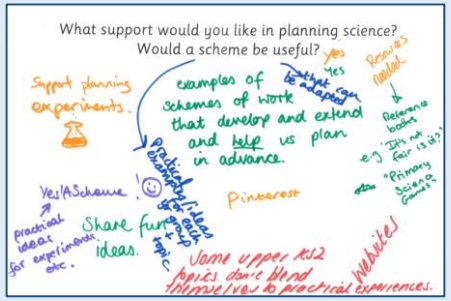
St Matthew's CEVA Primary

PSQM

Improving Scientific Enquiry

We identified a need to improve our teaching and learning of scientific enquiry. One way to do this has been through **CPD** for staff, held both in and outside of school.



Staff Meetings

Frequent staff meetings have ensured that staff understand the vision for science teaching this year and are supported to improve their science teaching – particularly of scientific enquiry.

Many sessions have been inspired from the subject leader attending his own CPD. For example, we explored working scientifically by doing an investigation into rocket balloons.

Teaching of science has improved following science staff meetings throughout the year.

In September we identified a need to support teachers with their planning, as the above survey shows.

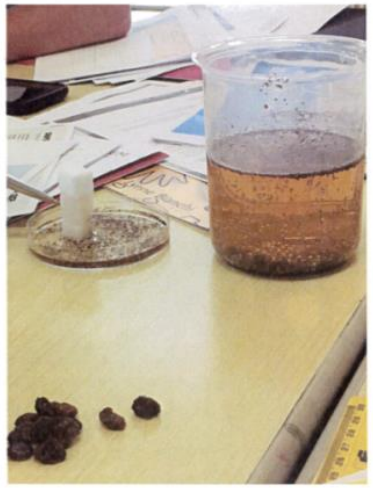
I purchased Science Bug so now teachers have support and resources to help them plan exciting scientific enquiry based lessons, such as those below…

Year 1

Year 3

T1, SL1, SL4

Reflections from a Year 2 teacher following CPD on the 18th March 2018. She was inspired to carefully choose the vocabulary she will use when planning science lessons.

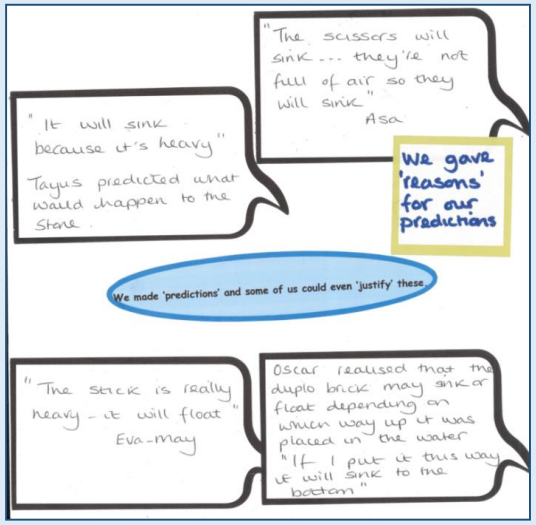


I felt that I learnt a lot about the importance of scientific language within children's work. I found that, when looking at some of my own class's work, they had written good conclusions but often used incorrect vocabulary, even though it was clear what they meant. Remembering this in the future, I will definitely be more careful with the language I use and model words that I expect to be used within the children's work.

BEKKI

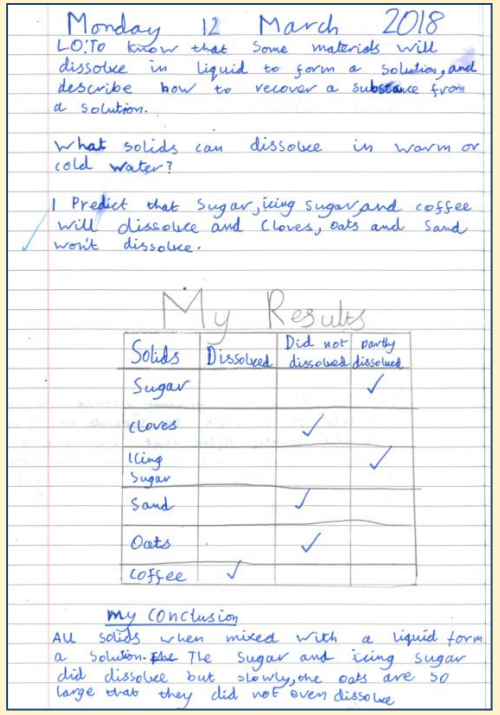
Working Scientifically

As a result of changes to our curriculum, CPD, and monitoring, children now engage in a wide range of opportunities to improve their skills in working scientifically by asking questions, making observations and communicating their findings.



Reception children investigated floating and sinking. Their ideas are now recorded in a **class scrapbook**, allowing them to reflect on their learning throughout the year.

L1, SL1



Monday 12 March 2018

L.O. To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.

What solids can dissolve in warm or cold water?

I Predict that sugar, icing sugar and coffee will dissolve and cloves, oats and sand won't dissolve.

My Results

Solids	Dissolved	Did not dissolved	partly dissolved
Sugar			✓
cloves		✓	
Icing Sugar			✓
Sand		✓	
Oats		✓	
Coffee	✓		

My Conclusion

All solids when mixed with a liquid form a solution. ~~The~~ The sugar and icing sugar did dissolve but slowly, the oats are so large that they did not even dissolve.

Teachers have focussed on teaching the children the skills they need for scientific enquiry resulting in improved understanding amongst the children.
Year 5 children have improved their skills in recording the results of their investigations in their own tables.

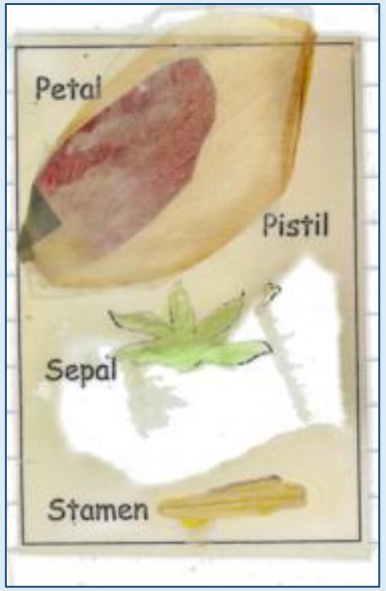
Following their CPD teachers are now more confident to let children lead their own learning and explore.

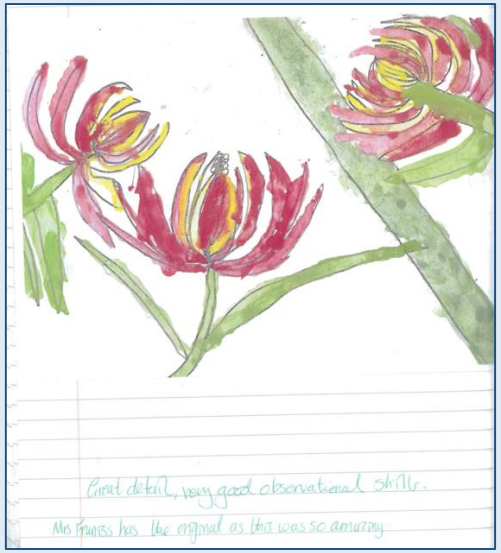
Year 1 children have asked their own questions about different liquids and powders.

Working Scientifically
Modelling

T2, WO1

Teachers are now using a range of methods to allow our pupil's to explore the world in a creative and imaginative way. The children are able to understand and visualise how systems work.





In Year 3 a range of art activities based around flowers supported the children to make close observations and learn key vocabulary.

In Year 4 creating the Earth out of play dough allowed them to understand the Earth's structure.

Year 6 improved their understanding of the circulatory system by creating and labelling large models.

In Year 2 making food chains out of paper chains supported the children to understand food chains and use vocabulary such as consumer in their discussion.

Working Scientifically

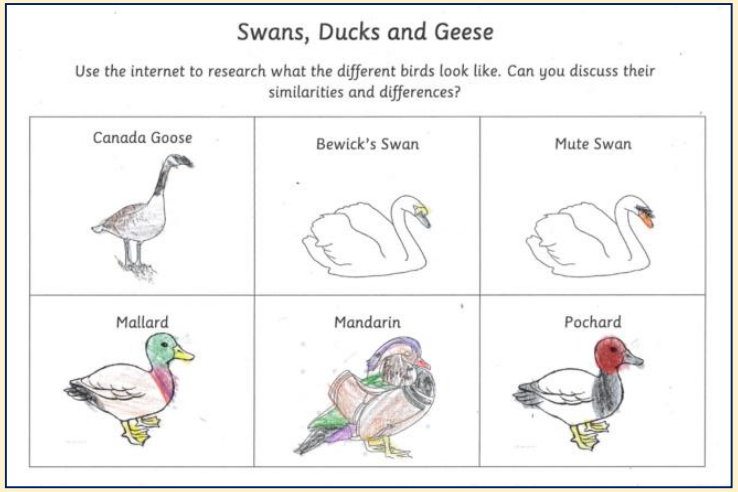
L1, T2, SL1, SL4

Research

Following our staff meetings teachers are confident to teach research as a type of scientific enquiry.

Year 2 used the iPads to find out about a food chain of their choice, improving their research skills.

Year 1 used the RSPB website to research the differences between different birds. They improved their language of similarity and difference.



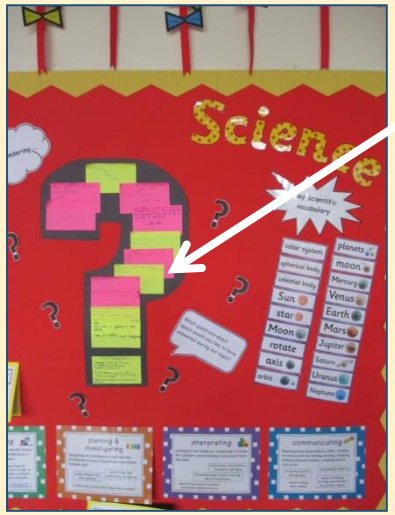
Swans, Ducks and Geese

Use the internet to research what the different birds look like. Can you discuss their similarities and differences?

Canada Goose	Bewick's Swan	Mute Swan
Mallard	Mandarin	Pochard

Asking questions

Displays from Year 1 and Year 5. Children have been encouraged to ask their own scientific questions which are displayed and referred back to during a unit giving the children ownership of their learning.



Year 3 teachers have taught a unit focussing on plant growth including many investigations. They were supported by CPD by the subject leader and our new scheme – science bug.

Writing

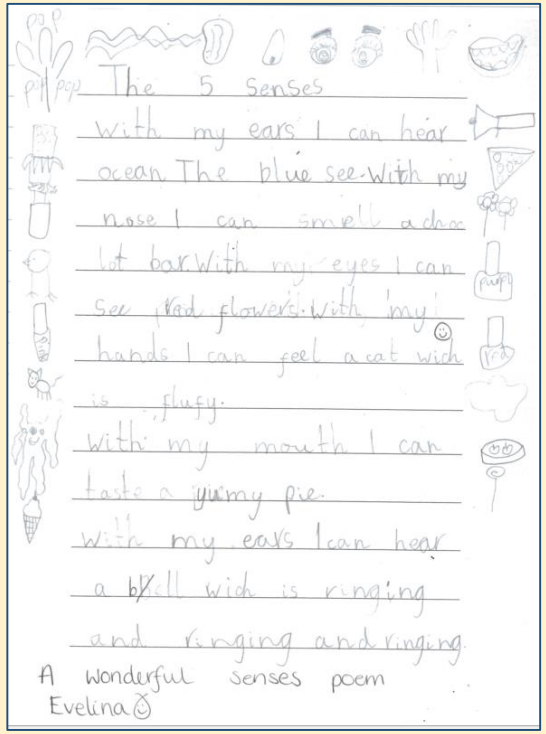
T1,WO1

Due to our new science books and our new topic based curriculum the children have had more opportunities to write using their science learning. They have applied their understanding of science and their writing has improved.

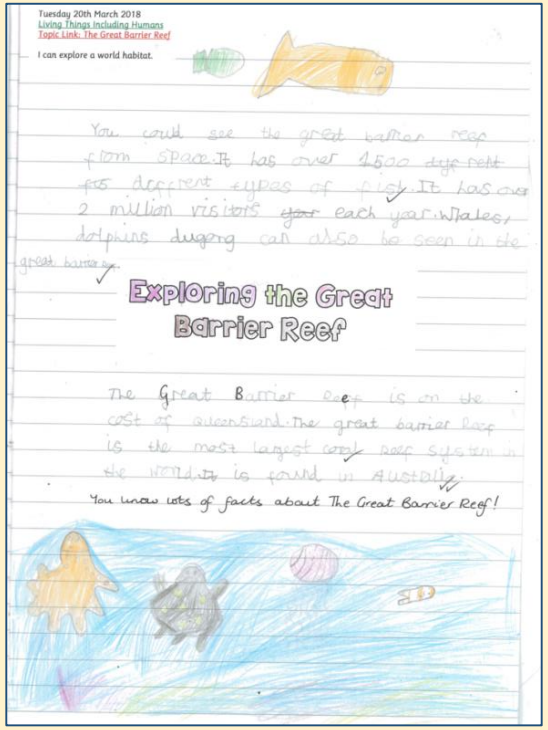
Year 3 curriculum map

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Ancient Egypt	Traditional Tales	Katie Morag's Scotland	Stone Age to Iron Age	Let It Grow!	Incredible Journeys
Science	Light & Shadow	Movement & Feeding	Parts of Plants	Rocks & Soils	What Plants Need	Magnets & Forces
Art & Design	3D	Drawing	Printmaking	Painting	Textiles	Collage
Computing	Online Safety	Programming	Using Data	Electronic Communication	Programming	Produce & Edit Media
Geography		Locating Countries	Scotland Geog & the Water Cycle		Fieldwork, Maps & plans	
History	Ancient Egypt			Stone Age To Iron Age		Transport (local)
Music	Let Your Spirit Fly	Glockenspiel and Christmas	Three Little Birds	The Dragon Song	Bringing Us Together	Reflect, Rewind and Replay
PE	Gym & Games	Dance & Net Games	Gym & Field Games	Dance & Invasion Games	Gym & Athletics	Gym & Team Games
PSHE	Class Rules Choices & Feelings	Friendship Conflicts & Causes	Respecting Property	Local Issues Pollution	Drug Education	People Who Help Us
RE	Religion & Individual Christianity	Religion & Individual Hinduism	Christianity Disciple	Christianity Symbols etc	Christianity Belief in Action	Revisiting Judaism
MFL	French and French Culture					

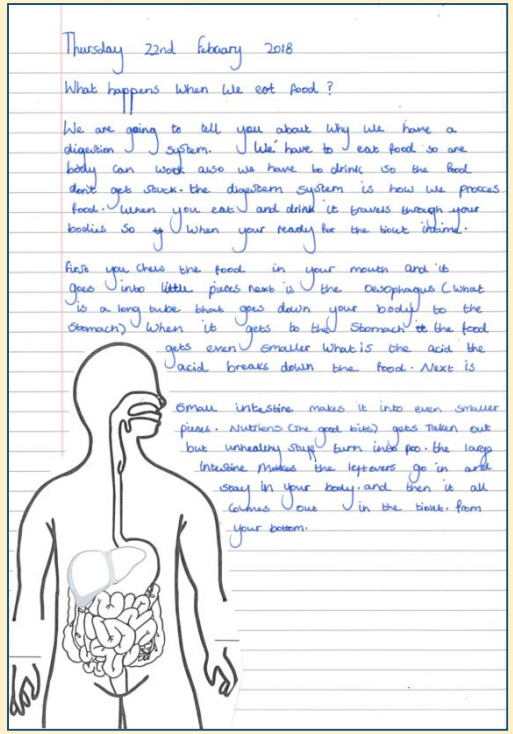
Designing our own curriculum maps this year has improved the cross curricular links between subjects meaning science is often taught in a cross curricular manner.



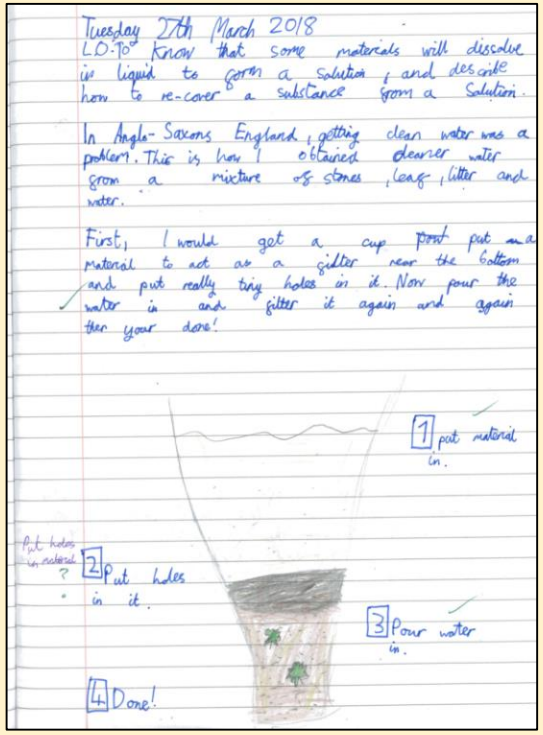
A poem written by a Year 1 applying their science learning about the human senses.



Year 2 children improved their research skills by using iPads to research a habitat before writing about it.



Inspired by their investigation of the digestive system Year 4 demonstrated their understanding through writing.



Linked to their history topic, Year 5 investigated filtering the Anglo-Saxon way.

Resources

Resources are regularly audited and replenished to ensure we are able to teach exciting scientific enquiry.

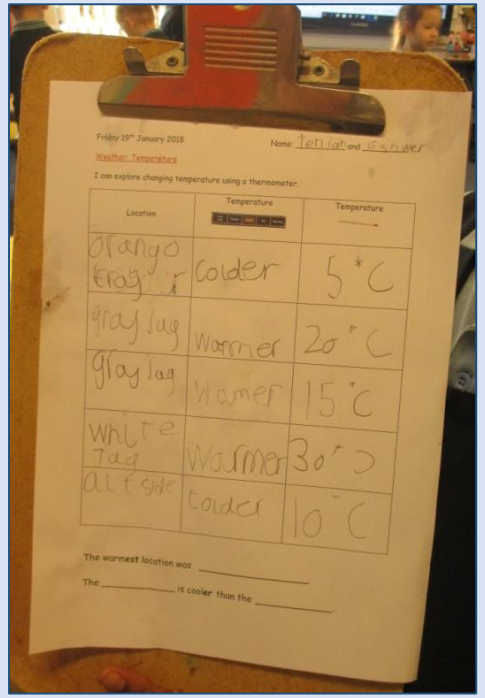
T3

Magnifying glasses and jars.

New equipment for mini-beast hunts has enabled Year 2 and Reception children to enjoy finding observing and comparing mini-beasts on trips around the local area.

Thermometers

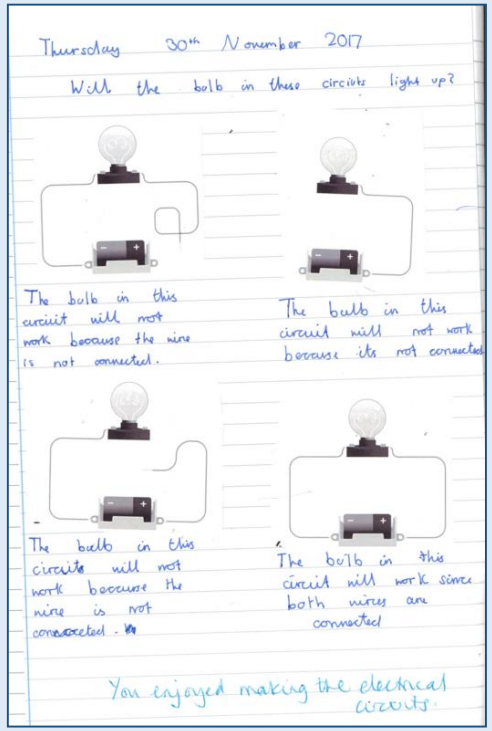
Year 1 children have been able to improve their skills in measuring and recording results due to the purchase of strip thermometers. They have broadened their vocabulary relating to temperature.

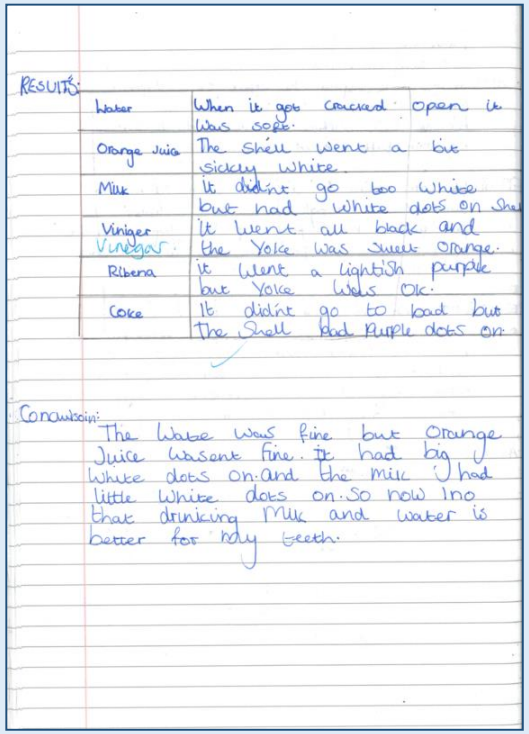


Book Scrutiny

T1,SL1, SL3, SL5

Close monitoring of our science book's throughout the year has lead to increased quality and quantity of work by the children. Our pupil's are able to present their learning in a variety of ways. They are improving their skills in recording in tables and communicating their findings.





Work in Year 4 books has improved following frequent book scrutiny and CPD.

	Year 1	Year 2	Year 3	Year 4	Year 5 / 6	Year 6 / 5
Comments	- Good presentation - Varied methods of recording eg diagrams, tables and responses - Clear progression within unit of work - Computing link - Evidence of sc enquiry eg waterproof investigation - Good amount of work	- Good presentation - Varied methods of recording eg graphs and responses - Progression within unit - Marking up to date - Evidence of enquiry	- Good amount of work presented in various ways - Baseline assessment at start of unit - Mixed presentation - Lots of evidence of enquiry - DIRT followed up - Evidence of progress across unit - Marking using tick boxes	- Good amount of work presented in various ways - Baseline assessment at start of unit - Mixed presentation - Some evidence of enquiry eg elec - DIRT - but pupils don't follow up - Progress across unit	- Good amount of work - Baseline assessment at start of unit missing! - Good presentation - Evidence of sc enquiry DIRT responded to. Some Eng based but lots of Science based too. - Science links in Eng books but not enquiry based	- Good amount of work Baseline assessment and revisited in purple pen. - Good presentation - Evidence of sc enquiry DIRT has a science focus and is followed up
Action		- Could timetable be adapted to fit in more regular Science lessons?	Heading or L.O missing from some work eg skeleton Don't do coloured title pages.	- Ensure pupils respond to DIRT - More enquiry needed eg 7.12.17 pupils seem to have copied identical work	Baseline assessment missing at start of unit (Photograph body display and annotate?)	Maybe a bit more work in books?

Better standard of work in Year 5 than Year 6

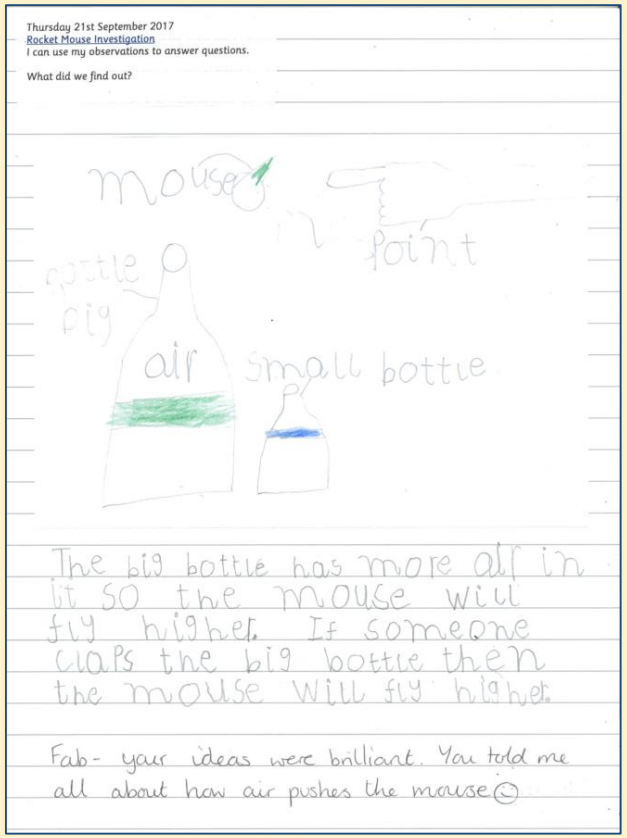
Feedback following our book scrutiny in January 2018. Strengths and next steps were identified which led to an improvement in the quality of the children's science books.

Assessment

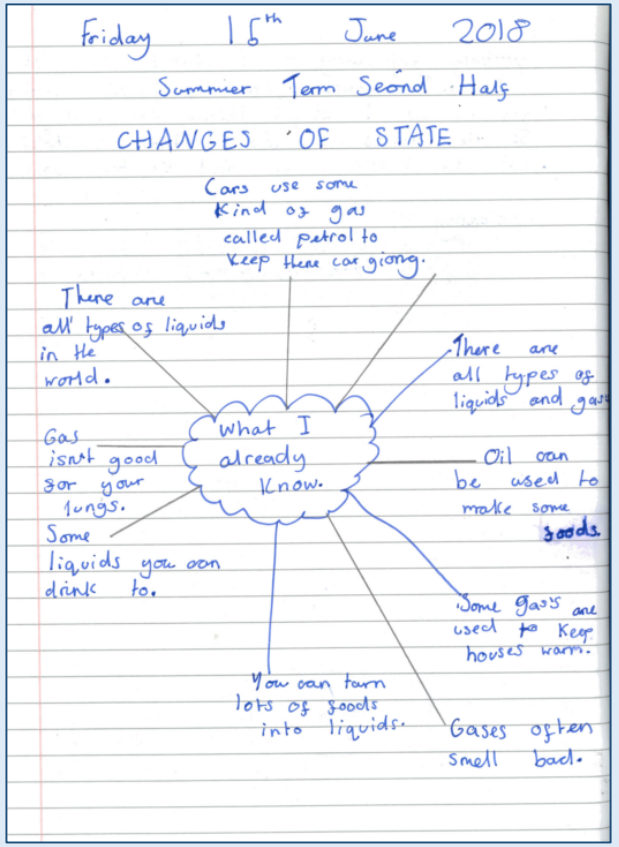
SL1, L2

Rocket Mouse

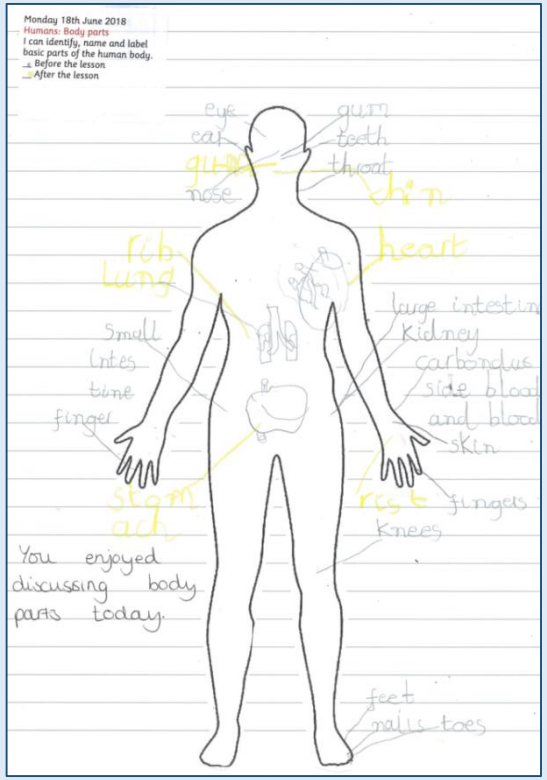
In September the whole school investigated how high they could make a paper mouse fly and all children wrote a conclusion. These compared at a moderation session allowing teachers to assess their class and discuss their expectations for each year group. This enabled us to have clear expectations



A conclusion written by a Year 1 pupil following the rocket mouse investigation.



A mind map from Year 4 at the beginning of their new topic.



A mind map which has been added to by a Year 1 pupil.

Assessment for Learning

This year we have introduced Mind maps at the beginning of each topic. This allows children to demonstrate their understanding of a topic. Teachers can use this work to ensure they are planning subsequent lessons at the correct difficulty, and assess prior understanding.

Children can also reflect on their own learning by referring back to their mind maps and adding to them in a different colour.

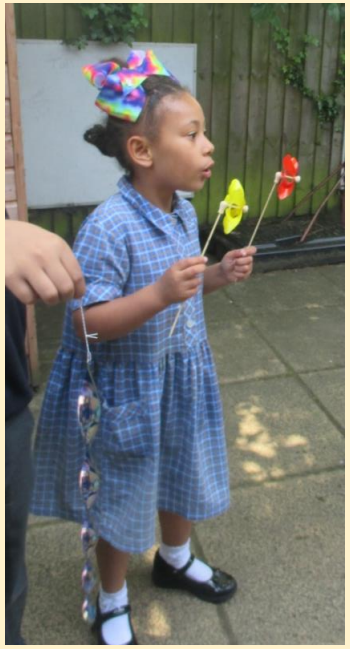
Raising Science Capital

L3, WO2

We have endeavoured to raise science capital through various initiatives. The children's understanding of the value of science, and its everyday importance, has improved.

ReachOut Reporter

I have encouraged the use of Reach Out Reporter to promote discussion and raise science capital within classrooms. Their videos are now used routinely by some teachers.



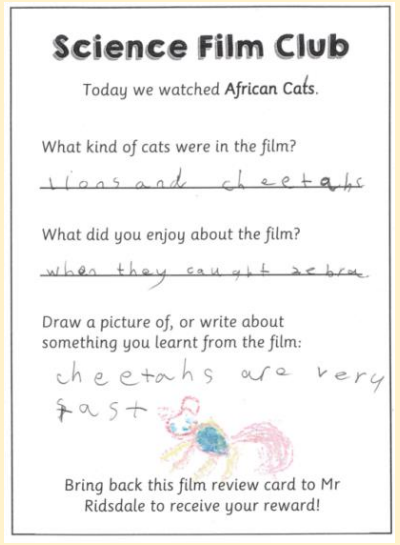
Playground box

Our new playground box filled with slinkies, wind toys, magnifying boxes, sun catchers and more, allows Key Stage 1 children to explore and play with science related toys at playtime.

It has prompted questioning and exploration and has inspired many interesting conversations! The children have discovered the world around them in a fun and independent way.

Science Film Club

At our weekly science film club year 1 and 2 children have been very excited to watch and discuss a science related film. It has improved their awareness of the science present in films and television. Discussion following the film allows them to express their views, whilst film review cards which are completed at home encourage the conversation to continue with their families.



Science Film Club

Today we watched **African Cats**.

What kind of cats were in the film?

lions and cheetahs

What did you enjoy about the film?

when they caught zebra

Draw a picture of, or write about something you learnt from the film:

cheetahs are very fast

Bring back this film review card to Mr Ridsdale to receive your reward!

Science Day 15th January 2018

SL2, WO2

Our science day raised the children's capital and the profile of science across the school. All children spent the day investigating the human senses with 4 different activities for each phase. The activities gave the children an opportunity to develop their skills in asking scientific questions (this was a focus), and work scientifically. It was a day which sparked curiosity!


St Matthew's CEVAP School

News

Friday 19th January 2018

From the Bible

"If anyone is in Christ, the new creation has come. The old has gone and the new is here!"

2 Corinthians 5:17

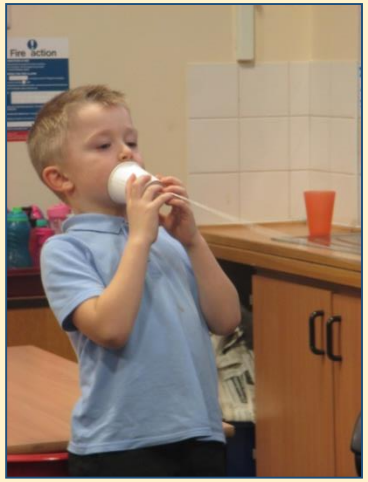
Science Day

On Monday 15th January we held a whole school Science Day. The children moved around different classrooms and undertook a range of experiments relating to the five senses. They enjoyed the sessions and found out more about our bodies in a fun and practical way.

A big thank you to Mr Ridsdale for organising this event.

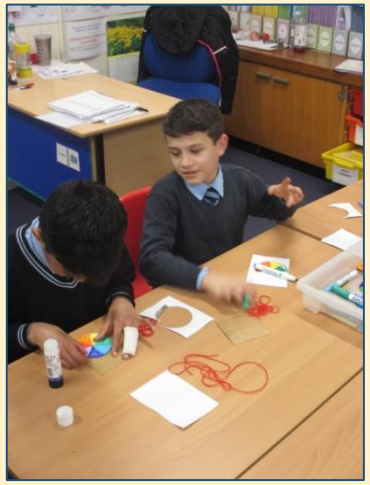
Parents were informed of our science day via the newsletter, hence raising the profile of science within the school community.

Children in reception spent the day exploring taste.



Year 1 made string telephones to investigate how sound travels.

Year 3 children used egg microscopes to make detailed observations.



Year 4 children created optical illusions.

Year 5 children made ooze to observe the chemical reactions.

Year 6 investigated fingerprints to solve a mystery.

We plan to hold regular science events throughout each academic year!

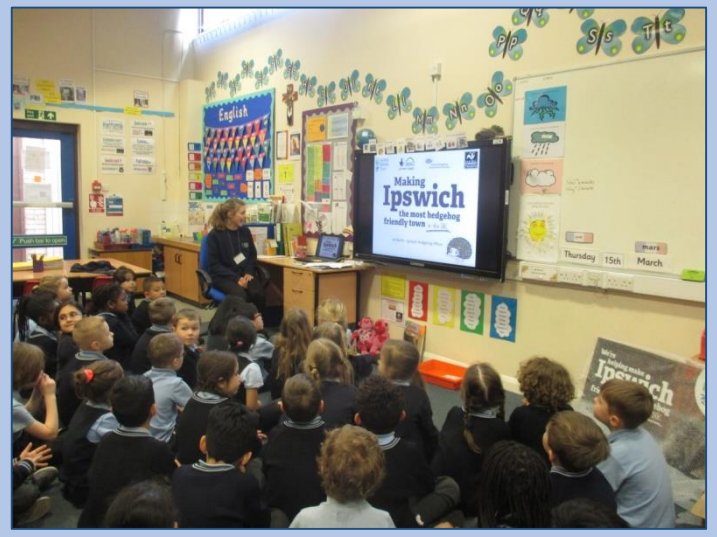
Visitors

T2, L3, SL2

Visitors help our pupil's understand the value of science in a broader context and inspire them to communicate their learning.

Now that we have used a STEM Ambassador we plan to use the opportunity a lot more!

Year 2 – Hedgehog Officer



During Year 2's visit from the Ipswich Hedgehog Officer from the Suffolk Wildlife Trust the children learnt how they could help hedgehogs to survive in their gardens. This inspired them to create posters using non fiction resources, hence teaching them important research skills.

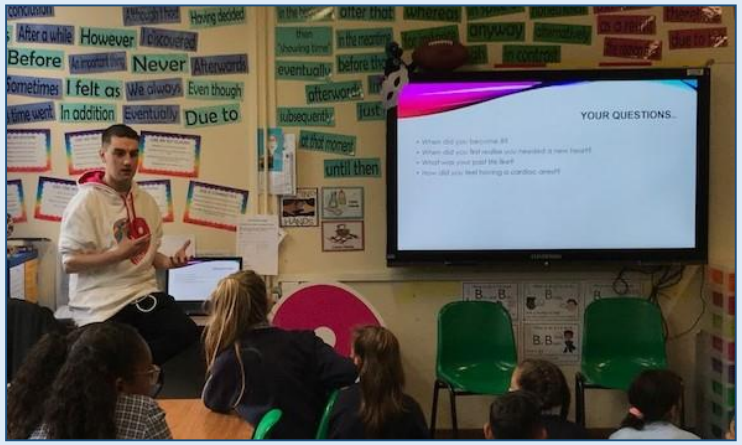
Year 4 – Weather Forecaster

Following their visit from a weather forecaster Year 4's weather roleplay allowed them to develop a deeper understanding of how human lives are affected by climate. During their roleplay they used weather measures and focussed on how the weather impacts living things.

Visit from Jim Lynskey

T2, L3, SL2

In Assembly

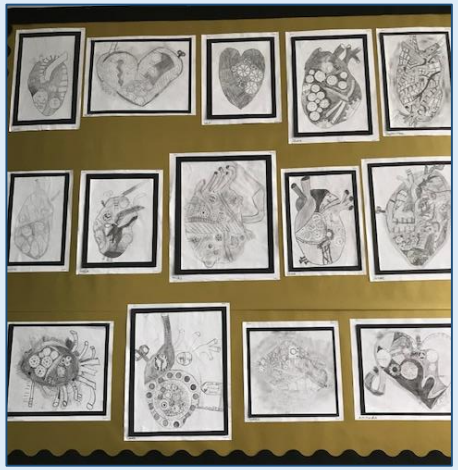


Year 6

Jim Lynskey from the charity Save9Lives visited school on Friday 8th June, in response to letters sent to him by Year 6 pupils. His visit truly inspired the children, and made them aware of how science can affect your everyday life. In assembly with children and parents he raised awareness of his need for a heart transplant. He spent the morning with Year 6, inspiring them to learn more about the heart and organ donations.

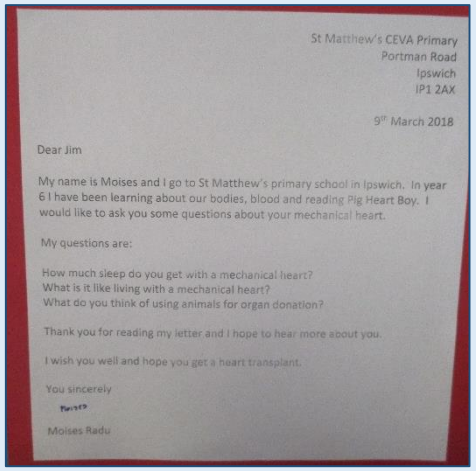
All children across the school made heart inspired artwork to celebrate his visit – a chance for close observation of the heart and to expression their creativity.

Reception



Year 5

Year 6


St Matthew's CEVA Primary
Portman Road
Ipswich
IP1 2AX

9th March 2018

Dear Jim

My name is Moises and I go to St Matthew's primary school in Ipswich. In year 6 I have been learning about our bodies, blood and reading Pig Heart Boy. I would like to ask you some questions about your mechanical heart.

My questions are:

How much sleep do you get with a mechanical heart?
What is it like living with a mechanical heart?
What do you think of using animals for organ donation?

Thank you for reading my letter and I hope to hear more about you.

I wish you well and hope you get a heart transplant.

You sincerely

Moises Radu

Year 6 letter to Jim

Picture for the Ipswich Star newspaper

Being part of the Wider Community

WO2

We have used opportunities presented by the wider community to give our pupils exciting experiences which allow them to deepen their understanding of science's impact in the world around us.

The Suffolk Plastic Pledge Seascape

Reception and Year 4 improved their understanding of the current plastic crisis and made their own models of marine life to be displayed at the Suffolk Show.

The Great Science Share

Year 2 children worked as a team to investigate their own scientific question which they then presented at the Great Science Share. It was an excellent opportunity for them to be part of the wider scientific community and experience life as a scientist.

Being part of the Wider Community

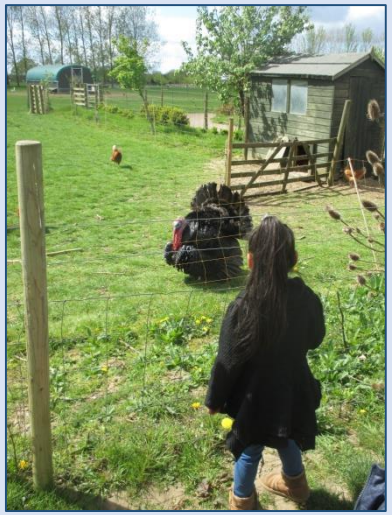
WO3
SL2

Trips

Throughout the year trips have enabled children to see science in action in the world around us. They have been able to apply their knowledge learnt in school.

Year 3 children on a visit to the park to investigate plant growth, and at a heritage day where they melted metal to make necklaces.

Reception trip to Colchester Zoo to learn about animals.



Year 1 trip to Hollow Tree's Farm

Governors

Governors are kept aware of the changes being made to our science curriculum and invited to participate in events with us. They are informed and supportive.

GOVERNOR VISIT LOG
Updated September 2017

Name of governor: Gillian Bailey

Date of visit: 15th January 2018

Class/Area visited: Assembly and a number of classes: Science Day

Focus of visit: (Please tick which priority is the focus of your visit)

Post Ofsted priorities (*Ofsted June 2015*)
Further improve the quality of teaching and accelerate pupils' progress by making sure that:

- teachers check that pupils read, understand and respond to the marking of their work
- pupils are taught to write legibly in a joined hand
- pupils have sufficient opportunities to practice and hone their writing skills across all subjects.

School priorities 2017-18

- Quality of teaching and learning – pupil progress and attainment
- Leadership and management – subject leadership
- Science
- Attendance
- Church school ethos

A Monday January Science day had been planned by Mr Risdale, in follow up to the enjoyable "Rocket Mouse" day in Autumn term. My son in Year 2 came home excited the previous Friday and announced that on Monday they would be having a "Silence day". My visit on the Monday proved somewhat noisier than promised!

The subject for this Science day was the Senses, and it started with an informative and interactive whole school assembly led by Mr Risdale. It was the first time I had attended a full school assembly and I was very impressed by the listening skills and behaviour demonstrated by the children. We learnt that we cannot smell in our sleep and that ear lobes serve no particular function! The five main senses were introduced and the scene set for classroom activities to take place throughout the day.

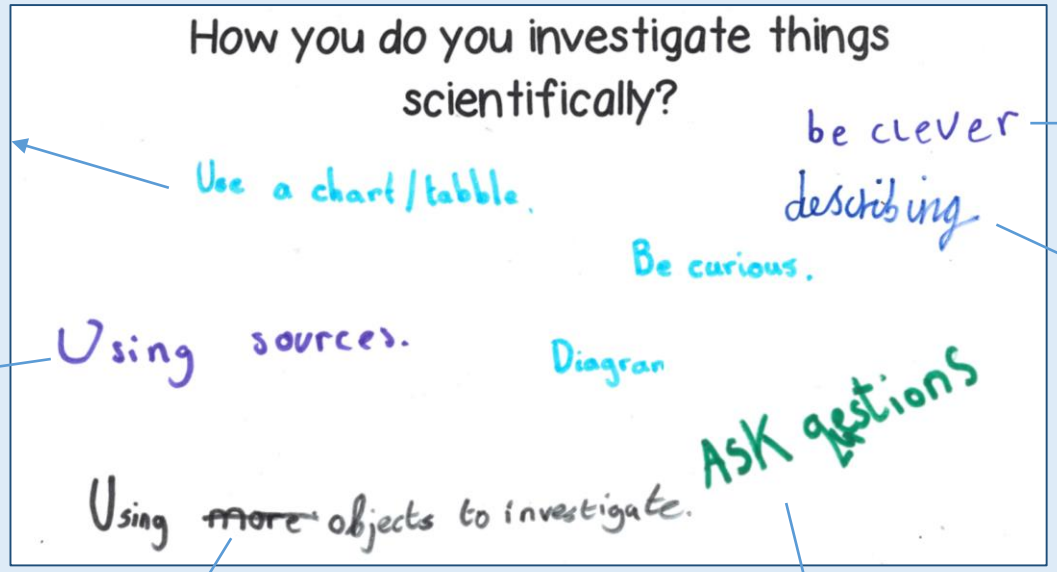
I visited Mr Risdale's Year 1 class first, they were all very busy focusing on Hearing, making paper trumpets to listen to heartbeats, and using different materials such as metal coat hangers, string and ribbon to assess how sound transmitted. Next I visited Year 4 classrooms where the focus was Sight. One class had made flip books and the other were dissecting, studying under magnifiers and drawing fruits such as tomatoes and raspberries. Finally in Year 2 I found the children busy making basic musical instruments and experimenting with cups and string to transmit sound and test Hearing.

There was a great deal of focus on the children being scientists for the day, on experimenting and curiosity rather than on facts and knowledge per se. All the children were clearly enjoying the different activities and excited by the break from normal Monday routines. There was a real buzz about the atmosphere.

Sadly I had to tear myself away at the end of the morning, though I would like to have stayed all day. Well done to Mr Risdale and all the staff for leading such an engaging enjoyable day for all the children and thanks for letting me drop in.

Listening to Pupils

At the beginning of the year pupils were able to discuss science, but were vague about the specifics such as scientific enquiry. Our pupil perception feedback from June 2018 show that our increased focus on teaching science has made a big difference to the children's understanding….



Year 2

Year 1

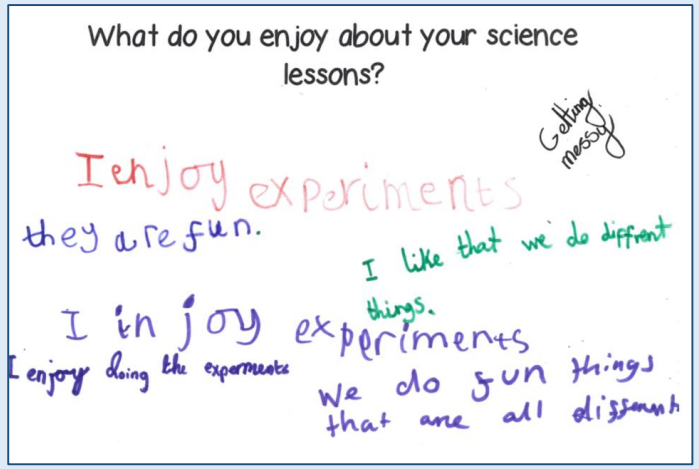
Year 4

Year 4

Year 5

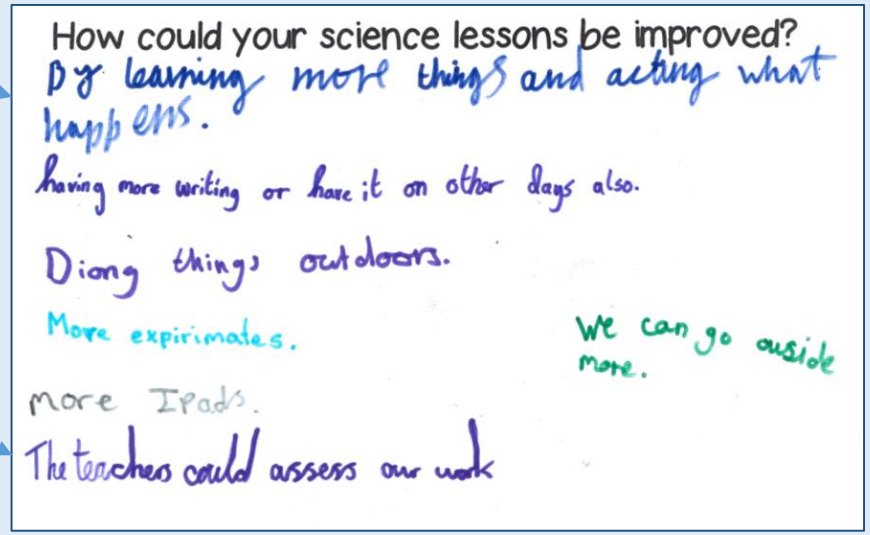
Year 3

Pupils are now aware of skills they need to be good scientists due to these skills being explicitly taught throughout the year.



Years 1 – 6 Children feel that science is a fun and exciting subject!

Ideas from the children that will be fed back to teachers to help us improve our science teaching next year.

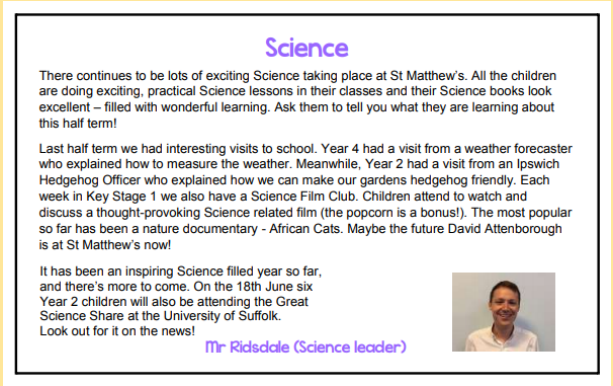


SL5

A Year 6 pupil said that his work is marked but he is not given ideas on how to improve his learning. As a staff we will discuss how this can be remedied.

Communication with Parents

allows them to support their children's science education at home.



Science

There continues to be lots of exciting Science taking place at St Matthew's. All the children are doing exciting, practical Science lessons in their classes and their Science books look excellent – filled with wonderful learning. Ask them to tell you what they are learning about this half term!

Last half term we had interesting visits to school. Year 4 had a visit from a weather forecaster who explained how to measure the weather. Meanwhile, Year 2 had a visit from an Ipswich Hedgehog Officer who explained how we can make our gardens hedgehog friendly. Each week in Key Stage 1 we also have a Science Film Club. Children attend to watch and discuss a thought-provoking Science related film (the popcorn is a bonus!). The most popular so far has been a nature documentary - African Cats. Maybe the future David Attenborough is at St Matthew's now!

It has been an inspiring Science filled year so far, and there's more to come. On the 18th June six Year 2 children will also be attending the Great Science Share at the University of Suffolk. Look out for it on the news!

Mr Ridsdale (Science leader)

St Matthew's CEVAP School

News

Thursday 29th March 2018

telephone: 01473 251614
email: office@stmatthewscevap.uk
www.stmatthewsprimary.co.uk

End of term
Thursday 29th March

Back to school
Monday 16th April

Science Investigation

As you know we are having fun doing lots of Science this year at St. Matthew's, learning practically and exploring the world around us. You can be scientists at home too! Why not try the following activity at home, now that spring is all around us.

Save your egg shells, and fill with soil and a seed - try a sunflower or a pea. What will you need to give it to make it grow? If you try growing a few, you can crack open one of the eggs to have a look at how the seed has changed!

Mr Ridsdale

Science updates in the **monthly newsletter** have raised the profile of science.
Parents are given ideas of activities they could do to continue their child's science learning at home and made aware of events at school.

Homework

Year 2

Year 5

Science **homework** inspires the children to work creatively at home with their families to continue their science learning.

SL2

At **share events** parents can support their children with their science education in school. Year 1 children and parents are testing catapults together.

The minutes from **Parent Forum (14.5.18)** demonstrate our parent's positive feedback regarding science.

Science

The school are currently applying for the Science Quality Mark. The parents were asked for their views on the teaching of Science in school.

- Parents were aware of our current focus on Science.
- They had seen information and ideas about Science in the school newsletter.
- They reported that pupils are enthusiastic and knowledgeable about Science. One mother said that she was impressed with her child's ability to construct a human skeleton model and to name the bones.
- Parents said that pupils were eager to talk about their Science learning at home.
- Sometimes Science based activities are set for homework, but not routinely.
- Parents were positive about having visitors in school linked to Science. For example, a visitor with a 'mechanical heart' is scheduled.