NOVAC (Note of visit and contact)

School:	Hunslet Carr Primary School	**Date:**	Wednesday 12 May 2021
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Visit Details:	Science monitoring – involving headteacher, science subject leaders, advisor (JR) and consultant (CD) in a collaborative learning process for all		

Purpose of the visit:

The school has focussed on teaching and learning since the last inspection in March 2018. The Ofsted report described science in the following statement:
"*The quality of pupils' work across the full range of subjects is not consistently of a good standard. Teachers do not provide sufficient opportunities for the pupils to gain the necessary skills and understanding in subjects such as (history, geography and) science.*"

Summary of the visit:

This section will follow the structure of the monitoring and triangulation process as it happened.

Top-level view

This session provided an opportunity to outline key aspects of science.

- Science is led by two subject leaders: Nicole Ford (Year 2 teacher) and Emma Dennison (Year 3 teacher) and supported by the wider curriculum leader (Martin Farley). One is an experienced teacher with a science background and she is fulfilling a mentor role at the moment.
- The school website sets out the ethos, stating '*We give science the prominence it requires*.' The school has high expectations for its pupils and this includes developing aspirations to be the scientists and engineers of the future. The school is developing pupils' understanding of the world and the vocabulary required for future success. They are also looking to include successful school alumni to motivate pupils. Special topic books have been purchased with a header to show the specific subject area being taught. This is also developed by highlighting biology, chemistry and physics content and the use of special symbols to show the type of scientific enquiry taking place in lessons.

Intent

- The school is using a specific format to develop the profile and prominence of science starting with the question 'Where is the science around us?' so that pupils see their learning in the subject as relevant to their lives and their community.

Implementation

- The school is committed to developing outdoor learning and has created a link with the local community allotment, created raised beds and insists that all teachers include outdoor learning in their planning. The subject leaders are clear about the status of science as a core subject and pupils' entitlement to a quality curriculum. They support teachers with planning when needed.
- The subject leaders are clear about the statutory content of the national curriculum and also make good use of the non-statutory guidance to further enhance teaching. The leaders are also aware of the

requirement to adequately cover both the subject content (knowledge) and working scientifically (skills) content of the national curriculum.

- The school had previously used the 'Switched-on Science' scheme but found that it didn't stretch pupils to deepen their knowledge. Teachers use the 'S' plan model, the same way that it is used in other subjects, to plan a sequence of lessons. Anchor charts help with shaping the specific thinking and provide hooks for learning.
- The subject leaders have also produced resources to support learning such as topic table mats (these are laminated and sent home to literally use as a table mat). The use of floor books is being developed through the school. Having been embedded in Early Years and KS1, this practice is now being used in KS2. It provides a way to capture learning evidence, in a practical resource that pupils can then access to support their learning.
- The school is working to develop pupils' cultural (science) capital by ensuring that concrete, pictorial and abstract approaches are used. The school has also developed some creative strategies to enthuse and stimulate including 'science selfies' and 'unexpected science' to highlight real-life science, the use of the allotment and sending learning packs home.

Impact

- This is the particular area of the EIF leaders will need to consider moving forward.

Lesson visits and learning walk

Year 6: Pupils were involved in a lesson on light and engaged in a practical investigation with mirrors. There was some teacher-led input with content on the interactive whiteboard and teaching assistant deployed to support specific pupils. Some pupils had received pre-teaching and had sentence stems to support the correct use of vocabulary in full sentences. Pupils were using a 'stand up/sit down' technique to show that they either agreed or disagreed with an explanation from their talk partner.

Year 5: Pupils were involved in a lesson on materials, focussing on subject content that had been delivered during lockdown, but required consolidation. Floor books were accessible and content was being delivered via the interactive whiteboard. Teaching in one class appeared to be slow and static, pupils appeared to have been sitting for a while. The lesson appeared to try to cover a number of properties of materials including magnetism and permeability, with questioning that did not maintain the pace of learning. The headteacher and subject leaders felt that the observations may not have been typical of the normal teaching in this particular class and are aware of the action required to support the teacher in question.

Reception: Pupils were engaged in a range of learning in areas of provision, both inside and outside. There was a teacher-led activity looking at the life cycle of a frog with clear content, subject knowledge and pupil engagement. Areas of provision included learning about plants with pupils observing and investigating real plants inside and via the garden centre in the outdoor provision. One child with limited language could show that the butterfly lifecycle pictures on display were in the wrong order. She pointed to the misplaced picture and moved it to the correct place. She could name the caterpillars and butterfly. Three pupils with complex SEND were outside with their 1:1 support adults and they were accessing the provision successfully at the correct level for their understanding and needs. A group of children were highly engaged in planting seeds with adult support. The adult was asking the children about the process and about what the seed needs to grow, she skilfully guided their thinking and moved the learning on.

Year 2: Pupils were involved in a lesson on plants and had been asked to think about their prior learning on the subject. Vocabulary was being used correctly and modelled by the teacher and linked to the use of senses. Pupils were engaged in a practical activity to dissect a flower. Because of the overall improvement in behaviour in the past year or two, this was a calm and active lesson, with pupils taking great care over a spider found in the soil. The teacher asked questions and added vocabulary to the board (modelling phonics and handwriting in the process) expecting the use of full sentences from pupils. The focus was on the key content of the lesson but a comment that 'there's honey in the flower' was acknowledged and recorded to be returned to later and any misconceptions covered.

Year 1: Pupils were involved in a lesson on seeds and included a think, pair, share approach building upon existing knowledge. Pupils were encouraged to make predictions and share ideas about what the seeds needed to grow healthily. The children were drawing and labelling different kinds of seeds. One child with SEND was mark-making on a larger piece of paper and the adult labelled using his words.

Year 3: Pupils were involved in a lesson on materials and particular properties eg opaque and transparent. Reference were made to real life, but a selection of materials could possibly have been made available for easily reference. Inclusion was evident and pupils were involved within the classroom with support from a HLTA. One child was transitioning from the provision house with the support from a member of staff in the provision. She was successfully monitoring his progress from a small distance, then closing in on him when he needed help or redirection.

Year 4: Pupils were involved in applying their writing to their science work, applying basic skills to the national curriculum content. The teaching assistant was deployed effectively and the teacher was adept in drawing-out thinking from pupils, including those potentially reluctant to contribute. The pupils appeared to be sufficiently independent in their writing. Using such basic skills to access and record their learning automatically is something that might not have been possible in the past.

Positive observations: most staff are non-specialists but appeared to have the necessary level of subject knowledge for their particular year group. Throughout the school, there was a calm atmosphere in classes, pupils engaged in learning and effective inclusion was evident (pupils requiring learning or emotional support were in class and they were not immediately obvious).

Discussion with subject leaders

The subject leaders were asked to relate their work, their knowledge of the school and what had been observed throughout the day to the ethos and intent of the school, referencing the initial conversations of the day around the school website and intent, implementation and impact. Positive observations from the discussion included the school's ethos, significant improvements in pupils' behaviour leading to the development of pupils' positive and enthusiastic attitudes to learning in science. Inclusion was evident throughout the visit, with vulnerable pupils being supported both practically and sympathetically within the classroom. The school is setting high expectations and developing an interactive learning environment, both inside and outdoors. The subject leaders are clear about the core nature of science in the curriculum and are working to develop consistency and progression through careful sequencing of learning; while being aware of and empathetic towards staff needs. The subject leaders are aware of the importance of meaningful assessment and develop teachers' use of assessment for learning (AfL) as well as utilising support tools such as the Teacher Assessment in Primary Science (TAPS) and Pan-London Assessment Network (PLAN) resources.
The school endeavours to make all staff aware of the context of the school and this involves induction for new staff including a walk around the local community.

Work scrutiny

A selection of pupils' work was considered alongside the subject leaders including pupil's work books and class floor books. Floor books are more established in Early Years and KS1, but are now being used in KS2. Floor books are proving useful where pupils may not be able to write or express their learning but can through photographs, post-it notes and adult annotations. Pupil books use a consistent system by identifying the specific subject being covered and visual symbols for specific areas of scientific enquiry are used well. The use of a topic book also allows cross-curricular work to be included. A development point from the previous inspection is also being addressed, through giving greater opportunities for pupils to develop extended writing across the curriculum. It was also noted that handwriting and presentation had improved greatly. A well balanced mixture of work sheets, pre-made tables, independent diagram drawing and writing evidence was evident.

Discussion with teachers

Discussions took place with Year 1, Year 4 and Year 6 teachers. The teachers were asked to sum-up their experience of science in terms of their approach to teaching science, subject knowledge and CPD needs. They were enthusiastic about science and felt well-supported by approachable subject leaders. The teachers were honest in describing their level of confidence in teaching science and ongoing areas to develop. For example, the Year 6 teacher felt that evolution was an area that had been tricky and needs to be developed. The teachers could describe their particular focus areas of the curriculum and were aware of the way in which content is taught and revisited with reference to the 'S' plans used.

Discussion with pupils

Discussions took place with pupils from Year 1, Year 2, Year 3, Year 4 and Year 6. They were lively and enthusiastic in talking about science; when asked to talk about the lessons that had been observed that day.
KS1 children (both lowest 20%) could add simple answers to direct questions. A child in Year 2 used the phrase "micro habitat" correctly when he was referring back to some learning on mini beasts.
Year 3 pupils were able to talk about the parts of a plant as well as their roles eg "roots hold the plant in place and suck up nutrients to help it grow bigger".
Year 4 pupils could describe their understanding of states of matter.
Year 6 pupils had retained key information regarding light travelling in straight lines.
Pupils were asked about their understanding of science in the real world. Some were able to make some specific references eg weather, CO_2 in fizzy drinks. Some pupils were able to describe a scientist and even name notable examples eg Albert Einstein. Year 6 pupils, who had requested to be involved, were noticeably quiet during the process so this might be an area to develop for future pupil discussions.

A separate adult discussion followed, about how much keener the younger children were to talk about their learning with confidence and clear knowledge and the oldest children were more reserved. This could be evidence to show how the improved teaching of science is having such a positive impact on more effective learning skills and knowledge. Especially in those children who are accessing better quality science lessons. Now teachers produce tighter curriculum planning, with the help of termly topic booklets made by the Science leader, which leads to improved delivery and deepening of science learning.

Feedback to school governors

The Chair of Governors and Assistant Chair joined the feedback meeting. Both commented positively on the progress made in science and the positive attitudes to the subject from both children and adults.

Recommendations/agreed actions

- Ensure that the purpose of study and aims of the science national curriculum are prominent in the schools ethos and intent for science including the school website.
- Develop teacher modelling around the sequencing of work, so that pupils develop their understanding and ability to describe what they are learning and why. Over-emphasising the scientific elements of the lesson focus will help children to understand and embed such content, knowledge and skills.
- Meaningful intent and implementation were fully evident throughout the day, with natural responses from children. The science leaders intend to develop assessment, recording and tracking systems to show the impact of high quality science teaching and learning.
- Subject leaders to utilise CLEAPSS support and resources (information for primary teachers of science, technology, art and design around health and safety). This was not specifically discussed during the day but is an important area of which subject leaders should be aware.
- The school might look to develop pupils' learning and awareness of notable scientists, both past and present. This could also incorporate people in the local community who use science in their work, local firms, school alumni etc.
- Consider how to include plenty of opportunities for the older children to articulate their understanding of science in lessons and in pupil voice sessions. Do any cohorts need some gap filling in their knowledge, before transition to high school?

Distribution list

Headteacher
Chair of Governors