

Goldenhill Primary Academy



Science Policy September 2023

“Everyone Shines At Goldenhill”.

Mission statement:

Goldenhill Primary Academy provides a happy, friendly, secure and respectful environment; where everyone achieves their potential and develops a lifelong love for learning.

Purpose of the policy

This policy sets out our academy's vision, aims, principles and strategies for the delivery of Science across the Academy.

Aims and objectives

Our Science Policy follows the National Curriculum 2014 for Science Guidelines and aims to ensure that all pupils:

- 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 scientific enquiries which help them to answer scientific questions about the world around them;
- Are equipped with the scientific knowledge required to understand the implications of science, today and in the future.

Objectives

- To ensure that teaching and learning in school supports the development of skills and understanding in Science, ensuring that all pupils achieve their full potential.
- To ensure that teaching staff are confident and trained in the teaching of science.
- To provide a rich, immersive and varied Science curriculum that will stimulate and interest all pupils.
- To ensure that teaching styles and methods vary to suit different learning styles and abilities.
- To provide resources for all pupils that will support effective learning and teaching.

Time allocations

In the early years, Science and the understanding of the world exploration will be intertwined with the creative and immersive provision which the children receive in these years. Children will take part in a range of activities both independently, and led by the class teacher and support staff. This will help children to achieve their Early Learning Goal.

From Years 1-6, children will have 2 hours of science teaching per week. Sometimes, where appropriate, this may be in the form of a longer investigation session, or shorter knowledge based or practical sessions. The allocation of 2 hours a week is mandatory and has been allocated for teaching staff in their teaching timetable.

Science in the EYFS

FS1:

In FS1 children are encouraged to develop their scientific communication skills and understand 'why' questions, such as 'Why do you think the caterpillar got so fat?'.

Children are encouraged also to make healthy choices about food, drink, activity and tooth brushing. They gain knowledge which they take with them throughout their education, in terms of a healthy life.

Through the Understanding the World strand of their curriculum, children will experience hands-on, a range of materials, while discussing their properties. They will be supported to talk about what they see, and explore how things work. They will participate in caring for growing plants, and understand the key features of a life cycle of a plant/animal. They will begin to understand the importance of caring for the natural environment and living things within our world.

FS2:

Children will begin to ask their own questions, clarifying what has been said to them. They will be encouraged to articulate their ideas in well-formed sentences, and describe events with detail. They will also be able to explain how things work and how they might happen, using their new vocabulary in different contexts.

Their understanding of a healthy lifestyle will develop. They will begin to know and talk about physical activity, healthy eating and drinking, tooth brushing, having a good sleep routine, 'screen time' and being a good pedestrian. They will further explore the natural world around them in a material rich environment. They will describe using their senses while outside. They will be able to recognise that some environments are different to the one in which they live, and they also understand the effects of the changing of the seasons.

Curriculum Organisation

In Goldenhill Primary Academy, teachers are encouraged to progressively develop pupils' scientific knowledge and working scientifically skills throughout the year, through discrete learning opportunities.

Each class has been provided with a long-term yearly overview of the expected teaching and coverage for the year, and these have been agreed and planned for by staff.

The majority of lessons taught by staff will be based on the content of Curriculum Maestro. However, teachers have had the opportunity to engage in high quality, topic specific CPD in the past 12 months, which they have been encouraged to use to inform their planning. Because of this, some staff members have chosen to adapt lessons more significantly in line with ideas and suggestions from experts during training, and this level of creativity is encouraged at Goldenhill.

Whole Academy Approach to Teaching and Learning of Science

When delivering the National Curriculum for Science, teachers are expected to employ a range of strategies and to use their professional judgement to decide on the most appropriate teaching and learning style.

For all units, staff and children will have access to a knowledge organiser, containing key knowledge, information and vocabulary, relevant to each Science topic. These are used and referred to during the topic by both children and staff.

Curriculum Maestro's science units follow the four corners (engage, develop, innovate and express) in a similar way to our History and Geography curriculum. This is helpful for the children, as the ideas transcend into this part of their learning too.

For many of the units of Science, the engage section will give them key knowledge and information to spark their interest and engagement with the topic. This section also begins to introduce them to some of the key scientific skills they will use throughout the area of learning.

When the children begin to develop their learning, they put the knowledge and skills into practice during a range of enquiries, depending on the area of science. As an academy, we are working very hard to allow children as much autonomy as possible when it comes to these investigations. In science lessons, children are encouraged to:

- Choose their own enquiry questions based on prior knowledge, research, curiosity;
- Plan and equip their own investigations;
- Name and locate relevant scientific equipment;
- Work as part of a team, or independently, to complete enquiries;
- Record observations and results;
- Display results in a range of ways, depending on the age and stage of the children;
- Draw conclusions and interpret results to allow the answering of scientific questions.

In line with the TAPS plan, do, review model (see below), all of some of these may be completed in a lesson depending on the scientific enquiry, Staff have been encouraged to ensure their coverage of each of these steps across the Academic year.



Long Term Planning:

The Long Term plan for Science at Goldenhill sets out when and where each unit will be taught in each year group throughout the year. This long-term plan is based on the units of Science outlined by Curriculum Maestro (Cornerstones)

Short Term Planning:

Short term planning has been developed by class teachers using the resources and learning intentions from Curriculum Maestro. Planning is based on the Big Ideas, and then the aspect of science to be taught. Class teachers outline key vocab, key learning questions, and include aspects of working scientifically as much as appropriate, during their planning. Learning labels are provided for each child for every Science lesson.

Explorify

Teachers will be encouraged to use 'Explorify Science' as an additional tool for their teaching. Explorify provides access to a range of enquiry activities, which can be used as starters to lessons or end of lesson activities. These include 'Odd one out' activities which can also be used as an effective assessment tool and 'Zoom in, Zoom out' activities which are fantastic activities for engaging the children's curiosity. The children have enjoyed the use of these tools across the academy since its implementation and we are therefore keen to continue their use.

Assessment

Formative assessment takes place on a lesson-by-lesson basis. Teachers will use their skills of questioning, observations and discussions to ascertain whether children in their class have achieved the lesson's objectives. Feedback is provided verbally within the lesson time, and where possible, staff are encouraged to 'live mark' within the lesson using the marking policy. As well as providing positive feedback during this time, staff are able to identify next steps, which might include spellings, calculations or presentation.

Teachers can also use this time to provide further challenge for all children within or after a lesson.

At the end of each half term, children are against each learning objective for each unit of work on the academy's Science Assessment Record, which indicates if the child is working towards that objective or has worked beyond that objective and is therefore higher standard. TAPS assessments are carried out once per unit to assess children's working scientifically skills. Staff then input assessments onto the DC Pro system throughout each term as appropriate.

Roles and responsibilities

It is the responsibility of the **Subject Lead** that the following are carried out:

- Advising colleagues on planning, delivering and assessing Science
- Monitoring the effective use of Science
- Ensuring progression in Science
- Identifying if any support/CPD is needed
- Reviewing and revising the Science policy
- Co-ordinating and overseeing equipment maintenance.

The **Headteacher and the Senior Leadership Team** will:

- Ensure all school personnel are aware of and comply with this policy;
- Work closely with the subject leader and the link governor;
- Ensure compliance with the legal requirements of the National Curriculum;
- Consider dis-applying a pupil from all or part of the National Curriculum for a period of time if this will benefit the child;
- Encourage parents to take an active role in curriculum development;
- Provide leadership and vision in respect of equality;
- Provide guidance, support and training to all staff;
- Monitor the effectiveness of this policy by;