St John the Baptist – Science Report to the Governing Body 2022

Science Overview

At St. John the Baptist Catholic Primary School, it is our intention to equip children with the foundations for understanding the world through a scientific lens. Pupils are taught units of work in the specific disciplines of biology, chemistry and physics.

The knowledge content is organised in a coherent way, ensuring learning builds from year to year. We aim to engage children as learners at many levels through linking ideas with practical experience, whilst helping children to learn to question and discuss scientific issues that may affect their own lives.

New Science scheme

Upon reflection of our previous scheme 'Engaging Science', we found that there were gaps in the children's understanding. Elements of the scheme presented a curriculum that made assumptions about the children's life experiences and cultural capital. We researched to find a scheme that was structured, consistent and progressive and found that 'Primary Knowledge Curriculum' delivered all of these aspects. This year the focus of Science has been to implement the new scheme and monitor the impact.

The focus of 2022-2023 will be to continue to monitor this impact and to analyse data from the new assessment tool 'FFT aspire'.

Opinions generated from staff interviews offered an insight into the impact of the new 'PKC' scheme of Science at St. John's:

How has this scheme changed your delivery of Science at St John's?

"I feel much more confident as the scheme is very structured and the progression of ideas and skills is clear."

"The objectives are clear and it provides more time to spend preparing engaging lessons."

"It is useful to have the vocabulary set out so you know the pitch is correct and you can revisit words etc. throughout the topic."

"It has made science teaching consistent across the school, but also when people are sharing classes with other teachers or students. It ensures that science is progressive and pitched at the correct level, focusing on particular skills."

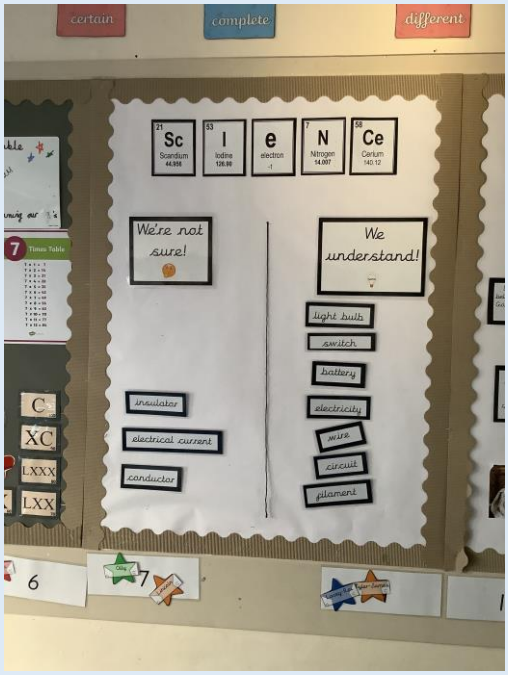
Have there been any changes in the children's attitudes towards science since the new scheme has been put in place?

"I think they are more connected to the teaching. There are no presumptions made that the children have been to a beach before etc. like in the previous scheme."

"There is definitely an improvement in their use of vocabulary"

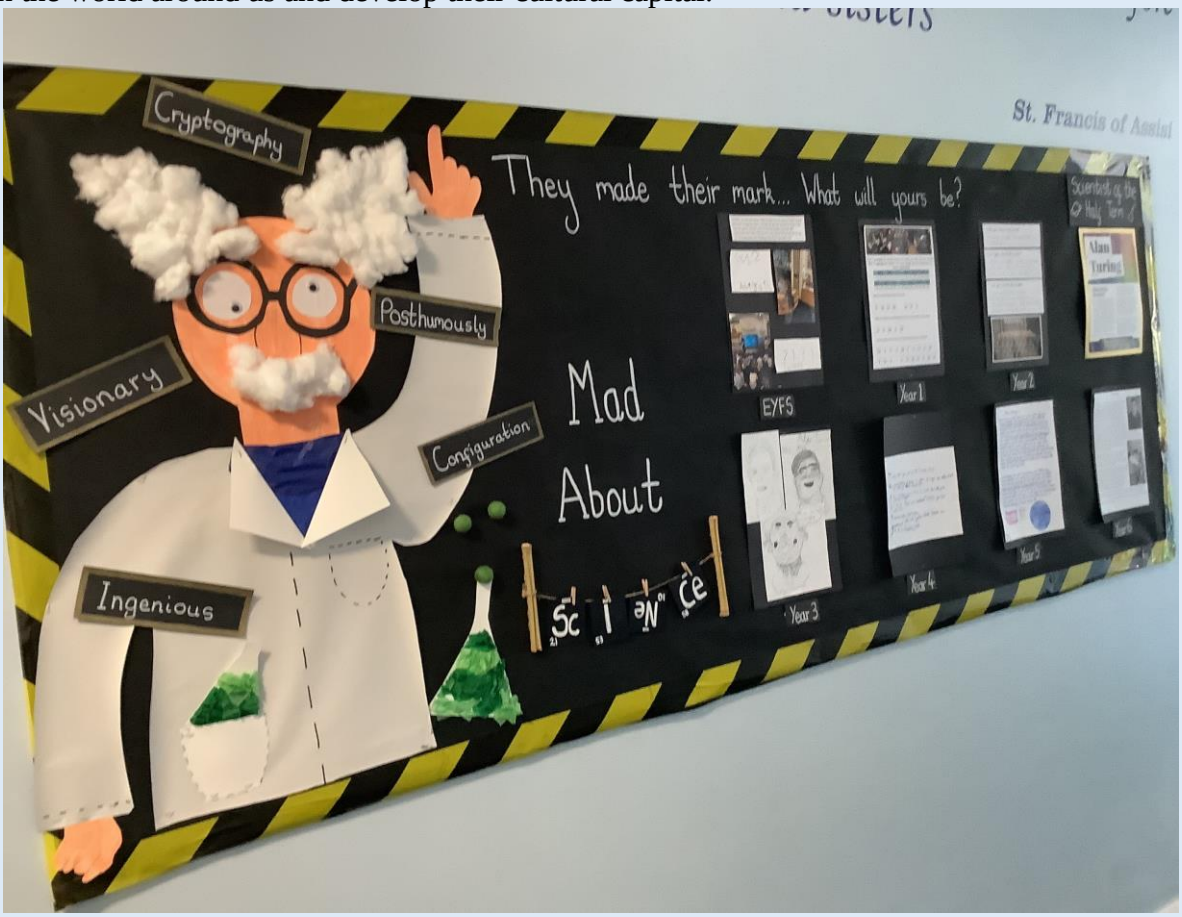
Classroom Science Displays

An area of concern at the start of the year was communication and language skills. In order to improve this, staff created a 'science working wall' in each classroom. This display highlighted the unit of study, objectives and a vocabulary wall so they were visible to children all day every day and supported retrieval. The vocabulary wall was an interactive aspect that involved the children assessing their own understanding and moving words from one side to another once, the vocabulary was imbedded by most of the class. There was also a vocabulary focus included on the new 'Mad about Science' display board.

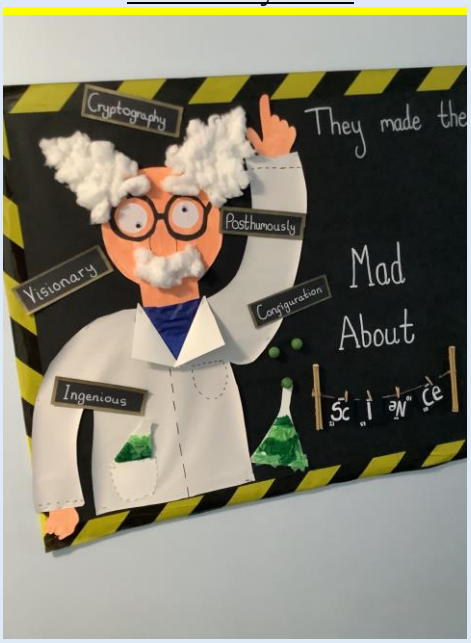


Mad About Science Display

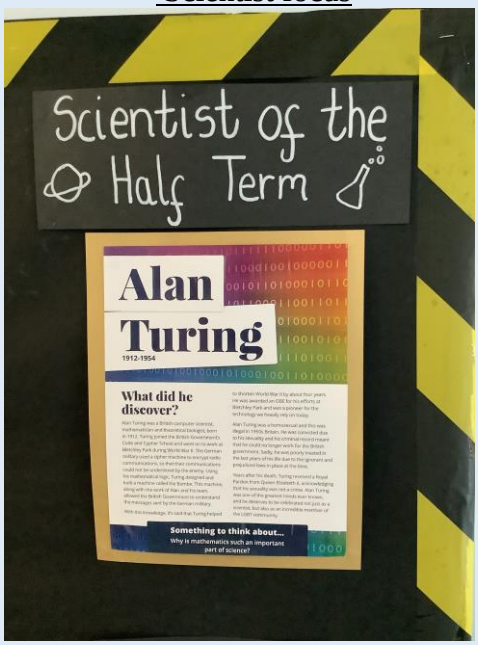
This 'working display' is updated each half term. The purpose of the display is to develop children's knowledge, vocabulary and understanding of theory. There is a focus on one scientist (who has made a significant contribution) each half term. Teachers set a homework/lesson focused on this Scientist at the start of each half term and display any work generated. The children are as involved as possible in displaying their work and there are two members of each class who have the role of 'Science working wall monitors' - their job is to identify the new scientist at the start of each half term and select and display work. The aim of this implementation is to enhance children's experiences and general knowledge of science that has made an impact in the world around us and develop their cultural capital.



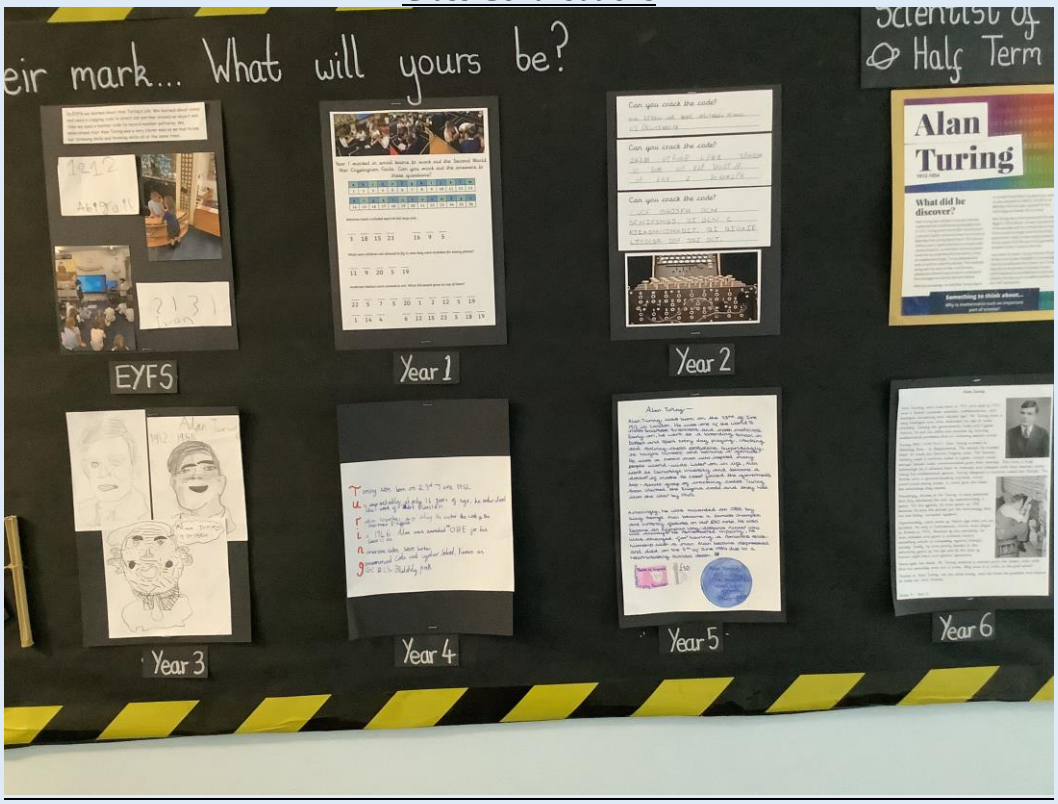
Vocabulary focus



Scientist focus



Class Contributions



Book Monitoring

During Autumn term book monitoring there were some questions raised.

Do the children get the opportunity to be free with the exploration of topics? Do they get sessions where they can research/use equipment and see what they can find out?
Feedback - could children provide peer feedback from time to time so it is not just ticks as feedback and without putting more pressure on teachers?
Do the activities differ - Are emerging pupils supported? Are exceeding pupils challenged?
Are we teaching and completing a unit a half term and teaching once a week? (Legally we are required to ensure children get this. Science is a core subject.)
Is there evidence of retrieval?
Could year groups be put on the front cover to make it clear to see which year group the child is from?

Learning Walk Observations

Strengths identified:

- Use of the vocabulary wall - this is a 'working wall' and it was nice to see vocabulary from this initiative used during the lessons and the wall been referred to.
- Really nice idea in one class where a snippet of vocab from the knowledge organiser was included on the lesson objective and children were able to refer to this throughout the lesson.
- Good examples of where the science fits in to everyday life - we need to make every lesson we teach meaningful.
- Fantastic questioning related to vocab and terminology
- Good use of practical resources to explain scientific concepts

Some areas for development for next learning walk observations:

- volume of work (not taught every week in some year groups) and use of an initial assessment which wasn't present in some books.

Science Leaders Support Group

This course involved exploring a range of strategies to audit and lead science in our school, developing my role more fully by being able to identify and promote effective primary science. Tasks involved setting and managing processes, leading change in school to support delivery of the new primary science curriculum and also sharing good practice for example free resources; https://www.ogdentrust.com/ , knowledge Matrices from: http://www.planassessmet.com/shop and the useful website https://explorify.uk.

Throughout the course of the year, I virtually met with other science leads and experts to learn more about planning practical approaches to teach all three strands of science develop my understanding of how to identify and address gaps in children's science knowledge, skills & understanding and also highlighted common misconceptions and consider strategies for dealing with them. Throughout the duration of this course, many changes were implemented such as a change in science scheme, assessment and also in delivery and expectations of the subject e.g. vocabulary boards and retrieval exercises at the start of lessons. This group was effective in providing opportunities for collaborative leadership and sharing good practice.

Science Data

Part of the development plan involved a change in how assessments were recorded. As part of a whole school initiative FFT Aspire was brought in. Teachers were asked to input data for the last unit of work completed. Based on data input classes averaged to achieve around 80% on track;

EYFS (understanding of the world): 76%
Y1: 81%
Y2: 76%
Y3: 83%
Y4: 82%
Y5: 82%
Y6: 83%

Percentages were in line with national data of 79% of children performing to be 'on track'. Analysis of data using this new assessment tool will be a focus for next year's science action plan.

Newsletter – Science Superstars

Teachers were asked to offer a contribution to the weekly newsletter and also tweet about the science learning that was taking place during their rostered week. The purpose of this was to increase the presence of science online and in the school newsletter.

(Please see below for some extracts)

Science Superstars

This half term, we have been learning all about sound in Year 4. We have explored how to change the pitch and volume of a sound and how sound travels. We made our own string telephones and we could hear each other from a very long way away!

Science Superstars

Year 6 have been learning all about Light. We have used electrical circuits to power bulbs, as well as learning how light travels, how our eye detects light and how prisms refract light.

Science Superstars

EYFS have enjoyed planting and growing bean plants this week. They enjoyed learning about the life cycle of the bean plant and we are observing our own plants growing. It is a big job as we have to make sure they are in a warm spot and remember to water them every day!

We also conducted a science experiment focused on 'dissolving'. We used jelly beans and a variety of different liquids to dissolve the jelly beans. We observedthe process and found that water was the winner!