

WITHINFIELDS PRIMARY SCHOOL
SCIENCE CURRICULUM – UPPER KS2

Throughout Science teaching in Year 5/6 teachers will provide opportunities for children to:

- Use their science experiences to explore ideas and raise different kinds of questions
- Talk about how scientific ideas have developed over time
- Select and plan the appropriate type of scientific enquiry used to answer a scientific question
- Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why
- Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment
- Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact
- Make their own decisions about what observations to make, what measurements to use and how long to make them for
- Look for different causal relationships in their data and identify evidence that refutes or supports their ideas
- Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate
- Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- Identify scientific evidence that has been used to support or refute ideas or argument
- Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results
- Use their results to make predictions and identify when further observations, comparative and fair tests might be needed

	Year 5	Year 6
Chemistry	<u>Changes of state</u> Compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets) Know and explain how a material dissolves to form a solution Know and show how to recover a substance from a solution Know and demonstrate how some materials can be separated (e.g. through filtering, sieving and evaporating) Know and demonstrate that some changes are reversible and some are not Know how some changes result in the formation of a new material and that this is usually irreversible	

Biology	<p><u>Living things and their habitats</u> Know the life cycle of different living things including plants and mammals, amphibians, insects and birds Know the differences between different life cycles Know the process of reproduction in plants Know the process of reproduction in animals Describe the changes as humans develop from a baby into old age</p>	<p><u>Circulatory System</u> Identify and name the main parts of the human circulatory system Know the function of the heart, blood vessels and blood <u>Nutrition and taking care of our bodies</u> Know the impact of diet, exercise, drugs and lifestyle on health Know the ways in which nutrients and water are transported in animals, including humans <u>Classification</u> Classify living things into broad groups according to observable characteristics and based on similarities and differences Know how living things have been classified Give reasons for classifying plants and animals in a scientific way <u>Evolution and Inheritance</u> Know how the Earth and living things have changed over time Know how fossils can be used to find out about the past Know about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents) Know how animals and plants are adapted to suit their environment Link adaptation over time to evolution, explaining what evolution is</p>
Physics	<p><u>Forces</u> Know 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 and water resistance Identify and know the effect of friction between moving surfaces Explain how levers, pulleys and gears allow a smaller force to have a greater effect <u>Earth and Space</u> Know about and explain the movement of the Earth and other planets relative to the Sun Know about and explain the movement of the Moon relative to the Earth Know and demonstrate how night and day are created through the Earth's rotation and explain the apparent movement of the sun across the sky Know that the Sun, Moon and Earth are approximately spherical</p>	<p><u>Light</u> Know that light travels in straight lines Know and demonstrate how we see objects using the idea that light travels from a source into our eye or from a source to an object which reflects the light into our eye Know that light travels from a source Know why shadows have the same shape as the object that casts them <u>Electricity</u> Compare and give reasons for why components work and do not work in a circuit Draw circuit diagrams using correct symbols Know how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer</p>