Science at Bishop's Castle Primary School

Our Curriculum Drivers at Bishop's Castle Primary School			
Confident Communicator	**Widening Horizons**	**Growth Mindset**	**Healthy Body Healthy Mind**
Our Core Values			
Ready	**Respectful**	**Safe**	

We have devised four drivers that run through our school curriculum. They are tailored to our pupil's specific needs and take account of the opportunities and challenges in the context of our school community and our pupils' lives.

"Science stimulates and excites children's curiosity about phenomena and events in the world around them. It also satisfies this curiously with knowledge. Because science links direct practical experience with ideas, it engages learners at many levels. Through science, children understand how major scientific ideas contribute to technical change and the cultural significance of science."
DfEE

CURRICULUM INTENT

What science looks like at our school

At Bishop's Castle Primary School, we have designed our science curriculum with the intent that all children, regardless of background, will develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. Through different types of science enquiries children will answer scientific questions about the world around them.

We aim to ensure that our science teaching and learning activities encourage children to be curious and to ask questions about the world they live in. Our aim is to encourage children to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes, so they think critically and have a deeper understanding of the world now and equip them for the future.

Science holds numerous opportunities for children to be active learners and to learn experientially. They work independently and with others, widen their horizons, develop communication and language skills, apply mathematical and scientific knowledge, plus explore their own creativity. Children are encouraged to ask their own questions, try ideas and learn from mistakes, innovating and suggesting improvements.
Children are encouraged to strive to create the best outcomes they can of which they will be rightly proud and thereby developing positive attitudes to learning.

This is the knowledge and understanding gained at each stage:

By the end of EYFS pupils will:

- Explore the natural world around them, making observations and drawing pictures of animals and plants.
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

By the end of Key Stage 1 pupils will:

- Experience and observe phenomena, looking more closely at the natural and humanly constructed world around them.
- Develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions.
- Begin to use simple scientific language to talk about what they have found out.
- Mostly use first-hand practical experiences, but also appropriate secondary sources, such as books, photographs, and videos.
- Read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

By the end of Key Stage 2 pupils will:

- Develop a deeper understanding of a wide range of scientific ideas and begin to recognise that these change over time.
- Select the most appropriate ways to answer science questions using different types of scientific enquiry.
- Draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to first, to talk about and, later, to write about what they have found out.
- Read, spell and pronounce scientific vocabulary correctly.

CURRICULUM IMPLEMENTATION

This is how it works:

- Science is taught in the EYFS as an integral part of the topic work covered throughout the year. Children are encouraged to explore and investigation independently during continuous provision.
- All children in Classes 2-5 receive a minimum of 1 hour quality science teaching a week.
- Each classes long term plans set out the science units which are taught, ensuring the requirements of the EYFS and National Curriculum are fully met.
- Progression grids ensure that prior knowledge, skills and vocabulary are built open year by year.
- Knowledge and understanding are taught in blocks with a new topic each term/half-term and science investigations are carried out each half term.
- Stick Science days are used every half term to cover other areas of science and allow children to make links and build their knowledge year on year.
- Where possible cross-curricular links are made to enrich learning.
- There are regular practical sessions where children have opportunities to develop their investigative skills.
- Purposeful and effective displays are used to support learning which include vocabulary and reflect the learning taking place.
- There is opportunity for paired, group and class discussion and debate to consolidate learning.
- A range of engaging resources enable children to carry out exciting investigations to deepen their understanding of the concept.

This what adults do

- Plan engaging progressive lessons which build on prior knowledge in line with the National Curriculum.
- Use teacher and self-assessment to identify and child who requires additional support.
- Adapt teaching and tasks to enable children to progress.
- Provide visual and practical prompts to support the needs of children.
- Make cross curricular links whenever possible to widen their knowledge.
- Create a learning environment that supports, encourages and nurtures a love of science.
- Demonstrate how to use scientific equipment and the various 'Working Scientifically' skills in order to embed scientific understanding.
- Scientific vocabulary is taught explicitly, and it is expected that children use the correct terminology when discussing the topic.
- Regular book scrutiny, pupil meetings and planning audits.
- Whole school professional development.
- Include opportunities for outdoor learning, forest school and enhancements.

This is how we challenge:

- Lessons will be adapted.
- Additional activities/targets to stretch the learning within the lesson.
- Activities with alternative/extended discussion points.

This is how we ensure all children can access the curriculum:

- More frequent repetition and revisiting (Sticky Science and retrieval questions) to make it stick.
- Providing visual or practical prompts.
- Adapting teaching and tasks to suit the needs of children.

CURRICULUM IMPACT

This is what you might typically see:

- Engagement and perseverance from all learners.
- Children practising and applying knowledge in different situations.
- Happy, confident and independent learners.
- Children working cooperatively in paired/group work.
- Children observing, questioning and evaluating through investigation.
- A classroom environment with displays including vocabulary to support learning.
- Children discussing, reflecting and sharing their learning.

This is how we know how well our pupils are doing:

- Use of assessment at the end of each topic to identify gaps in learning and enable progress to be monitored.
- Lessons are planned within children's prior knowledge in mind.
- Teachers assess the individual progress of a child against the learning objective and against National Curriculum objectives using Insight.
- Next step marking and feedback by teachers and peers.
- Displays of work around school.
- Book scrutiny, pupil meetings and planning audits.
- Pupil and teacher voice questionnaires.
- Regular monitoring of the teaching and learning within the science curriculum.

At the end of Key Stage 2:

- Children recognise the relevance of science in the wider world and to their future lives.
- Children understand and use a wide range of scientific vocabulary.
- They have acquired knowledge and a wide range of skills, covering all areas of the Science curriculum, which they can apply when raising their own questions and planning investigations to try and answer them.
- Children understand the importance of scientific enquiry in helping them to answer scientific questions about the world.
- They use a range of scientific types of enquiry, working independently, selecting their own tools and materials, and selecting an appropriate way of recording.
- They can accurately and constructively evaluate their ideas thinking critically and reflecting on their work.

Children leave Bishop's Castle Primary School feeling that their efforts in science were valued and their opinions heard. They have had opportunities to explore their science ideas through working scientifically and were encouraged to use them.

They are equipped with the scientific knowledge and skills required to understand the uses and implications of science, today and for the ever-changing world of the future.