SCIENCE POLICY

INTRODUCTION

At Aldingbourne Primary School we are passionate about providing all children with the opportunities to engage in science. This document outlines our aims in providing an exciting and engaging science curriculum to all children which lays the foundations for understanding the world through biology, chemistry and physics. The curriculum expectations and entitlement for all children are outlined as well as the topics for each Key Stage. This policy also summarises teaching methods and resources used to encourage the children to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. It also allows them to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes.

AIMS

We aim to deliver the science curriculum in an engaging manner, accessible to all children, of all learning styles, whilst building upon prior learning and making science fun.

Our further aims marry that of the National Curriculum. To ensure that all children:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

CURRICULUM EXPECTATIONS AND ENTITLEMENT

At Aldingbourne School all children experience a broad and balanced science curriculum that takes into account all abilities, learning styles and emotional and intellectual development. Science is taught once a week, in every year group, building upon prior knowledge. Long term planning is accompanied by medium term planning as well as daily planning for each weekly topic session. All plans are designed to ignite the children's interest and encourage them to develop a general sense of enquiry and equip them with the tools to help them find answers. We ensure that all children are given opportunities to practically experience scientific investigations, develop their scientific vocabulary, observational skills and knowledge of scientific measuring equipment.

Early Years

In Early Years:

- children look at similarities and differences between themselves and others
- children look at similarities and differences in relations to materials, living things, environments and seasonal changes
- children talk about the features of a variety of environments, including their own and how they vary
- children make observations of animals and plants and explain why some things, including changes, might occur.

Key Stage 1

During Key Stage 1:

- children look at the natural and humanly constructed world around them
- they are encouraged to be curious and ask questions about things they notice
- they are helped to develop their understanding of scientific ideas using a variety of different types of scientific enquiry to answer questions, including: observing changes over time, noticing patterns, grouping and classifying, carrying out comparative tests and using secondary sources of information
- their interest is ignited by first hand practical experiences
- their understanding of how to work scientifically is nurtured and developed, and their confidence to use scientific language is grown.

The Key Stage 1 Science National Curriculum topics:

Autumn	**Spring**	**Summer**
Working Scientifically	Working Scientifically	Working Scientifically
Animals, Including Humans	Everyday Materials/Uses of Everyday Materials	Plants
Seasonal Changes	Seasonal Changes	Seasonal Changes
Living Things and Their Habitats		Living Things and Their Habitats

Lower Key Stage 2

During Lower Key Stage 2:

- children continue to develop and broaden their scientific view of the world around them
- children explore the world around them through talking, testing, developing ideas and looking at relationships between living things and familiar environments

- the topics covered enable the children to ask their own questions and make decisions about which types of scientific enquiry would be best to help answer them
- their ability to form simple conclusions will be nurtured
- they will continue to develop their understanding of scientific ideas using a variety of different types of scientific enquiry to answer questions, including: observing changes over time, noticing patterns, grouping and classifying, carrying out comparative tests and using secondary sources of information.

The Lower Key Stage 2 Science National Curriculum topics:

Autumn	**Spring**	**Summer**
Working Scientifically	Working Scientifically	Working Scientifically
Animals, Including Humans	Rocks	Plants
Light	Forces	Living Things and Their Habitats
Electricity	States of Matter	Animals, Including Humans
	Sound	

Upper Key Stage 2

During Upper Key Stage 2:

- children continue to develop a deeper and broader scientific view of the world around them
- they will be encouraged to explore, question and talk about their own ideas relating to the world around them
- they will be inspired to analyse functions, relationships and interactions more systematically
- children will understand that scientific ideas can change and develop over time
- they will consider more abstract ideas and be inspired to recognise how these ideas help them to understand and predict how the world operates
- they decide the most appropriate way to answer a scientific question, selecting different types of scientific enquiry from observations to carrying out fair tests
- their ability to draw conclusions from observations and collected data will be nurtured. Equipping them with the ability to justify their ideas and to use their own scientific knowledge to explain their findings.

The Upper Key Stage 2 Science National Curriculum topics:

Autumn	**Spring**	**Summer**
Working Scientifically	Working Scientifically	Working Scientifically
Earth and Space	Properties and Changes of Materials	Living Things and Their Habitats
Forces	Living Things and Their Habitats	Animals, Including Humans
Light		Evolution and Inheritance
Electricity		

TEACHING METHODS AND RESOURCES

As a school, we pride ourselves on ensuring the teaching of Science is creative, practical, fun, exciting and accessible to all learners. We achieve this is the following way:

- children experience teacher in role. For example, a scientist comes to ask for their help to explain why birds all have different kinds of beaks
- they participate in scientific enquiry. For example, during materials, children rotate around different stations seeing if the material on the table can be manipulated in a variety of different ways and address their properties
- children have variety of opportunities to make observations, including changes over time. For example, during seasonal changes, the children go on a walk around the school environment to spot signs of the seasons and use their journey sticks
- children are giving primary and secondary sources to classify, whether it be materials to sort into natural or manmade, or pictures of different animals
- children are given multiple opportunities to carry out comparative and fair test using a variety of scientific equipment
- they participate in a variety of activities that enable children of all learning styles to access the objective being covered, whilst captivating their curiosity and scientific knowledge. For example, during states of matter, the Year 4 children play 'Solid, Liquid, Gas Twister'
- children use their scientific skills on school trips. For example, classifying animals at Marwell Zoo and conducting an experiment using scientific equipment in a moving river
- children have access to the environmental area which has 2 ponds with living creatures in, fruit and vegetable beds at certain times of the year and is even home to a dinosaur
- children have access to the science garden which has a variety of enquiry based activities, toys and games for the children to do, including a bug garden, sound tunnel and binoculars
- the school has a science cupboard with a variety of resources across all science topics

- the children have access to computers and laptops during their science lessons.

ASSESSMENT

At Aldingbourne School, formative assessment is an integral part of our daily practise. It is used to inform planning, to facilitate differentiation and to ensure that the children have the foundations to successfully build upon their prior scientific knowledge. Children are assessed at the end of each topic using tools such as 'Who Wants to be a Millionaire?' quiz. In the summer term, key stage 2 children complete a science summative assessment paper. The children's progress is tracked throughout the year using tracking grids. At the end of the academic year, based on classroom observations and assessments, a judgement is given by the class teacher which states if a child is working towards, within or met the history curriculum. This is reported to parents in the child's end of year report.