Science Policy- 2022

Intent

At Estcourt we provide, encourage and celebrate enquiry and curiosity. Through this use of working scientifically and solid knowledge children leave the academy as competent scientists who:

- explore their own ideas in a range of ways
- Are knowledgeable and prepared ready for their next steps.

We firmly believe that all children should reach their full potential regardless of starting points and other potential barriers. Science has been carefully developed to promote equity.

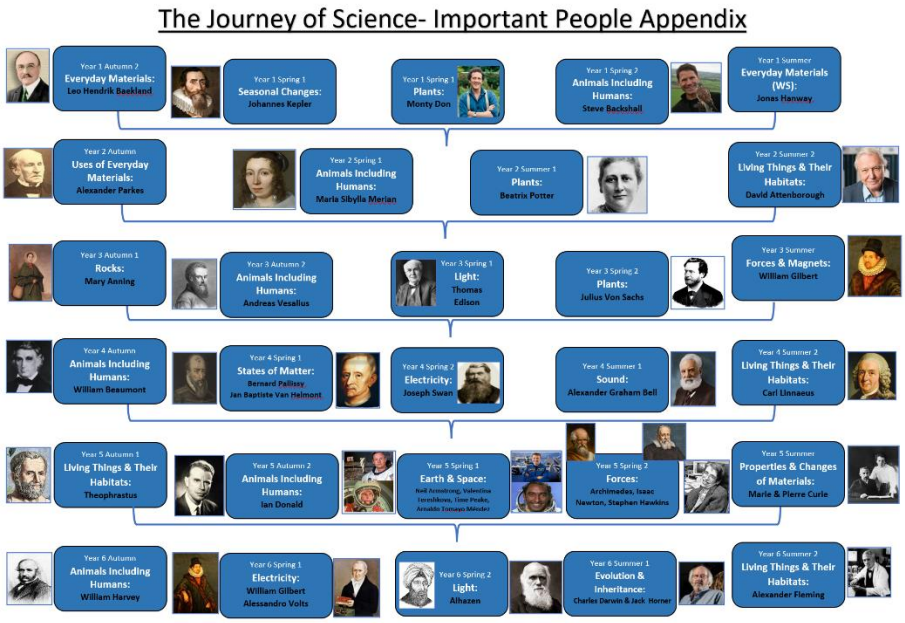
Implementation

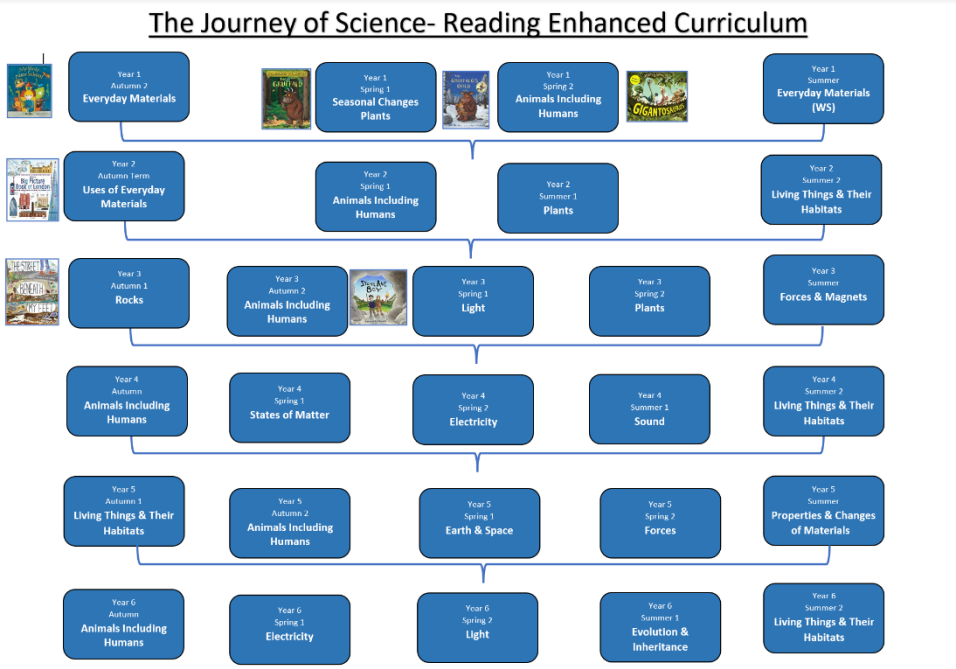
Our science curriculum encourages pupils to question the world around them and promotes excitement and curiosity. We aim to develop pupils' minds, and scientific enquiry. Through practical experiences, they build up theories and predictions and from their experiences, we encourage them to have the confidence to test and challenge scientific ideas. There is also emphasis on scientific developments and how these can and have changed the world we live in.

The Science curriculum provides experiences and knowledge of the physical and natural world. This is gained through:

- observing
- pattern seeking
- identifying
- classifying and grouping
- testing
- using scientific research sources.

The National Curriculum underpins our long-term plan and learning is sequential and progressive.





Pupils learn about how to test their ideas through investigations and form conclusions. Pupils also learn about influential people and how their ideas, or work, have led to the knowledge and concepts that pupils learn. These may be scientists, explorers or conservationists. By learning about these people, pupils can see how the ideas about the world in which we live has been created.

Each lesson begins with a 'Big Question' to explore and discuss, which are directly linked to the National Curriculum. Sessions are planned in a sequential way showing progression and building upon previous content or concepts.

Each session aims to include hands on learning, giving ample opportunities for children to explore, this is to encourage long term memory retention of key concepts and knowledge. Big Questions are posed for children to consider, applying their prior knowledge and discussion with their peers using oracy skills. This same question is reflected on at the end of the lesson to see how the children's views may have changed based upon the new content they have now learnt.

This teaching provides a foundation and knowledge for understanding the world, whilst providing the skills for further exploration. Our engagement through home learning and the local environment ensures children learn through a varied and first-hand experiences in the world around them. Children understand the variety of science opportunities within the working world with our whole school assemblies and links with local companies. Home exploration is encouraged, with the academy providing at home learning challenges.

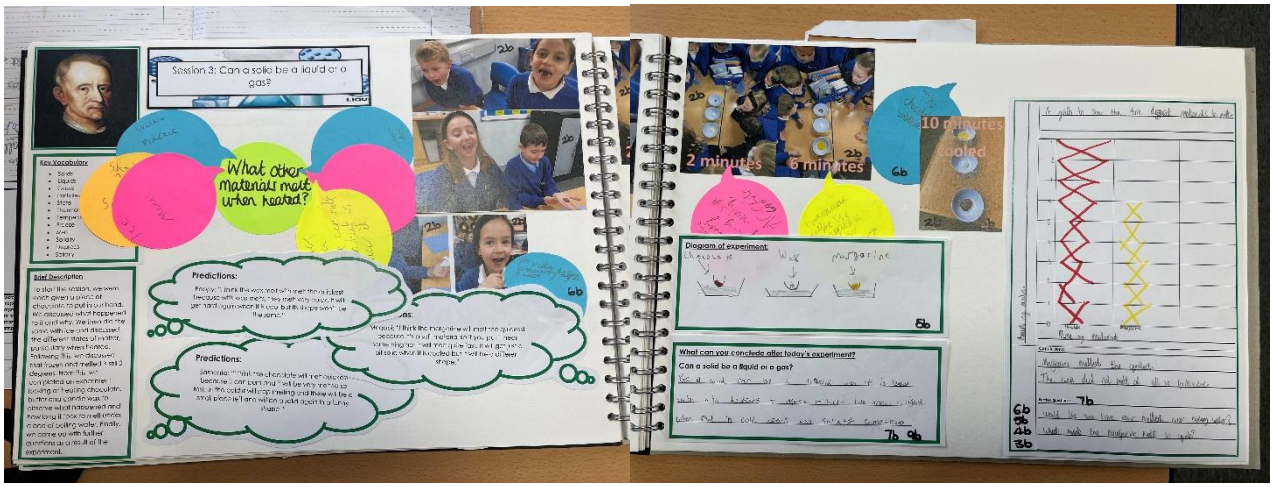
In EYFS, pupils explore the world around them. They identify, discuss and recognise changes and patterns amongst living things and their environment. Through continuous provision, pupils have access to scientific equipment. Equipment such as magnets and magnifying glasses encourage first hand exploration and discussion. Pupils in EYFS also receive an explicit taught science lesson which sit within their topic/theme. They are exposed to the foundations of scientific concepts. Pupils take part in simple investigations. This equips them with the introductory skills and knowledge for their science journey ahead.

Evidencing science

Each lesson journey is displayed in class floor books in years 1 to 5. These books document the ideas, knowledge and observation of the children in the class. Each book contains the following information:

- Big question
- Key vocabulary
- Lesson description

- Links to significant scientific person
- Links to Reading Enhanced book
- Predictions from the children
- Working scientifically
- Results and final ideas



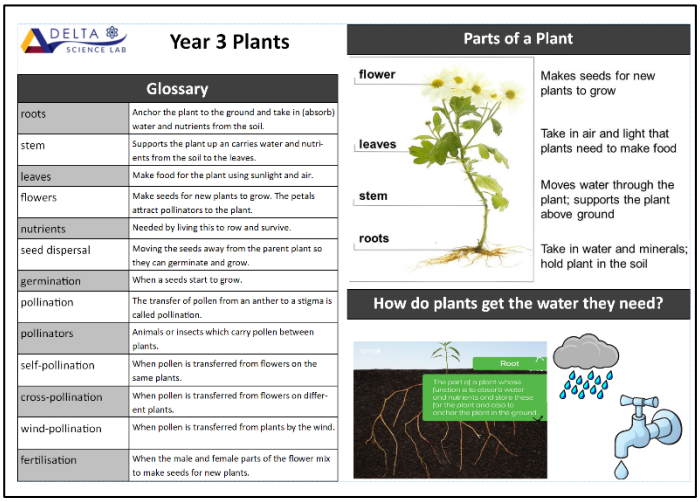
Year 6 display their work in Delta green exercise books which are differentiated where necessary. Each piece of work should include the following:

- Date
- Takeaway
- Differentiated activity (where appropriate)

Knowledge organisers

Knowledge organisers are a key tool used in our lessons to help children retain what they have learnt and support their ideas. KO present key words and information whilst also providing children with prior learning.

"Knowing more, remembering more"



DELTA SCIENCE LAB

Year 3 Plants

Glossary	
roots	Anchor the plant to the ground and take in (absorb) water and nutrients from the soil.
stem	Supports the plant up an carries water and nutrients from the soil to the leaves.
leaves	Make food for the plant using sunlight and air.
flowers	Make seeds for new plants to grow. The petals attract pollinators to the plant.
nutrients	Needed by living this to row and survive.
seed dispersal	Moving the seeds away from the parent plant so they can germinate and grow.
germination	When a seeds start to grow.
pollination	The transfer of pollen from an anther to a stigma is called pollination.
pollinators	Animals or insects which carry pollen between plants.
self-pollination	When pollen is transferred from flowers on the same plants.
cross-pollination	When pollen is transferred from flowers on different plants.
wind-pollination	When pollen is transferred from plants by the wind.
fertilisation	When the male and female parts of the flower mix to make seeds for new plants.

Parts of a Plant

flower — Makes seeds for new plants to grow

leaves — Take in air and light that plants need to make food

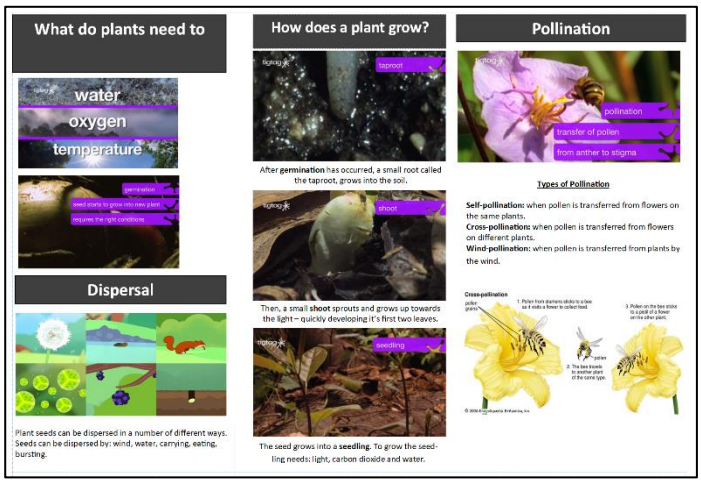
stem — Moves water through the plant; supports the plant above ground

roots — Take in water and minerals; hold plant in the soil

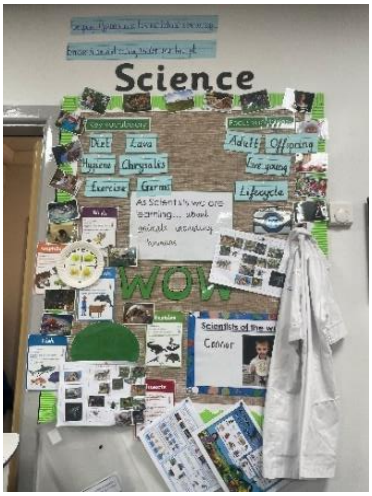
How do plants get the water they need?

Root

Retention of learning is an important aspect of our curriculum and as such key principles have been put in place to help. Pupil voice is one of the tools used to get feedback from the children about their learning and their thoughts about the subject. Children are encouraged to discuss their learning and their thoughts on how science looks in our academy. Each lesson starts with a re-cap of the previous lesson, with reference to prior learning in younger years when appropriate. This also links with looking at their floor book from the previous week to share their work and recap on the learning. Each class has a "Ask me a question" sheet pinned to their doors and adults passing are encouraged to ask children about their learning. Teachers will add a question onto the door which links with the previous learning.

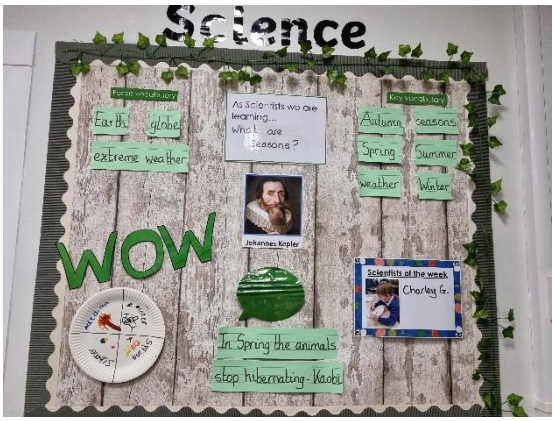


Displays are a key tool for helping to retain information. Each classroom follows the same basis to their displays which include:

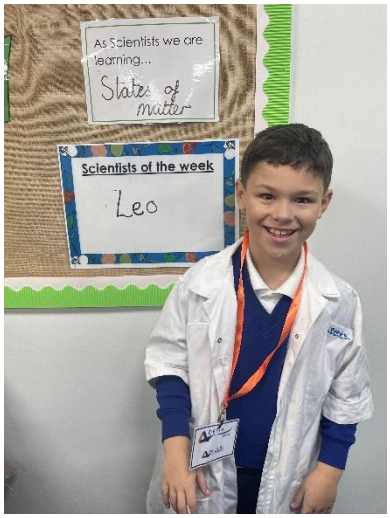


- Key vocabulary from the unit
- Focused vocabulary which is changed for each lesson.
- Quote bubble from someone in the class
- Scientist of the week
- Key information which is built up over the course of the topic.

Our displays updated regularly, building on the learning each lesson.



At Estcourt, we encourage the love of science with "*Scientist of the week*". Each lesson, a different child is chosen who have shown a keen attitude towards their learning. The child then wears the lab coat and a badge for the next lesson.



"I love that someone gets to be the scientist and then we get to wear the coat. It's really cool."

Assessment

Each topic is followed by the use of the RAG and follow up meeting between teachers and science lead. Feedforward journals are used by teachers to note misconceptions, key children, lesson observations and quotes from children were appropriate.

Impact

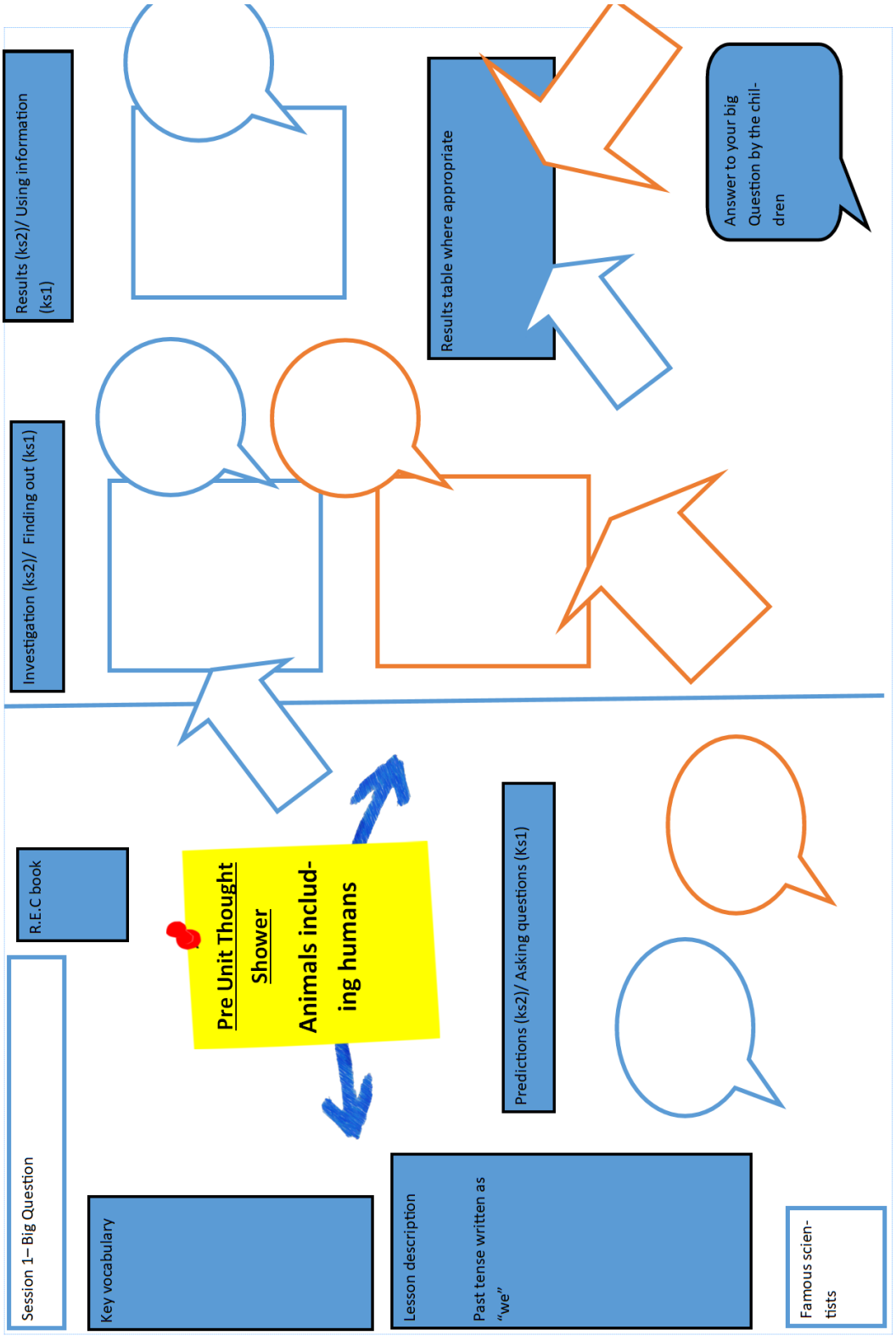
This successful approach at Estcourt Primary Academy results in fun, engaging lessons which cater to needs of all learners.

"*The experiments we do because they are very fun. I learn lots of new things.*"

"I like that we used lots of resources. I've used things I haven't before and I've learnt lots."

Appendix 1

Floor book layout:



Appendix 2

Feed forward journal template

Date	Unit focus	Focus children
Lesson observation		
Scientist of the week	Misconceptions to follow up	
Quotes		Notes

Appendix 3

LTP links to significant people