

Science One Page Overview

Intent:

Live:



Children will have the scientific knowledge and a secure understanding of the scientific method to be able to hypothesize and weigh up truth claims and make sense of the world around them.

Love:

Children will develop a sense of deep curiosity and love to investigate and deepen their understanding of how the physical world works.



Learn:



Children will learn to become critical thinkers and approach truth claims with an understanding of the different variables and biases that can influence results.

Due to the high levels of deprivation and unemployment within the ward we serve (we have an Income Deprivation Affecting Children Figure of 96.7%) OAH have developed a science curriculum that inspires a deep love of science and also raises children's aspirations and understanding and awareness of the different pathways that can lead to a career in science.

- Every child receives a minimum of 1 hour high quality science teaching per week.
- Science is taught accurately and systematically both within and across the each year group so that new knowledge is built upon the secure foundation of established understanding.
- Science Teaching is underpinned by pedagogical knowledge of how teacher questioning can guide learners into the relational and extended abstract realms of the SOLO Taxonomy.
- For pupils understanding of the role science plays in the workplace and the world around them through partnering with Birmingham University, The Scholars Program and Engineering Companies.
- To ensure continuous assessment, intervention and development within science through the use of pupil target sheets.
- To ensure developmental feedback is consistently high quality throughout the academy and extends and develops pupils ability to link new knowledge into existing understanding through SOLO Taxonomy question stem stickers.
- To develop an investigation-rich science curriculum which allows pupils to apply their theoretical understanding to a range of experiments and understand how difference variables can affect their results.

'Every Child is an Artist' Programme.

Specialist music technologists deliver high quality teaching covering the science of sound and the development of amplification technology.

Implement:

Coverage through Science curriculum & extra-curricular:

- Class teachers ensure that every pupils receives at least one hour of high quality science teaching every week.
- A whole school science overview is followed by all your groups in order to ensure that the national curriculum is covered thoroughly and systematically throughout the academy and that knowledge and understand that has been acquired in previous year groups is deepened and built upon in subsequent ones.
- The Plan Bee schemes of work and resources and CGP books are available to all teachers to assist with planning and subject knowledge. Teachers are also encouraged to develop bespoke lessons in science based on their deep understanding of the curriculum and the specific needs of their individual classes.
- Knowledge Organisers for each key subject area within the science curriculum are used to help pupils understand and retain the key concepts and vocabulary from each unit.
- Partnerships have been developed with the chemistry and astrophysics departments of Warwick University, Engineers without Borders and Rolls Royce Aerospace Engineers to offer pupils opportunities to take part in a wide range of workshops that will both inspire and inform our pupils with regards to the different pathways that can lead to a career in science.
- The *Root to Fruits* program works with pupils across the school enriching the science curriculum through allowing pupils to gain and apply scientific understanding through horticulture, covering topics including living things and their habitats, germination and growth, the human body and seasonal changes. This specifically targets our pupils premium and SEND children.
- The Scholars Programme offers our more able year 5 pupils the opportunity to work with University researchers to complete a junior PhD on biomedical engineering. This both develops their skills in scientific enquiry and gives them the experience of working in a university setting for workshops and a graduation ceremony, thus raising their aspirations to go onto further education.
- Partnerships have been established with King Edwards Grammar schools, allowing some of our pupils to interact with their science departments through science competitions.
- Hobmoor Science Week takes place every January to inspire our pupils to engage more deeply with science and raise the profile of the subject.

Assessment: Science Lessons are evidence in Science books every week and science trackers are regularly up dated for each pupil to assess their understanding against the learning objectives.

Monitoring:

Science book looks to ensure high quality teaching is taking place in every year group every week and to ensure systematic coverage of the science curriculum.

Drop in sessions and lesson observations.

Our most recent Academy Review closely scrutinized science (November 2019).

Impact:

Data (2018/19):

93% of pupils had met the expected standard for science by the end of KS2

100% of our pupils enrolled in The Scholars Program passed and 67% were awarded a 1st or 2:1

27% of pupils across the academy achieved greater depth in science in July 2019.

Many of our SEND children have gained confidence and higher self-esteem as a result of learning in the *Roots to Fruits* program which allows them to learn in a very practical way.

Teacher CPD/monitoring (2018/19):

CPD staff inset session on using the SOLO taxonomy within science delivered last January.

Collaborative planning and teaching of science lessons developed between Teach First trainees and Science Lead.

Community/families: Hub

Within our Power project homework there are many scientific tasks and investigations which encourage pupils to work alongside their parents or other members of their community to develop their science skills together.

Current Priorities and Next Steps

Continue to develop an investigation rich curriculum that allows all pupils in all year groups to deepen their understanding of the scientific enquiry.