Science

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BY:	Science Co-ordinator – J Thompson
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Intent

The aim of Science education is to give pupils the knowledge they need to live healthy and fulfilled lives as well as creating citizens who make positive contributions to the future of our planet and society.

At Crooksbarn we teach Science in a way that fosters a curiosity and a lifelong love for the subject. We give our students lots of opportunity for practical, hands-on experiences and the knowledge to make sense of the world around them.

We teach a balanced and broad curriculum which embeds the skills and knowledge they need to become methodical, analytical, and inquisitive scientists.

We aim to inspire the next generation of scientific leaders and enable all students to make informed decisions and contribute to creating a sustainable future for our planet.

Our Aims

Through the Science curriculum and the school ethos, our pupils will:

- be provided with appropriate and stimulating scientific experiences which encourage pupils to make sense of the world around them.
- develop a curious attitude to scientific enquiry and an awareness of the influence of science in everyday life.
- be prepared for life in an increasingly scientific and technological world.
- take part in activities that meet the requirements of the Early Years and National Curriculum in a way that is appropriate to the needs and interests of all pupils and which challenge them to fulfil their potential.
- develop their scientific knowledge and understanding.
- develop their investigation skills.
- explore the history of scientific inventions and famous scientists (including through cross-curricular links).
- have opportunities to apply their scientific knowledge and skills to solve problems in a wide variety of contexts including real life examples and be encouraged to discuss and debate their findings.
- record their scientific studies in a variety of ways and consider how these are relevant to their learning.
- develop their explanatory and communicative skills.
- build confidence in working both collaboratively and independently on scientific tasks.
- develop a caring attitude to the environment and living things.
- understand safe ways of working and to take increasing responsibility for managing their own investigations safely.
- use a progressive scientific vocabulary.
- use scientific contexts to develop and consolidate the basic cross curricular skills of literacy, numeracy and computing.
- study a balance of biology, chemistry and physics.

Implementation

Teaching and Learning

Science is taught throughout the school year on a weekly basis. Where possible Science will be taught alongside a topic or theme which can offer real life contexts and examples. Where this is not possible Science is taught as a discrete subject.

We use a variety of teaching and learning styles in Science lessons. Our principal aim is to develop children's skills, knowledge and understanding. We organise our Science lessons to give children opportunities to learn in different ways.

These include:

- Whole class teaching
- Collaborative Learning Structures
- Group / Paired / Independent work
- Pupil discussions and debate
- Experiential investigation and problem solving
- Research and explorative work
- Review & Retrieval practise
- Using a variety of computing resources
- Fieldwork and educational visits

Planning

As many children are taught in mixed year groups, a 2-year rolling programme is implemented. This allows progression and continuity, ensuring that new learning takes place and all the programmes of study have been covered by the time the children have reached the end of each Key Stage.

Long term planning for each team is available on the school network and website. It has been organised to encourage cross-curricular links wherever possible. Units are planned in a two-year cycle.

Medium term plans are also on the school network and website. These plans may be altered as long as the objectives remain the same. Teaching time varies according to the unit being taught. It is up to the individual teacher how this is incorporated into the timetable.

Vocabulary

We value the importance of children developing a rich and progressive scientific vocabulary. Knowledge Organisers are placed in books at the start of a topic with key vocab identified in an easily accessible section. Key vocabulary will be referred to throughout the topic and displayed where possible.

Assessment

Assessment is an integral part of the teaching process and should be carried out in order to monitor progress and achievements. Children's progress will be monitored by individual teachers with reference to the learning outcomes.

In Key Stage 2, pupils will have a knowledge Organiser for each topic which they can refer to throughout the unit. In Key Stage 1 this will be replaced by teacher / pupil discussions at the start of a topic to gain understanding of prior knowledge.

Retrieval practice will take place throughout a topic to support pupil learning. A quiz will be completed at the end of each topic. Teachers will assess and record pupil achievement using the Assessment tracker on the school network.

Differentiation

Differentiation within Science may take place by outcome or task. The abilities of all children will be taken into account when they are given the task, the equipment and the support from adults within the school. Activities are planned carefully which involves varying levels of support and open-ended investigations where appropriate.

SEND

Teachers should set high expectations and provide opportunities for all pupils to achieve and progress. Where appropriate individual needs should be catered for so that all pupils can take part in lessons fully, effectively and to the best of their ability. Where children exceed expectations, the teacher will extend their learning by providing more challenging work.

Cross Curricular Links

Computers can be used in many ways in Science, from writing up experiments to demonstrating results in various forms, it can also provide support for children with SEND.

Maths can also be linked to science through recording and presentation of data and measurement using a variety of units during investigations and experiments.

Equal Opportunities

We aim to make the provision of Science accessible to all pupils in the school, regardless of race, gender, class, religion and disability. Resources and display will reflect positive images of all communities represented in our school and society.

Health and Safety

Safety Checklist

- Are the children encouraged to develop an awareness of safe working practices?
- Do the children know what procedure to follow if an accident occurs?
- Is a first aid box readily accessible?
- Are safety notices clearly displayed?
- Is there a fire extinguisher and fire blanket available?
- Are the children aware of fire precautions that need to be taken?
- Do the children have access to protective clothing, such as aprons, goggles and gloves?
- Long hair can create dangerous situations and should be tied back.
- Is potentially hazardous equipment stored securely?
- Are containers clearly labelled?
- Are instructions about using materials and equipment followed rigorously?
- Do the children receive adequate supervision when using potentially dangerous tools and equipment?
- Do the children wash their hands after handling materials?
- Is food and drink prohibited during science lessons?
- Has a class routine been established for concluding practical activities?
- Is care taken to ensure that their classroom and equipment is properly cleaned after use?

It is the responsibility of each teacher to make themselves aware of the health and safety guidelines in the Science National Curriculum.

Resources

Resources are mainly stored in the resource cupboard; however, some resources which are relevant only to a particular year group are stored in that classroom.

Resources should be clearly labelled and stored carefully. Please return resources in a neat and tidy manner, any breakages should be reported to the Science co-ordinator.

Please be aware of financial constraints and use resources with consideration.

Impact

Co-ordinators Role

The Science co-ordinator will endeavour to

- Offer advice, guidance and support.
- Set a good example.
- Monitor and evaluate the planning and teaching of science.
- Ensure that resources are available.
- Attend appropriate courses and disseminate appropriate information.

Monitoring and Evaluation

This will be carried out by the Science co-ordinator and will involve:

- Learning walks and lesson observations on a regular basis
- Evaluating children's work involving scrutinising books and observation of displays.
- Pupil Voice

Success criteria

The success of this policy and Science within school can be measured through:

- Well organised and appropriate resources available.
- Clear understanding of systems in place and the development of skills needed to be taught.
- High standard of work.
- Children actively engaged in scientific activities throughout the school.
- The requirements of the National Curriculum are met.
- Children enjoy Science.

Agreed by

This policy was agreed by the staff and governors of Crooksbarn Primary School.

Review Date

This policy will be reviewed in September 2026.