

## **Science Policy**

**Science Leader:** - Linda Honess

### **Introduction**

At Castledyke, we encourage children to be inquisitive throughout their time at the school and beyond. The science curriculum fosters a healthy curiosity in children about our universe and promotes respect for our world. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Throughout the programmes of study, the children will acquire and develop the key knowledge that has been identified within each unit and across each year group, as well as the application of scientific skills. We ensure that the Working Scientifically skills are built-on and developed throughout children's time at the school so that they can apply their knowledge of science when using equipment, conducting experiments, building arguments and explaining concepts confidently and continue to ask questions and be curious about their surroundings.

### **Intent**

- 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 ask and answer scientific questions about the world around them.
- Children are equipped with the scientific skills required to understand the uses and implications of science, today and for the future. We understand that it is important for lessons to have a skills-based focus, and that the knowledge can be taught through this.
- Learn about key scientists and learn how they have changed the world in which we live.

### **Implementation**

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following;

- Science will be taught by the class teacher using the Kapow resources to aid their planning.

- Within our planning, we include problem solving opportunities that allow children to apply their knowledge and find out answers for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills and assess pupils regularly to identify those children with gaps in learning, so that all pupils keep up thus ensuring equal opportunities for all.
- We build upon the knowledge and skill development of the previous years. As the children's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in keeping with the topics.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts.
- Children are offered a wide range of extra-curricular activities, visits, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class.

### **Impact**

The science curriculum at Castledyke provides all children with a fun, engaging, high-quality science education, that affords children the foundations and knowledge for understanding the world. Our engagement with the local environment ensures that children learn through varied and first-hand experiences of the world around them. Frequent, continuous and progressive learning outside the classroom is embedded throughout the science curriculum. Children learn the possibilities for careers in science, as a result of our community links such as Water's Edge and connection with national agencies such as the STEM association.

### **Planning**

The National Curriculum document for Science sets out a clear, full and statutory requirement for all children. It determines the content of what will be taught and sets attainment targets for learning. The programmes of study set out what should be taught at Key Stage 1 and 2 and The Foundation Stage programmes of study for Understanding of the World are set out in the EYFS. All pupils are given equal access to the National Curriculum at the appropriate levels. Planning in years 1 to 6 is based around the Kapow planning. However, as a school, we have personalised the curriculum to make it ours and have tailored it to the specific needs of our unique cohort of learners. We have considered the key knowledge and skills, which need to be taught and have created some statements which reflect what the expected and greater depth standards of learning look like for each unit in each year group. This will ensure complete coverage of the curriculum objectives and will ensure that our assessments are robust and rigorous. It also ensures that the children who require further support are scaffolded to achieve their potential and the most able children are stretched with challenges. Long and medium term planning is available electronically from the science leader, which is in line with the National curriculum 2014 science document.

Science is taught as a discrete subject. It has been agreed that our medium-term planning will include the vocabulary to be taught in that unit of work, the skills that will be taught, opportunities for assessment and differentiated activities on a common theme. Investigations are expected to take place regularly.

The class teacher is responsible for timetabling to ensure that the relevant sections of the Curriculum are taught. The teaching methods and organisation needed to match the abilities and interests of the pupils, includes whole class teaching, group work or individual input led by the class teacher and skills building upon prior skills taught. Opportunities for cross-curricular approaches to science should be exploited.

## **Assessment**

Children's progress is continually monitored throughout their time at Castledyke Primary School and is used to inform future teaching and learning. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study as set out in the National Curriculum. These are set out as statutory requirements. We also draw on the non-statutory requirements to extend our children and provide an appropriate level of challenge. Children receive effective feedback through teacher assessment, both orally and through written feedback in line with the success criteria. Assessment for learning is continuous throughout the planning, teaching and learning cycle. However, children are more formally assessed half termly in KS1 and KS2 using a variety of methods: -

- Observing children at work, individually, in pairs, in a group, and in classes.
- Questioning, talking and listening to children.
- Work in books demonstrates that objectives have been met. Books indicate any misconceptions and these are picked up on. Marking is up to date and moves learning forward. We aim for around 80% of the objectives to have been met across the unit for the children to be deemed ARE.
- Discrete assessment opportunities every half term at the end of each unit in the form of a short end of unit quiz. These quizzes illustrate to the teacher the extent to which learning objectives have been met. Quizzes are documented on a subject tracker each half term. This is used to inform planning of future lessons and activities and also helps the teachers with their judgements for Arbor.

## **Role of the Subject Leader**

The subject leader is responsible for:

- Understanding the requirements of the subject.
- Monitoring and raising standards across the school.
- Data analysis.
- Reporting to SLT and Governors.
- Preparing policy documents, curriculum plans and schemes of work for the subject.
- Encouraging staff to provide effective learning opportunities for all pupils.
- Helping colleagues to develop their subject expertise.
- Collecting and auditing resources.
- Be responsible for ordering resources for the subject and maintain an up-to-date inventory and check that staff are aware of them and can access them readily.
- Ensuring common standards and formats for recording and assessment.
- Communicating all developments in the subject, e.g., through staff meetings.

- Organising and monitoring professional development in the subject.
- Liaising with relevant organisations regarding the subject, e.g., advisory teachers, Far Ings centre and Tesco.
- Provide guidance and support to staff in implementing the policy and scheme of work with particular attention to ECT's, new members of staff and supply teachers.
- Contribute to the school development plan in respect of science,
- Ensure through observation and monitoring that work in this area conforms to all equal opportunities and inclusion principles and procedures within the school.

### **SEND Provision**

At Castledyke, all lessons should be appropriately differentiated to meet the varying needs of all children; ensuring that children of all abilities and backgrounds have an equal opportunity to make good progress and enjoy science. Teachers adapt their teaching to ensure that GDS children are given opportunities for stretch and challenge and SEND children who require extra support have scaffolds in place to help them achieve their potential. The Kapow scheme of learning also provides staff with adaptation examples for every lesson. The document below details the specific support for SEND children in science.

<https://docs.google.com/document/d/1WEjs3pn38a9UnM918C33aAsfAGkacfJj/edit>