



## Science policy



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# **GOLDEN HILL SCHOOL SCIENCE POLICY**

## **Introduction**

This policy outlines what we are aiming to achieve in respect of pupils' Science education. It also describes our agreed approach to the planning, delivery and assessment of the Science curriculum.

The National Curriculum 2014 and EYFS documents for Science describe what must be taught in each key stage.

This policy provides information and guidance for staff, members committee and other interested persons.

## **INTENT**

Our School Curriculum focuses on developing the skills and abilities of all our pupils. School staff are fully committed to ensuring the needs of our pupils are met both academically and in regard to their social, emotional and behavioural difficulties. Our Curriculum motivates and challenges our pupils to want to achieve their best in all areas of learning and to take learning risks without fear of failure. Our curriculum develops the skills of enquiry, creative thinking, reasoning, problem solving, information processing and evaluation across all aspects of the curriculum. Our curriculum seeks to support our pupils to develop a high regard for themselves and others, learning to control and manage their own feeling and behaviours as well as responding appropriately to the needs and feelings of others.

We seek to make our Science curriculum meaningful and relevant to all our pupils. Science teaches an understanding of the world around us. It stimulates a child's curiosity in finding out why and how things happen. It also teaches methods of enquiry and investigation.

Our aspiration and commitment is for our pupils to become independent learners, to learn through practical first-hand experiences, creative opportunities, and engagement with school visitors and via participation on school trips and visits. Our science curriculum is exciting and fun but systematically structured in order to develop the key skills our pupils need in order to achieve success.

At Golden Hill Short Stay School, the staff and children have developed a range of Science principles which we think are important in the teaching and learning for our children. These work alongside our general curriculum principles (see Curriculum Policy)

- In Science we understand and use scientific vocabulary.
- Our teachers love Science as much as we do.
- In Science we can find the answers to things we want to know.
- We add work to our Science working wall to help us learn.

- In Science we stay on task because we want to learn.
- In Science we have lots of fun.
- In Science we do lots of practical activities.
- In Science we cooperate with each other.

## **IMPLEMENTATION**

At Golden Hill School we aim to provide a broad and balanced education to all pupils. Many of our children are working below age-related expectations and it is our aim to improve their understanding and close the gap in their learning. We also recognise, and aim to make provision for, pupils who have a particular ability in Science.

Children must develop many skills to **work scientifically** in the classroom: sharing ideas, making predictions, planning investigations, observing and measuring, recording results, drawing conclusions and evaluating findings.

The Primary Science Teaching Trust gives a clear overview about how to develop the skills of working scientifically. ([www.pstt.org.uk](http://www.pstt.org.uk))

Golden Hill uses a variety of teaching styles to cater for the different learning styles and needs of pupils in Science lessons. Our principle aim is to develop children's knowledge, skills and understanding in Science.

Science is taught for 5 out of 6 half terms in every KS2 class and 4 out of 6 half terms in KS1. In KS1 Seasonal Observation is also taught throughout the year and links in with Forest Schools. Teaching may be done as a block over a few weeks or each week for the entire half term. Due to the nature of our children and their complex needs, PHSE must take priority in order to help and support them during their difficult moments. However, we aim to teach at least 6 hours of Science during each half term for both Key Stages.

As our classes are mixed age ranges and mixed ability, with children arriving and leaving at any point in the year, we teach a range of Science topics from different year groups. Topics can change depending on the children we have in school.

Children may work as a whole class, independently or in groups. They are encouraged to take responsibility for their work, supported by adults where needed.

Where possible we keep Science as practical a subject as possible. As it is generally taught in an afternoon, we have found that some of our children are less co-operative at this time. Our children also come to our school because mainstream school has not worked for them so it would be naïve to try and replicate this system here. We have found that if we plan practical activities, the children are more motivated to learn.

We use teaching assistants to provide appropriate support to individuals or to groups of pupils. Teaching assistants are viewed as an important 'asset' to the school and, as such, are appropriately involved in the delivery of the Science curriculum. Their knowledge, skills and understanding is constantly updated through involvement in school-based and LA led Inset.

All children, regardless of their race, gender, culture or ability, will have equal access to participate in the activities.

## SEND

### Suggestions from the SEND Handbook 2024

#### Primary Science

##### How can I support learners who struggle with attention?

- Create a working classroom environment that is calming and simple, e.g., clear routines, organised workspaces.
- Use preferential seating and proximity to engage all learners – have learners who struggle to concentrate at the front of the class, or plan for a teaching assistant to encourage the learner to participate and maintain focus.
- Pre-expose learners to the equipment and nature of the lesson (especially for experiments and practical lessons) to spark engagement and interest in the upcoming lesson.
- Plan movement breaks and classroom jobs (e.g., handing out materials) for individual learners.

##### How can I support learners who struggle with change and transition?

- Science doesn't always follow the same lesson format and structure, so prepare learners in advance by explaining how the lesson will run.
- Use visuals (e.g., now, next, then boards or visual timetables) to segment the lesson into manageable chunks that are achievable for the learner.
- Think about the individual learner – some learners may be highly motivated if they know something in advance of a lesson. Show them an object, or picture about the lesson, as detailed in the case study.

#### Primary Science

##### Strategies to Scaffold Learning

###### How can I support learners who struggle to access lessons because of literacy difficulties?

- Provide topical word banks and picture cards that the learner can point or refer to when explaining scientific processes.
- Ask teaching assistants to collate word/picture banks on a mini whiteboard/paper with the learner during the teaching input to support their independent learning activity.
- Scaffold learning to make it accessible for all, e.g., if writing up the method for their experiment, a learner with writing difficulties could verbally explain for you or a teaching assistant to scribe, note-take or film explaining their answers.

###### How can I support learners who struggle to access lessons because of numeracy difficulties?

- Scaffold learning to make it accessible for all, e.g., when creating data tables for an experiment, learners with numeracy difficulties could create a pictogram.
- Employ manipulatives and resources used in maths lessons to support learning in science.
- Bring abstract concepts to life through concrete resources and comparisons.

###### How can I support learners who struggle to retain vocabulary?

- Begin each lesson with a review of the vocabulary learnt in the previous lesson.
- Provide word banks that are accessible throughout the science topic. Encourage learners to tick the words they feel confident with to help target language that still needs support, e.g., when learners can independently use a word in a sentence. This could also encourage and motivate the learner to use language they have yet to use.

- Refer to language regularly during lessons and, where applicable, throughout the school day, as this will embed the vocabulary and build stronger links and associations.

###### How can I support learners who need additional time to develop conceptual understanding?

- Provide pre-teaching opportunities for learners to hear vocabulary prior to the lesson, to support their access and engagement in whole-class teaching.
- Plan small group teaching opportunities, for example whilst learners who have already met an objective are doing enrichment activities independently, dedicate time to conference with and/or provide additional learning opportunities for learners working towards the learning objective.
- Provide learners with worked examples to use as a model whilst completing independent work.



##### Progression of scientific knowledge across Key Stages: Electricity

###### Early Learning Goal:

Children know about similarities and differences in relation to pictures, objects, materials and living things.

###### Year 4:

Recognise some common conductors and insulators, and associate metals with being good conductors.

###### Year 5:

Compare and give reasons for variations in how components function including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.

## Planning

Science is a core subject in the National Curriculum, and we use the Science National Curriculum and the EYFS curriculum as the basis for implementing the statutory requirements of the programme of study for Science.

We have developed our own Scheme of Work using the Lancashire Scheme to support our planning in Science, along with activities sourced from other areas e.g. Twinkl, TES, various training ideas during CPD. Our scheme of work takes into account the needs of our children.

The headteacher and Science subject leader are responsible for monitoring the Science planning within our school.

## Assessment

Assessment has two main purposes:

- assessment of learning (also known as summative assessment);
- assessment for learning (also known as formative assessment).

### Assessment of learning (AoL) – summative assessment

Assessment of learning is any assessment that summarises where learners are at a given point in time – it provides a snapshot of what has been learned. At Golden Hill School AoL is used

appropriately, e.g. to provide a Teacher Assessment grade at the end of KS1, to provide an assessment grade at the end of each term.

### **Assessment for learning (AfL) – formative assessment**

“Assessment for learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to get to and how best to get there.”

Assessment Reform Group, 2002

At Golden Hill School we recognise that AfL lies at the heart of promoting learning and in raising standards of attainment. We further recognise that effective AfL depends crucially on actually using the information gained.

The assessment procedures within our school encompass:

- Making ongoing assessments and responding appropriately to pupils during ‘day-to-day’ teaching. These ‘immediate’ responses are mainly verbal and are not normally recorded;
- Adjusting planning and teaching within units in response to pupils’ performance;
- Use of ongoing teacher assessment in order to identify gaps in attainment on a half termly basis and using this information to grade a child’s attainment using the emerging, expected and exceeding judgements.

At the end of each unit, Children complete a formal test to find out what information they have retained. The class teacher makes a judgement on each child’s progress for that topic as emerging, expected and exceeding based on working scientifically alongside knowledge objectives using this test and the work completed throughout the unit.

### **EYFS**

Work undertaken within the Foundation Stage is guided by the requirements and recommendations set out in the EYFS curriculum. We give all the children ample opportunity to develop their understanding of Science. We aim to do this through varied activities that allow them to use, enjoy, explore, practise and talk confidently about Science.

### **ICT**

The effective use of ICT can enhance the teaching and learning of Science when used appropriately. When considering its use, we take into account the following points:

- ICT should enhance good Science teaching. It should be used in lessons only if it supports good practice in teaching Science;
- Any decision about using ICT in a particular lesson or sequence of lessons must be directly related to the teaching and learning objectives for those lessons;

- ICT should be used if the teacher and/or the children can achieve something more effectively with it than without it;

## **Resources**

There are a range of resources to support the teaching of Science across the school. Staff are encouraged to use practical and visual models to support children's learning in Science. The resources are available in the Science room.

## **Responses to Children's Work**

We recognise the importance of responding to children's work, whether orally or in writing. We seek to encourage children by acknowledging positive achievements. Children are given opportunities, and actively encouraged, to explain their work to others and to display their work when it seems appropriate. They are encouraged to value and respect the work of others. (see marking policy)

## **Recording of Science**

Each class teacher is able to decide how to record Science work, either using Floor Books or the Seesaw App, or a combination of the two. We record the Science work as a whole class and do not have individual Science books.

A floor book is a large book for recording children's science learning, individually and collaboratively.

The Seesaw App is used as an electronic version of a Floor Book.

Floor books are used as a strategy for developing and assessing children's understanding of science and can be used with any age group.

Floor books and the Seesaw App can include photographs, children's comments, drawings, tables, graphs, annotated diagrams, classification keys and writing. With the Seesaw App, videos can also be taken to demonstrate learning. Having a class record means it is easier to track changes in children's ideas and understand how children are developing their understanding of science. They can be referred to in lessons and are available for the children to pick up and read.

Adults may scribe what children have said or noticed, particularly those children who struggle with their reading and writing. This can be added to the Floor book or Seesaw App.

Learning Objectives are clearly noted to identify what has been taught/learnt during that session.

Work should be differentiated to meet the needs of the children according to the principles of working scientifically. (see separate WS progression chart)

## **IMPACT**

Our children demonstrate confidence, independence and resilience, and have a real thirst for learning in Science. They are able to use Scientific vocabulary accurately when discussing their work.

Our children are able to form meaningful relationships and work collaboratively in Science investigations.

Our children have access to a wide and varied curriculum, allowing each of them to excel as individuals and be the best they can be.

Children are engaged in their learning and are keen to talk about what they have learnt.

Teacher Assessment shows that children are making progress in their learning.