

# Curriculum Leadership – Subject Vision

## Subject / Curriculum Area: Science

### **Vision**

Our aim is to provide a Science curriculum in which all children are encouraged to make links to, explore and form questions about the world around them. These opportunities are provided through exciting and practical Science lessons which inspire curiosity. Our annual Science day offers the children a chance for hands on learning across all year groups. We believe that these opportunities will ensure that our children are confident, life-long learners who will engage with the world around them!

### **What does this subject area offer the Dovers children?**

An opportunity to use scientific thinking to help us make sense of the world around us. It encourages the children to ask questions and provides opportunities to take part in practical engaging learning opportunities.

### **How does your subject enhance the curriculum?**

It encourages the children to always ask questions.

It helps children to have a better understanding of the world around them and make contextual links.

Provides practical opportunities for children who may find other areas of the curriculum challenging.

### **What use is it to children later in life?**

Science provides an in depth understanding of how processes work and relates the abstract to everyday life events. It helps give the children the vocabulary tools to be able to ask deeper questions and evaluate what they have learnt.

### **What are the main skills and knowledge (overarching objectives) you want to be focused on?**

Children need to be able to:

- plan for greater depth children and know how to create the learning opportunities
- use Forest School sessions to enhance scientific learning
- ensure investigations are carried out each term to cover working scientifically objectives
- focus on enriching scientific vocabulary (lab coats)
- to witness the purpose of science over a period of time (e.g. planting bulbs, lifecycles)

# Curriculum Leadership

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### Intent

#### **What is being taught?**

##### EYFS:

In Early Years the children are encouraged to experience 'working scientifically' through structured play and exploration tasks. The children are provided with a carousel of targeted activities as well as having ongoing access to continuous provisions which are planned to meet the key areas relating to science within the curriculum; 'Understanding the World' and 'Health and self-care'. On a weekly basis the children are provided with access to varying science based activities introduced through structured teacher led learning or through encouragement to engage independently within the classroom environment. Activities are explained and modelled prior to independent learning to provide visuals and scaffolding to help the child's exploration meet the intended learning outcome. The children's scientific knowledge will be expanded throughout the year to cover similarities and differences, environmental features, observations of animals and plants, staying healthy / exercising and personal hygiene. Throughout the year these key scientific concepts will be taught within the termly topic, focused upon investigative and question based tasks. For example in the topic of 'Once upon a time' the children will look at the suitability of different materials to make the Three Little pigs' houses. In addition to classroom activities EYFS children have access to weekly forest school sessions, whereby further investigations and practical aspects of science, such as exploring the changes in nature as a result of the seasons, can take place.

##### Key stage 1:

The continuous science provision beginning in EYFS will follow through to Year 1 in a gradually phased process whereby the children can continue to explore and investigate scientific concepts through planned independent learning. The Year One and Two science curriculum is taught through half termly science blocks that embed both topic and working scientifically skills. In Spring Term 1 science is taught weekly within the allocated Forest school slots as the forest school area is given time to rest. The long term overview dictates when each topic and working scientifically skill is covered in relation to each termly/half termly theme. It also allows for appropriate skills from previous years to be revisited and planned into each part of the curriculum as it is taught to support metacognition. Science is further taught through cross curricular activities such as measurement in Maths, to help make scientific skills relevant to the children's daily lives and encourage them to discover links. Opportunities for scientific learning in the wider school environment include weekly forest school lessons where children are encouraged to explore and investigate using key working scientifically skills and practical lessons involving seasonal changes, animals, habitats and plants. As a school we organise a yearly science week, specifically focused on covering the working scientifically skills. Every year each year group takes on the care of animals, including chicks, butterflies and tadpoles to demonstrate lifecycles in a relevant and visual context as well as planting bulbs to observe the growth process.

#### **How does it cater for PP/SEND and higher attainers?**

As a core subject science is an interesting entity as it allows children who may struggle with more academic learning processes such as reading and writing, to take part in more practical, visual and explorative styles. These are shown to better engage them as they feel more confident in their abilities, able to ask questions and verbalise their findings creating more interest and leading to better progressive outcomes. SEN children are supported through visuals, practical activity and investigations as well as modelling of the process. PP children are supported by allowing them opportunities to create links and experience worldly knowledge they may be lacking through exploration. Both groups are also offered pre-teaching where necessary for both discrete and cross curricular science concepts. Higher attaining children are challenged through higher level questioning, richer vocabulary, encouraging deeper thinking and explanation as well as encouraging consistent use of working scientifically skills such as predictions.

## **Implementation**

In EYFS aspects of science are taught through the areas of learning 'Understanding the world' and 'Health and social care'. In Key Stage One the science curriculum is split into Year One and Year Two topics. Both Year groups in KS1 are expected to cover the working scientifically statements additionally throughout the year through investigation, practical science and exploration. Teachers have been provided with skills and knowledge documents that break down the progression of skills and knowledge in science across all three years. This allows the teachers to understand the start and end points of the journey to meet end of year expectations in Science. This is further broken down through the long term overview, where all topic and working scientifically skills are broken down to show termly curriculum progression as well as where prior knowledge can be applied and revisited. Furthermore the prepared scheme of work used to inform the application of working scientifically skills into planned investigations, is broken down within this document to show when it can be used to plan for investigations within each term. The teaching of science is encouraged to be integrated within cross curricular learning in subjects such as maths, for example investigating measurement using working scientifically skills. Through every year group the learning is differentiated with further scaffolds, visual and modelled support for SEN and challenge such as higher level questioning and reasoned answers for those that are demonstrating a deeper understanding of the skill being taught. In Early Years science provision is made available through continuous provision activities and structured teacher led work relating to the termly topic. In KS1 science is taught in half termly blocks of 3-4 lessons. Each science topic and working scientifically is planned to best fit in with the given theme. During Spring 1 Science is taught weekly within the forest school slot whilst it is rested. Science data is reviewed termly through target tracker alongside other core subjects. This data is then formatted into a report to monitor progress across all areas and any gaps that may be prominent from topics or working scientifically that have already been covered are accounted for. Further monitoring of the science curriculum across all year groups is completed termly through lesson observations, book looks and planning monitoring. Pupil voice is used as a monitoring activity to ensure that what the children are learning is embedded, they are using appropriate vocabulary and show key areas that may need revisiting. Information from science courses and network meetings is shared in staff meetings and information from monitoring is shared with SLT.