Science at Bedford

At Bedford Primary, we believe that Science is a crucial subject to expand curious minds and provides the foundations for understanding the world. Science has changed our lives and is vital to the world's future prosperity. Our primary science curriculum provides a complete structure for teachers in planning and developing science lessons and pupil's are taught essential knowledge and concepts.

Lessons are organised into topic areas and year groups and include opportunities for children to work scientifically. Our science curriculum builds on knowledge and skills so that learning shows clear progress as our children grow.

'A scientist is not a person who gives the right answers, he's one who asks the right questions!'

Claude Levi-Strauss

Our vision for science

We endeavour:

- To develop scientific knowledge and conceptual understanding through the disciplines of biology, chemistry and physics
- To develop an understanding of the nature, processes and methods of science through different types of science enquiries
- To spark natural curiosity and wonder, encouraging students to explore the world around them through questions, discovery, and experimentation.
- To provide the foundations for understanding the world
- To prepare pupils for life in an increasingly scientific and technological world
- To support pupils acquire a growing understanding of scientific ideas
- To enable pupils to question, hypothesise, test and discover for themselves about our world
- To nurture children into young scientists who question, investigate, observe, measure, predict, experiment, interpret and evaluate
- For pupils to ask scientific questions about the world around them
- For pupils to learn about inspiring scientists from diverse backgrounds
- For pupils to gain an understanding of careers that link to science

Skills I need to be a scientist

KS1

Use our thinking brains to work out what might happen and why

Using our eyes and sometimes tools to spot details and changes

Ask relevant scientific questions - wondering why, how and what if

Look at results to try and spot patterns

Test ideas to see what happens

Work together

Measure carefully using equipment

Write or draw to show what we've seen or found out

Use simple scientific vocabulary to say what we did and what we found out

Skills I need to be a scientist

KS2

Have a curiosity about science

Think scientifically

Use senses and simple tools to observe carefully and notice changes, patterns and differences

Ask lots of scientific questions - using what, why and how

Investigate questions and ideas fairly

Make connections between ideas and explaining what might happen and why

Use different methods to explore and gather evidence

Work collaboratively

Measure accurately using different equipment

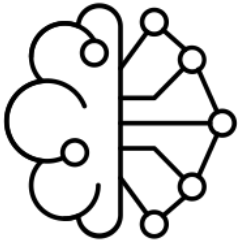
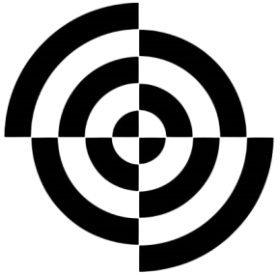
Record data in different ways drawing tables, charts and diagrams

Interpret data by looking for patterns or surprises in results

Use scientific vocabulary to explain what was discovered

Science curriculum

For each topic, teachers are given key information to support them with their planning and delivery and to ensure pupils are taught the essential knowledge they need to know.

Substantive knowledge	Prior knowledge	Future learning	Key vocabulary	Common misconceptions
				

Disciplinary knowledge

				
▪ Pupils use a range of secondary sources (books, websites, articles, people, videos etc.) to gather evidence to answer questions. ▪ They look for patterns in the information they collect, evaluating the reliability and trustworthiness of the evidence they collect when drawing conclusions.	▪ Pupils identify the effect of changing one variable on another whilst attempting to keep other variables constant. ▪ They are useful for gathering data that might inform predictions and further tests. ▪ In comparative tests pupils compare one event with another and identify different outcomes. ▪ With fair tests pupils look to identify a causal relationship between two variables.	▪ Pupils identify and measure events and changes in living things, materials and physical processes or events. ▪ These observations may take place over time spans of minutes or hours up to several weeks or months.	▪ Pupils make observations and measure to explore natural events where there are variables that they can't easily control. ▪ They seek to identify patterns in the measurements, which may lead to other investigations in an effort to try to explain why a particular pattern occurred.	▪ Identification is the process of using observable differences to name something ▪ Classification is organising things into groups based on observations, features and characteristics. ▪ Some questions are answered by naming things and or sorting them into groups, To do this it might be necessary to carry out an observation over time test or use a secondary source as well.

long term plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	Ourselves		Animals (pets)	Animals (farm)	Animals (wild)	Minibeasts
	plants, seasonal change, weather to be taught throughout the year					
Year 1	Animals including humans	Seasonal changes	Animals including humans	Everyday materials		Plants
	plants, seasonal change, weather to be taught throughout the year					
Year 2	Living things and their habitat	Animals including humans		Uses of everyday materials	Plants	
Year 3	Animals including humans		Forces and magnets	Light	Rocks	plants
Year 4	States of matter	Electricity	Animals including humans	Sound	Living things and their habitat	
Year 5	Earth and Space	Forces	Properties and changes of materials		Living things and their habitat	Animals including humans
Year 6	Animals including humans		Electricity	Light	Evolution and inheritance	Living things and their habitats