Teaching and Learning Policy - Science

We live in an increasingly scientific and technological age where children need to acquire the knowledge, skills and attitudes to prepare them for life in the 21st century. We, at Winton Primary School believe that the teaching of science develops in children an interest and curiosity about the world in which they live, and fosters in them a respect for the environment.

We aim that all pupils':

- develop enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life
- build on their curiosity and sense of awe of the natural world
- use a planned range of investigations and practical activities to allow them a greater
- understanding of the concepts and knowledge of science
- are introduced to the language and vocabulary of science
- develop practical skills and their ability to make accurate and appropriate measurements

We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Through the programmes of study in the National Curriculum science document children will acquire and develop these skills throughout their Primary years.

We believe that science promotes communication in a specific and precise language involving mathematical and logical thinking. It allows children to develop ways of finding out for themselves and gives them practice in problem solving. Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data.

As their knowledge and understanding increases and they become more proficient in selecting and using scientific equipment and collating and interpreting results they will become increasingly confident in their growing ability to come to conclusions based on real evidence. Science fosters a healthy curiosity in children about our universe and promotes respect for the living and non living. It allows children to develop original ideas and a questioning attitude.

In science, pupils are encouraged to be open- minded and to try and make sense of what they see and find out. The main focus of our approach will be through open-ended activities where we encourage children to recognize the need for fair testing.

Planning:

Planning is divided into three phases:

- **Yearly Curriculum Overview**, which maps the topics and studied in each term during that year.

- **Science Big Picture** –planned in year groups linking the National Curriculum Learning Intentions and the International Primary Curriculum, In addition to this individual medium term plans are written to deliver SC1 skills with a brief explanation as to how these will be taught.

Big Picture

Science Overview

Year group: Term: Science Focus:

Session	Lesson Theme	NC Ref	Learning Objectives	
			Sc1 Based objectives	Evidence
1				
2				

- **Weekly planning** - the class teacher is responsible for tailoring the medium term plans for their class. These list the specific learning objectives, and outline how these objectives will be taught. Sc1 objectives should be detailed separately to ensure that children are being taught specific Sc1 skills.

Weekly Planning

	Level 1	Level 2	Level 3	Level 4	Level 5
Ideas and evidence	Answer a question with no reason or a non scientific reason	Answer a question using experience	Recognise why it is important to collect data to answer questions	Recognise that scientific ideas are based on evidence	Understand how experimental evidence and creative thinking have been combined to provide a scientific explanation
	Make contributions to discussion	Give reasons to support ideas when asked to do so.	Give scientific reasons to support ideas when asked to do so	Recognise that it is important to test ideas using evidence from observation and measurement	
	Use pictures and annotated diagrams to find out about ideas	Use simple texts, with help, to find out about scientific ideas	Use simple texts to find information	Select suitable information from sources provided	Select from a range of sources of information when trying to answer a scientific question
Planning	Use Why, What if, How and When to ask questions	With help, raise questions	Raise questions	With help raise questions containing scientific knowledge and under-standing	Raise questions containing scientific knowledge and under-standing
	Can identify variables that could be changed.	With help chooses variables and explains fairness	Begin to carry out a fair test, recognising and explaining why it is fair	Plan and carry out a fair test and explain why it is fair	Identify key variables to be considered
	Make a guess/simple prediction	Make predictions with a reason based on personal experience	Make a prediction with a good reason based on personal experience	Where appropriate, they make predictions based upon knowledge and understanding	Where appropriate make predictions based on scientific knowledge and understanding
	With help respond to suggestions about how to find things out	Respond to suggestions about how to find things out	With help decide upon an appropriate approach	Decide on an appropriate approach	Identify several approaches and select the most appropriate
	With help realise suggestions about how to collect data to answer questions	With help, draw up their own format	Draw up their own format	Plan what data to collect	Plan to collect sufficient data to gain reliable results
	With help use simple equipment provided to collect data	Use simple equipment provided	Use a range of simple equipment	Select suitable equipment from a range of similar equipment	Select suitable equipment from a range of similar equipment

Year	Class	Date	Duration
Learning Intention	**Key Vocabulary and resources**	**Organisation**	**Notes for future planning**
SC1 skills Knowledge Success Criteria		Teacher Input – key questions Independent Activity How will ALL children access the learning?/ Additional adults Plenary and Pupil Self-Evaluation	Evidence