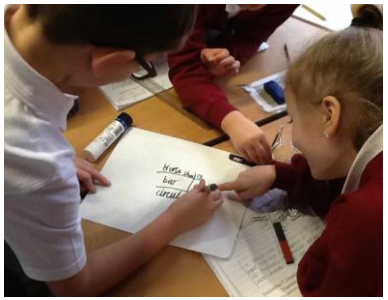
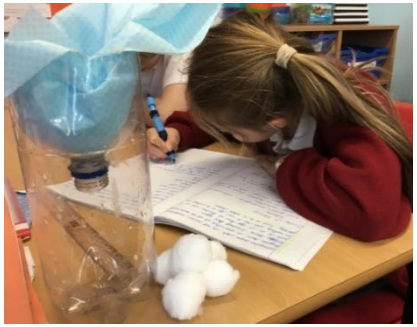
Science at Paddox

How We Teach Science at Paddox- Intent

We want children to work both independently and as part of a group.





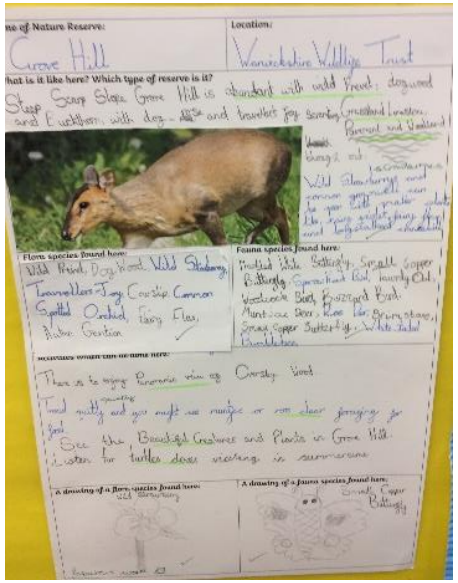
We want children to have purposeful experiences.

We want children to enjoy Science.

As a school community, we have created our own principles for how Science is taught at Paddox.

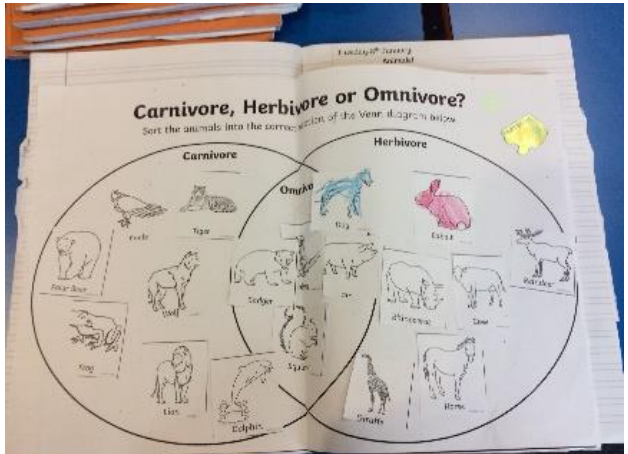
We want children to ask their own questions.

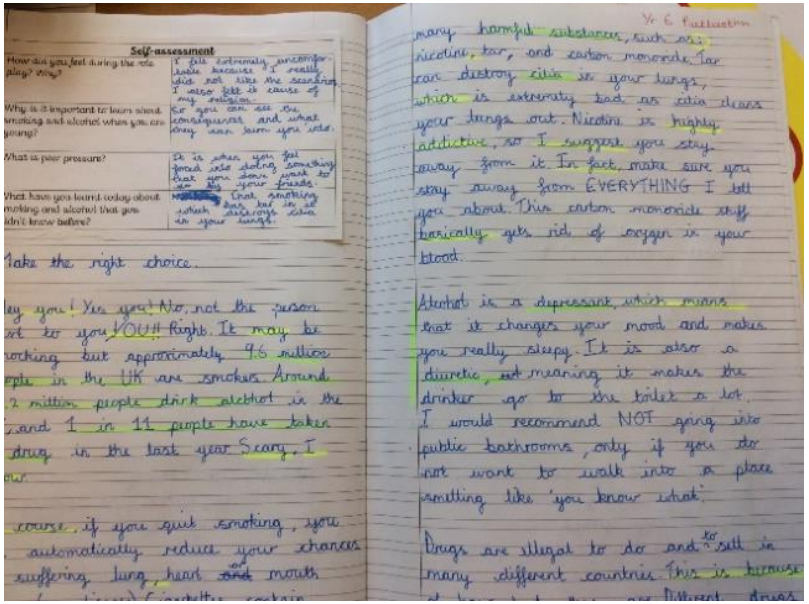
Science- Intent



We teach the children using a spiral approach. This means that objectives from each topic, for example electricity, is taught in the Autumn, Spring and Summer terms. This means that they have regular opportunities to revisit their prior learning and to build on this.

We have high expectations both in practical work and in written work.





Topic Overview- EYFS

In Reception, Science is covered as part of the 'Understanding the World' strand.

Topic Overview- KS1

In Years 1 and 2, children cover 4 areas of Science alongside Working Scientifically skills.

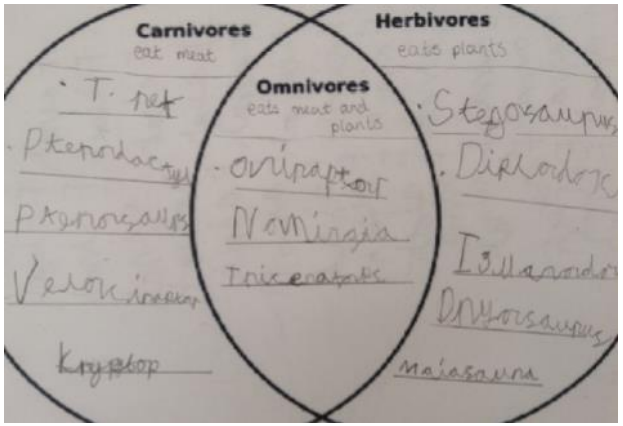
Year 1

Plants

Seasonal Changes

Animals, Including Humans

Everyday Materials



Year 2

Plants

Living Things and Their Habitats

Animals, including Humans

Uses of Everyday Materials

Topic Overview- KS2

In Years 3 to 6, children cover 5 areas of Science alongside Working Scientifically skills.

Year 3
Plants
Animals, including Humans
Light
Rocks
Forces, including Magnets

Year 5
Earth and Space
Forces
Living Things and Their Habitats
Animals, including Humans
Properties and Changes of Materials

Year 4
Electricity
Living Things and Their Habitats
Animals, including Humans
States of Matter
Sound

Year 6
Electricity
Living Things and Their Habitats
Animals, including Humans
Evolution and Inheritance
Light

Types of Enquiry

There are 5 types of enquiry that we cover In our Science lessons. These allow the children to apply their knowledge to different situations and develop their investigation skills.

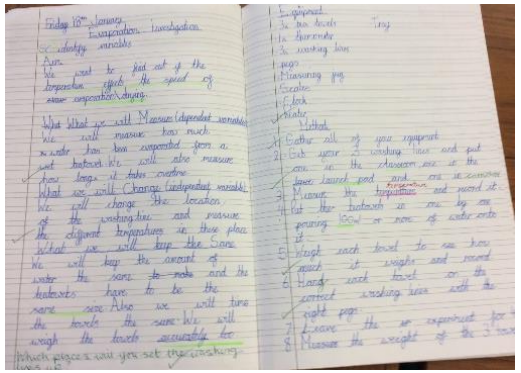
Research

Observing Over Time

Identifying and Classifying

Pattern Seeking

Fair and Comparative Testing



Parts of an Investigation

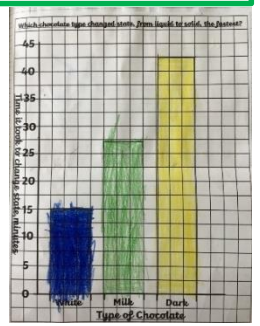
All children are taught about the various parts of an investigation.
As they move through the school, they are encouraged to do these on a more independent basis.

Deciding on an aim and determining variables

What Do Plants Need to Grow Well?

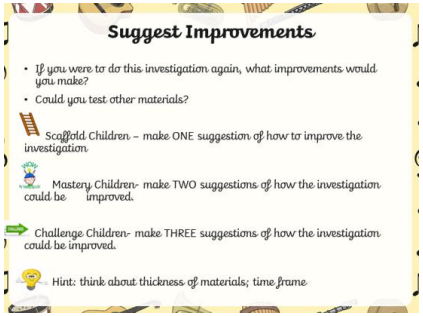
Question: What do you want to find out? Choose your question.	**Variables:** Which things are you going to give to your plant?

Gathering results

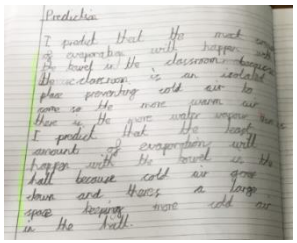


Deciding on a methodology

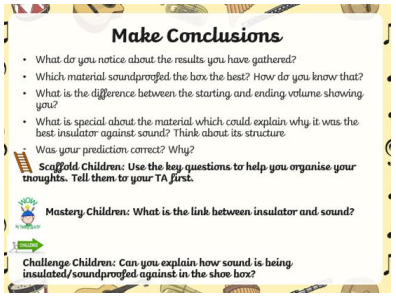
Suggesting improvements



Making predictions



Making conclusions



Teaching for Mastery- Implementation

We teach using a mastery approach. This means that all children are given the tools to access the curriculum.

Where necessary, children are given scaffolds to help them to achieve the learning objective.

For those children who have mastered a concept, there are 'Deepen the Moment' challenges in every lesson, to move learning on further.

How Shadows Are Made

The _____ is made when a

_____ _____ shines on an

_____ object. As light can't travel

around _____, the object _____ the light

and a _____ is formed. _____ and

_____ objects do not form shadows as they don't

_____ the light.

shadow	translucent	opaque
corners	blocks	shadow
block	transparent	light source

Shadow Puppets- Deepen the Moment

Which materials would you **not** use to make a shadow puppet.
Why?

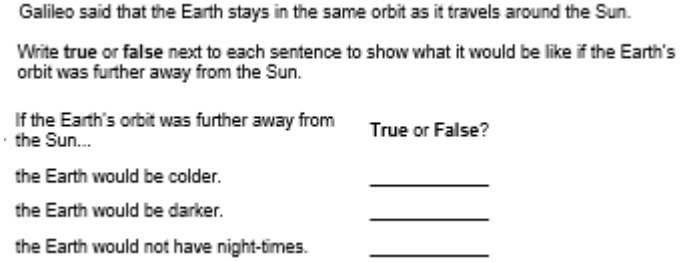
Developing Long Term Memory

As a school, we have a strong emphasis on the 'Learn More, Remember More' approach.

To support this, we continually revisit prior learning through the use of Boomerangs and Pitstops.

We also ask the children to apply their knowledge using exam style questions to assess their understanding.

We have introduced a Science learning journey this academic year as well as vocabulary grids; these are there to enable children to record what they have learnt and is something they refer back to throughout the year.



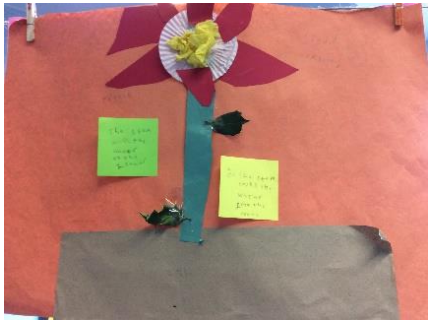
Galileo said that the Earth stays in the same orbit as it travels around the Sun.

Write **true** or **false** next to each sentence to show what it would be like if the Earth's orbit was further away from the Sun.

If the Earth's orbit was further away from the Sun...	True or False?
the Earth would be colder.	_____
the Earth would be darker.	_____
the Earth would not have night-times.	_____

Science Topic	Know What do you know already?	What What would you like to find out?	Learn What did you learn?
Living Things and their habitats			
Animals, including Humans			
States of Matter			
Electricity			
Sound			

Learning Links

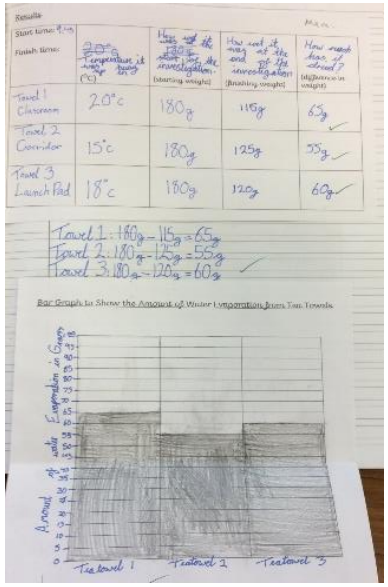


We aim to make meaningful links with other subjects in our lessons.

Using Art to show the parts of a plant.

Learning about volcanic eruptions in Geography using the reaction between bicarbonate of soda and vinegar.

Using ICT to record data.



Using our Maths skills to present data.

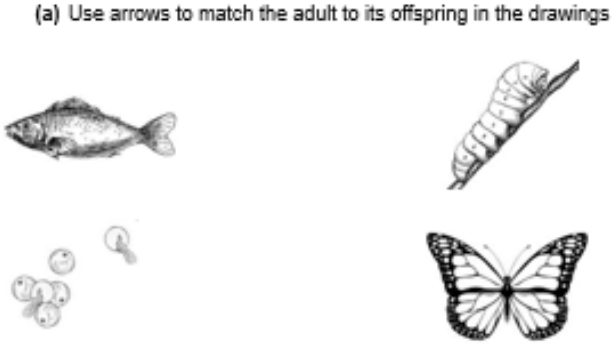
Using natural materials to create a collage.

Assessment

We use continual assessment in our lessons through the use of Pit Stops and Boomerangs.

We assess the children against the National Curriculum objectives on a spreadsheet. This is passed onto your child's new teacher as they progress throughout the year.

At the end of the academic year, all children are assessed in an end of year assessment which allows children to demonstrate their understanding of all of the topics covered during the academic year.
In Years 2 and 6, which are at the end of the Key Stages, prior learning from previous years in the Key Stage is also assessed.



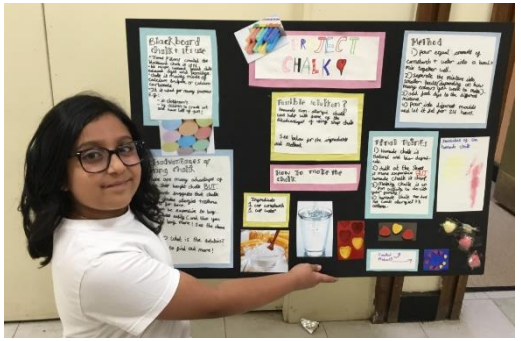
Additional Opportunities

We run extra-curricular events for children to attend with their parents such as Astronomy Evening.

We have been lucky enough to receive visits from Warwick University students who have provided workshops for our children.

We run a whole school Science competition during the Summer term. All children are celebrated and the winners are announced in the whole school newsletter.

We have held workshops for parents to help them to understand how we teach Science at Paddox.



Outdoor Learning

We actively encourage learning outside of the classroom and we are very lucky to have access to Forest School. All children have the opportunity throughout the year to attend Forest School sessions. This year we are also encouraging each year group to make use of our fabulous Biodome to germinate their own plants.

Minibeast hunting

Creating clay woodland faces

Choosing appropriate materials to make a path.

Planting daffodils

Den Building

Things you can do to help

- Encourage your child to have a natural curiosity about what is around them- encourage them to ask lots of questions!
- Have a go at some experiments at home:

The following links have some fantastic free ideas that you can use with your child at home:
https://wowscience.co.uk/

https://edu.rsc.org/resources/collections/primary-science-demonstrations

https://www.twinkl.co.uk/resources/quick-look-3d-ar-models/science-quick-look-3d-ar-models

If you have any questions about Science at Paddox, please email Mrs Barnes: Barnes.l3@welearn365.com or Mrs Ayris: ayris.s@welearn365.com