



# Spring Vale Primary School: Science Year Five



## Topic: Living Things and their Habitats

### Learning Aims:

- Explain the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
- Describe the life process of reproduction in some plants and animals.
- Describe the changes as humans develop from birth to old age.



Rachel Carson

Learning Outcomes	Pupils can...
	If children cannot access the majority of the objectives they will be teacher assessed as emerging or developing.
Stage 5 expected	<ul style="list-style-type: none"> <li>• I can describe the life cycle of different living things, e.g. mammal, amphibian, insect and bird.</li> <li>• I can describe the differences between different life cycles.</li> <li>• I can describe the process of reproduction in plants.</li> <li>• I can describe the process of reproduction in animals.</li> <li>• I can create a timeline to indicate stages of growth in humans.</li> </ul>
Stage 5 Exceeding	<ul style="list-style-type: none"> <li>• I can create a timeline to indicate the stages of growth in certain animals, such as frogs and butterflies.</li> <li>• I can observe my local environment and draw conclusions about life-cycles, for example, the vegetable garden or plants in a shrubbery.</li> </ul>

**Wonder Question:**  
Why are fish cold blooded?



**Investigation Bank:**

- Plant Deconstruction Investigation
- Sorting Mammals, Reptiles, Birds, Amphibians, Fish and Insects.
- Live Life Cycles.

Last Taught:  
Year 4



# Spring Vale Primary School: Science Year Five



## Topic: Gases all around us

### Learning Aims:

- Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.
- Understand that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.
- Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.
- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.
- Demonstrate that dissolving, mixing and changes of state are reversible change.
- Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.



Richard Feynman

Learning Outcomes	Pupils can...
	If children cannot access the majority of the objectives they will be teacher assessed as emerging or developing.
Stage 5 expected	<ul style="list-style-type: none"> <li>• I can compare and group materials based on their properties. (hardness, solubility, transparency, conductivity, electrical and thermal, and response to magnets.)</li> <li>• I can describe how a material dissolves to form a solution; explaining the process of dissolving.</li> <li>• I can describe and show how to recover a substance from a solution.</li> <li>• I can describe how some materials can be separated.</li> <li>• I can demonstrate how materials can be separated (e.g through filtering, sieving and evaporating.)</li> <li>• I know and can demonstrate that some changes are reversible and some are not.</li> <li>• I can explain how some changes result in the formation of a new material and that this is usually irreversible.</li> <li>• I can discuss reversible and irreversible changes.</li> <li>• I can give evidenced reasons why materials should be used for specific purposes.</li> </ul>
Stage 5 Exceeding	<ul style="list-style-type: none"> <li>• I can describe methods for separating mixtures, for example filtration and distillation.</li> </ul>

**Wonder Question:**  
What happens when you mix bicarbonate of soda and vinegar?



**Investigation Bank:**

- Burning Investigation
- Live Particles Role Play
- Testing Material Properties
- Dissolving Investigation
- Irreversible Changes Investigations

**Last Taught:**  
Year 4



# Spring Vale Primary School: Science Year Five



## Topic: Forces

### Learning Aims:

- 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.
- Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers, and springs.



Isaac Newton

Learning Outcomes	Pupils can...
	If children cannot access the majority of the objectives they will be teacher assessed as emerging or developing.
Stage 5 expected	<ul style="list-style-type: none"> <li>• I can explain what gravity is and its impact on our lives.</li> <li>• I can identify and explain the effect of air resistance.</li> <li>• I can identify and explain the effect of water resistance.</li> <li>• I can identify and explain the effect of friction.</li> <li>• I can explain how pulleys, levers and gears allow a smaller force to have a greater effect.</li> </ul>
Stage 5 Exceeding	<ul style="list-style-type: none"> <li>• I can describe and explain how motion is affected by forces, for example, gravitational attractions, magnetic attraction and friction.</li> <li>• I can work out how water can cause resistance to floating objects.</li> </ul>

**Wonder Question:**  
How does an aeroplane stay in the air?



**Investigation Bank:**

- Water Resistance Test.
- Air Resistance Test.
- Friction Investigation.
- Gravity Testing.

**Last Taught:**  
Year 3





## Topic: Earth and Space

### Learning Aims:

- Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.
- Describe the movement of the Moon relative to the Earth.
- Describe the Sun, Earth and Moon as approximately spherical bodies.
- Use the idea of the Earth's rotation to explain day and night.



Kaplana Chawla & Neil Degraese Tyson

### Learning Outcomes Pupils can...

If children cannot access the majority of the objectives they will be teacher assessed as emerging or developing.

Stage 5 expected

- I can describe and explain the movement of the Earth and other planets relative to the sun.
- I can describe and explain the movement of the moon relative to the Earth.
- I can explain and demonstrate how night and day are created.
- I can describe the Sun, Earth and Moon (include the term spherical.)

Stage 5 Exceeding

- I can compare the time of day at different places on Earth.



### Wonder Question:

Why does the moon change shape in the sky?



Investigation Bank:

- Phases of the Moon Oreo Investigation
- Planet Research
- Sunrise and Sunset Investigation – Data Loggers

Last Taught:  
New Topic