habitats</li> <li>• Observe how their environment has changed now we are going into the season of Spring</li> <li>• Recall the life cycle of a plant</li> </ul>	<ul style="list-style-type: none"> <li>• Understand the effects changing of season has on the natural world around them</li> <li>• Able to independently and correctly name the different stages of a lifecycle i.e chrysalis, cocoon, duckling</li> <li>• Discuss how animals live in different habitats and begin to state how these habitats are different</li> <li>• Explain in some terms that some animals eat meat, plants or both</li> </ul>
<b>Prior learning</b>	<p>Explore natural materials indoors and outdoors</p> <p>Explore and respond to different natural phenomena in their setting and on trips.</p>	<p>Begin to understand the need to respect and care for the natural environments and all living things.</p> <p>Explore collections of materials with similar or different properties eg. bark, leaves and rocks.</p>	<p>Understand the key features of a lifecycle of a plant and animal.</p> <p>Plant seeds and care for growing things</p>
<b>Future Learning</b>	<p>Observe and describe weather associated with the seasons and how day length varies.</p> <p>Observe changes across the four seasons.</p>	<p>Find out and describe how plants need water, light and suitable temperatures to grow and stay healthy. (Year 1- Summer term)</p> <p>Identify and describe the basic structure of a variety of common flowering plants including roots, stem/trunk, leaves and flowers. (Year 1-Summer term)</p> <p>Identify and name a variety of common plants. (Year 1- Summer term)</p>	<p>Identify and name a variety of plants and animals in their habitats, including micro-habitats. ( Year 1- Autumn)</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. (Year 1 – Autumn term)</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Year 1- Autumn)</p>

KS1				
Year 1	<p><b>Animals including Humans (1)</b></p> <p>Name and label the key parts of the body. Name the 5 key senses and know which part of the body is linked to each sense. Use their senses to identify different textures, sounds and smells</p> <p><b>Seasonal changes</b></p> <p>Identify what changes take place in plants from Autumn to Winter.</p>	<p><b>Materials</b></p> <p>Identify different materials Identify simple properties of materials Compare and group object based on materials</p> <p><b>Seasonal changes</b></p> <p>Identify what changes take place from winter to spring</p>	<p><b>Animals including humans (2)</b></p> <p>Name common animals and birds found in the UK and school grounds Identify and classify mammals, fish, birds and amphibians. Understand the term herbivore and carnivore.</p>	<p><b>Plants</b></p> <p>Identify common plants Identify basic structure of plants Leaves, roots, stem flower.</p>
	<p><b>Prior learning</b></p> <p>Exploring our sense of self year R</p>	<p><b>Prior learning</b></p> <p>Exploring materials and resources in year r</p>	<p><b>Prior learning</b></p> <p>Hatching chicks in year R</p>	<p><b>Prior learning</b></p> <p>Planting seeds in year R</p>
	<p><b>Future learning</b></p> <p>Year 3 Summer 2 Looking at the human body skeleton Year 2 Autumn 1 Similarities and differences between adults and their young</p>	<p><b>Future Learning</b></p> <p>Year 2 Spring 1 Sort and classify materials Describe properties of materials Find out how materials can be manipulated</p>	<p><b>Future Learning</b></p> <p>Year 2 Autumn 1 Understand living and dead. Explain basic needs of all creatures Understand simple habitats.</p>	<p><b>Future Learning</b></p> <p>Year 2 Summer 2 Expand knowledge of plants Examine bulbs and investigate what plants need to survive</p>

<b>Year 2</b>	<p><b>Living things and their habitats</b></p> <p>Categorise materials into different groups of things that are alive, dead or have never lived</p> <p>Categorise animals into their specific habitat</p> <p>Explain why it is important that humans and animals get their basic needs met</p> <p>Examine a habitat and discover what animals and plants are living within it.</p>	<p><b>Animals including humans</b></p> <p>Propose why animals needs change as they grow.</p> <p>Examine the similarities and differences between offspring and their parents.</p> <p>Explain the importance of good hygiene</p>	<p><b>Animals including humans</b></p> <p>Propose why animals needs change as they grow.</p> <p>Examine the similarities and differences between offspring and their parents.</p> <p>Explain the importance of good hygiene</p>	<p><b>Materials</b></p> <p>Identify and classify a range of materials</p> <p>Construct a range of questions</p> <p>Test prediction/hypothesis</p> <p>Describe physical properties of materials i.e. water, card board, plastic.</p> <p>Find out how materials can be manipulated by bending, squishing etc.</p>	<p><b>Plants</b></p> <p>Illustrate and label the different parts of a plant. (stem, leaf, roots flower, trunk)</p> <p>Analyse how bulbs and seeds grow into plants and explain the process.</p> <p>Investigate what plants need in order to survive.</p> <p>Explain the consequences if plants do not get what they need in order to survive.</p>
	<p><b>Prior learning</b> <b>Year 1 Summer</b></p> <p>Understand what herbivore, carnivores are.</p> <p>Name common birds, animals and invertebrates</p>	<p><b>Prior learning</b> <b>Year 1 Autumn</b></p> <p>Naming body parts and senses</p> <p>Understanding that living things can be sorted. Living things change as they grow</p>	<p><b>Prior learning</b> <b>Year 1 Autumn</b></p> <p>Naming body parts and senses</p> <p>Understanding that living things can be sorted. Living things change as they grow</p>	<p><b>Prior learning</b> <b>Year 1 Spring</b></p> <p>Identify and name materials Wood, paper, metal, plastic, stone</p> <p>Sort materials and their properties</p>	<p><b>Prior learning</b> <b>Year 1 Summer 2</b></p> <p>Identify basic structure of plants Leaves, roots, stem flower.</p> <p>Name common plants</p>
	<p><b>Future learning</b></p> <p>Year 4 Summer -Simple Classification of living creatures Understand what is needed for survival for all living things</p>	<p><b>Future learning</b></p> <p>Understanding the life cycles of different creatures -Year 5</p> <p>Healthy eating-Year 3 Summer</p>	<p><b>Future learning</b></p> <p>Understanding the life cycles of different creatures -Year 5</p> <p>Healthy eating-Year 3 Summer</p>	<p><b>Future learning</b></p> <p>Year 3 Spring Investigating rock hardness</p> <p>Year Autumn Investigating which materials and magnetic</p>	<p><b>Future learning</b></p> <p>Year 3 Summer</p> <p>Investigate how water is transported in plants</p> <p>Investigate factors that effect the rate of growth in plants Name parts of flowers</p>

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>KS2</b>						
<b>Year 3</b>	<p><b>Forces and Magnets</b></p> <p>Identify forces as pushes and pulls Describe friction as a force that slows objects down Sort materials according to magnetic property Investigate with magnets</p>	<p><b>Light</b></p> <p>Categorize materials into; reflective, opaque, transparent and translucent. Explain How light travels and the process of reflection Describe safety measures when investigating light Understand how shadows are formed</p>	<p><b>Rocks and Fossils</b></p> <p>Recognise rocks are made from organic matter Compare and group different kinds of rock by their physical properties Name different types of rock Describe how fossils are formed</p>	<p><b>Animals Including Humans</b></p> <p>Describe why animals depend on the correct nutrition. Explain which parts of the skeleton provide support and protection, and how they allow for movement.</p>	<p><b>Plants</b></p> <p>Identify the different parts of a plant and explain their functions. (Root stem flower) Describe how water is transported in plants. Compare the effect of different factors on plant growth. Name the parts of a flower and explain what they do. Know the 5 ways a seed can be dispersed</p>	<p><b>Plants</b></p> <p>Identify the different parts of a plant and explain their functions. (Root stem flower) Describe how water is transported in plants. Compare the effect of different factors on plant growth. Name the parts of a flower and explain what they do. Know the 5 ways a seed can be dispersed</p>
	<p><b>Prior Learning</b> Name materials (year 1 and 2)</p>	<p><b>Prior Learning</b> Experience of torches in Year R</p>	<p><b>Prior Learning</b> Naming materials in year 2 Looking at how hard materials are</p>	<p><b>Prior Learning</b> Year 2 Naming body parts Explain the importance of good hygiene</p>	<p><b>Prior Learning</b> Year 2 Analyse how bulbs and seeds grow into plants and explain the process.  Investigate what plants need in order to survive.  Explain the consequences if plants do not get what they need in order to survive.</p>	<p><b>Prior Learning</b> Year 2 Analyse how bulbs and seeds grow into plants and explain the process.  Investigate what plants need in order to survive.  Explain the consequences if plants do not get what they need in order to survive.</p>
	<p><b>Future Learning</b> Find out about different forces and the Solar System Year 5 Spring and summer</p>	<p><b>Future Learning</b> Year 6 Investigate the pathway of light Investigate shadows</p>	<p><b>Future Learning</b> Year 5 Autumn Separating soil into its different constituents</p>	<p><b>Future Learning</b> Year 4 Autumn Name and describe parts of the digestive system Name teeth and their functions</p>	<p><b>Future Learning</b> Year 4 Sorting plants based on their characteristics using a classification key. Year 5 Lifecycle of a plant</p>	<p><b>Future Learning</b> Year 4 Sorting plants based on their characteristics using a classification key. Year 5 Lifecycle of a plant</p>

Year 4	<p><b>Animals including humans</b></p> <p>Name and describe the function of parts of the digestive system.</p> <p>Describe the journey of food through the body.</p> <p>Name and investigate teeth</p>	<p><b>States of matter</b></p> <p>Group materials based on properties and their states (solid, liquid or gas)</p> <p>Name some solids, liquids and gases</p> <p>Describe that when ice melts it turns to a liquid</p> <p>Describe how to change water into ice and steam and steam into water</p> <p>Describe examples where these occur</p>	<p><b>Electricity</b></p> <p>Construct a simple circuit and name its components.</p> <p>Sort materials into conductors and insulators, identifying metals as conductors.</p> <p>Predict outcomes with bulbs and switches in circuits.</p>	<p><b>Sound</b></p> <p>Identify similarities and differences between various sounds</p> <p>Recognise a vibration</p> <p>Distinguish between pitch and loudness</p> <p>Suggest how to change the sound made by an instrument</p> <p>Recognise how sound changes with distance.</p>	<p><b>Living things and their habitats (Classification)</b></p> <p>Explain how living things can be classified.</p> <p>Recognise how a simple key helps identify living things.</p> <p>Examine invertebrates in their environment.</p> <p>Identify invertebrates and common trees with a simple key.</p> <p>Classify the five vertebrate groups based on physical features</p>	<p><b>Living things and their habitats (Classification)</b></p> <p>Explain how living things can be classified.</p> <p>Recognise how a simple key helps identify living things.</p> <p>Examine invertebrates in their environment.</p> <p>Identify invertebrates and common trees with a simple key.</p> <p>Classify the five vertebrate groups based on physical features</p>
	<p><b>Prior Learning</b></p> <p>Year 3 summer 2</p> <p>Good Hygiene</p> <p>Why we need good nutrition</p> <p>Human skeleton and how we move</p>	<p><b>Prior Learning</b></p> <p>Year 2 properties of materials</p>	<p><b>Prior Learning</b></p> <p>Year 2 Sorting materials</p>	<p><b>Prior Learning</b></p> <p>Music</p>	<p><b>Prior Learning</b></p> <p>Year 2</p> <p>Categorise materials into different groups of things that are alive, dead or have never lived</p> <p>Categorise animals into their specific habitat</p>	<p><b>Prior Learning</b></p> <p>Year 2</p> <p>Categorise materials into different groups of things that are alive, dead or have never lived</p> <p>Categorise animals into their specific habitat</p>
	<p><b>Future Learning</b></p> <p>Year 5 Life cycle of human</p>	<p><b>Future Learning</b></p> <p>Year 5 Understand the difference between solids liquids and gases</p> <p>Investigate separating different materials</p>	<p><b>Future Learning</b></p> <p>Year 6</p> <p>Draw circuit diagrams</p> <p>Investigate how to change the brightness of a light bulb</p>	<p><b>Future Learning</b></p> <p>Year 4 Listen to me</p> <p>Music Changing sounds and pitch using musical instruments</p>	<p><b>Future Learning</b></p> <p>Life cycles of humans and other creatures</p> <p>Year 5 Summer</p>	<p><b>Future Learning</b></p> <p>Life cycles of humans and other creatures</p> <p>Year 5 Summer</p>

Year 5	<p><b>Properties and changes of materials</b></p> <p>Decide how mixture might be separated. Understand the differences between solids, liquids and gases Give examples of ways to separate solids.</p>	<p><b>Properties and changes of materials</b></p> <p>Decide how mixture might be separated. Understand the differences between solids, liquids and gases Give examples of ways to separate solids.</p>	<p><b>Properties and changes of materials</b></p> <p><b>Dissolving, solubility and solutions</b></p> <p>Understand solubility and insolubility. Give examples of soluble and insoluble materials. Explain that some changes results in new materials Apply knowledge of reversible and irreversible changes.</p>	<p><b>Forces</b></p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	<p><b>Earth and Space</b></p> <p>Explain our place in the Solar System Describe the movement of the Earth and Moon relative to the sun. Explain how we get day and night. Explain the rotation and phases of the moon.</p>	<p><b>Animals including humans -Life cycle</b></p> <p>Describe the life cycle of a human and compare it to other animals. Describe the life cycles of a mammal, insect, amphibian and a bird. Compare and note the differences between the life cycle of a human and other animals. Describe the reproduction process of plants. Report and present findings from enquiries.</p>
	<p><b>Prior Learning</b></p> <p>Year 4 Autumn 2 identify state a material is in solid Liquid or gas</p>	<p><b>Prior Learning</b></p> <p>Year 4 Autumn 2 identify state a material is in solid Liquid or gas</p>	<p><b>Prior Learning</b></p> <p>Year 5 Autumn 1 And year 4 Identifying Solids Liquids and Gas., Separating materials</p>	<p><b>Prior Learning</b></p> <p>Year 3 Autumn Pushes and pulls Things slow down with friction Magnetic force</p>	<p><b>Prior Learning</b></p> <p>Year 5 Spring 1 Gravity Year 3 Autumn Pushes and pulls</p>	<p><b>Prior Learning</b></p> <p>Year 2 How do we change as we grow? SRE Year 4 Changes to our bodies</p>
	<p><b>Future Learning</b></p> <p>Year 5 Spring 1 Understand solubility Investigate turning solids into liquids</p>	<p><b>Future Learning</b></p> <p>Year 5 Spring 1 Understand solubility Investigate turning solids into liquids</p>	<p><b>Future Learning</b></p> <p>Year 7 Chemistry</p>	<p><b>Future Learning</b></p> <p>Year 7 Physics</p>	<p><b>Future Learning</b></p> <p>Year 7 physics</p>	<p><b>Future Learning</b></p> <p>Year 6 Evolution and changes over time. Understand simple genetics and that genes are past on through genes</p>

<b>Year 6</b>	<p><b>Electricity</b></p> <p>Understand and associate the brightness of a lamp, or the loudness of a buzzer with the voltage in the circuit or number of cells. Construct and draw circuit diagrams</p>	<p><b>Evolution and inheritance</b></p> <p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	<p><b>Human Body</b></p> <p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p><b>Classifying living things</b></p> <p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics.</p>	<p><b>Light</b></p> <p>Recognise that light appears to travel in straight lines Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>
	<p><b>Prior Learning</b></p> <p>Year 4 Spring making simple circuits</p>	<p><b>Prior Learning</b></p> <p>Year 5 life cycles and changes Year 3 Rocks and solid (fossils)</p>	<p><b>Prior Learning</b></p> <p>Year 4 digestive system Year 3 Skeletons</p>	<p><b>Prior Learning</b></p> <p>Year 4 classification keys and sorting based on features</p>	<p><b>Prior Learning</b></p> <p>Year 3 light reflections. Year 4 and 6 Electrical circuits and lighting a light bulb.</p>
	<p><b>Future Learning</b></p> <p>Year 7 Physics</p>	<p><b>Future Learning</b></p> <p>Year 7- Biology</p>	<p><b>Future Learning</b></p> <p>Year 7- Biology</p>	<p><b>Future Learning</b></p> <p>Year 7- Biology</p>	<p><b>Future Learning</b></p> <p>Year 7- Physics</p>