

Headteacher: Louise Owen

Welcome to...

**BROOMWOOD
PRIMARY SCHOOL**

Broomwood Primary,
Mainwood Road,
Timperley
Altrincham
WA157JU

Impact Statement

Key

Staff Voice

Pupil Voice

Next Steps

Action Statement

Our Science vision is:
To inspire pupils' curiosity about the world around them and to enable pupils to become scientific literate citizens

Pre PSQM

Parent Voice

Evidence



SL1: There is a clear vision for the teaching and learning of science

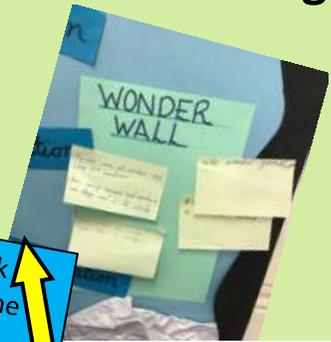
Pre PSQM: We did not have a clear intent for science and how staff should implement science in a consistent way for our children.



Year 6 Children work collaboratively to share their ideas and investigations in science



Children can ask questions using the Wonder Wall



Children are given lots of opportunities to ask questions, explore and apply knowledge and understanding in investigations

Children are enthused and challenged by their learning



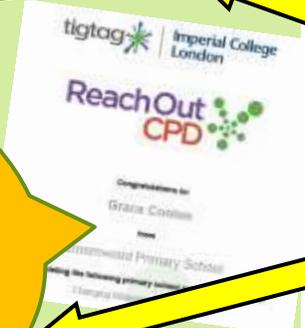
Stunning start in reception making telescopes and rockets to see the stars



KS1 learning enhanced by a visitor to their classroom to discuss plants and bulbs liked to their topic.

Staff Voice: The science overview for KS2 has supported my KS2 science and planning for correct progression: Year 4 Teacher

Staff Voice: "Reach out CPD meant that I was secure in the subject knowledge I would be passing on to other teachers in my planning" Year 5 Teacher



There is excellent CPD for staff to ensure that all staff feel confident to deliver the subject matter

Teachers deliver lessons using multi-sensory approaches to ensure that all pupils can access science effectively

Children can articulate their scientific knowledge using appropriate terminology

Teachers plan effectively to build on prior knowledge and ensure that children retain 'sticky knowledge' within all aspects of science

Children's learning is enhanced through wider learning opportunities including trips and visitors to strengthen the science taught in school

Teachers use progression document to build on prior knowledge from previous year groups and develop children's sticky knowledge



Multi-sensory approaches used in every year across the school to support understanding



Science terminology linked to each topic is given to children to apply in their learning in all Years

Staff Voice: Science tests have helped me to recap certain misconceptions and inform future planning. Year 2 teacher



Next steps: To ensure work is shared effectively with parents and that the dialogue about science does not stop here.

Science teaching and learning in our school is good when...

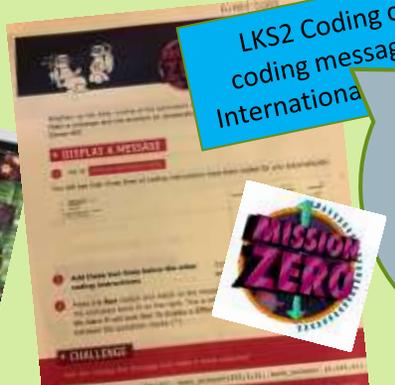
SL2: There is a shared understanding of the importance and value of science

Pre PSQM: Parent Voice surveys showed we could further support children's learning in science through STEM clubs

Year 3 display-JC



LKS2 Coding club are coding messages to the International



Pupil Voice: "It's so cool that you get to send a message to astronauts" Year 4 pupil

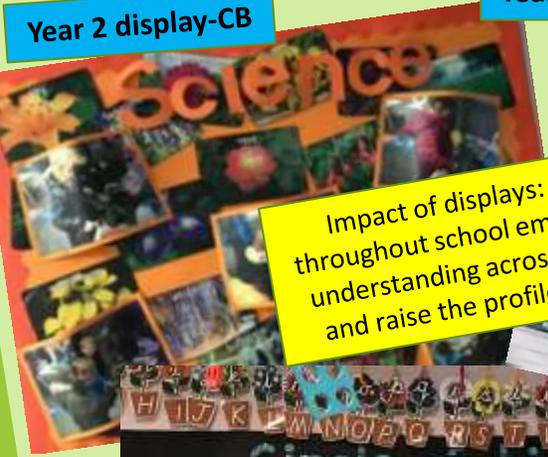
Action: To provide extra-curricular activities linked to science

KS1	KS2	MONDAY	TUESDAY
E1 Gendering /YCS Yrs 4, 5 and 6	E1 INTO File Yrs 3, 4, 5, 6	E1 Homework Yrs 3 and 4	
Yrs 4, 5 and 6	Yrs 3, 4, 5, 6		
Yrs 5 PM E1 Reading Yrs 3, 4, 5, 6	Yrs 2 PB E1 Homework Yrs 3, 4	E1 Music Mins 6 Rec	
Yrs 5 GC E1 STEM	Yrs 3 SW E1 Hockey Yrs 3, 4, 5 and 6		
3.15-4PM	3.15-4pm		

Extra curricular timetable

Pupil Voice: I have enjoyed STEM club because I can learn things in Science I haven't learnt in class yet – Year 3 Child

Year 2 display-CB

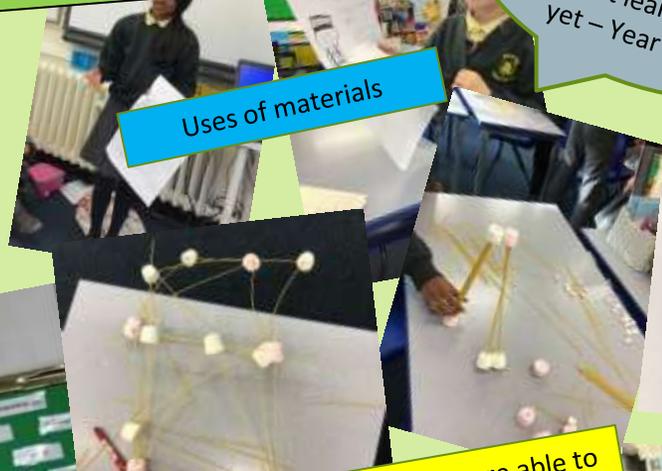


Impact of displays: Displays throughout school embed science understanding across key stages and raise the profile of science

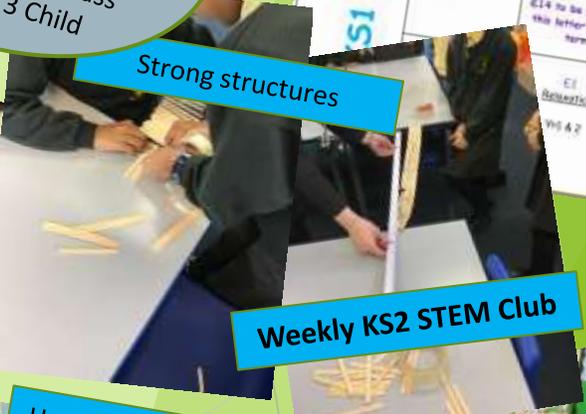
Year 1 display-JW



Uses of materials



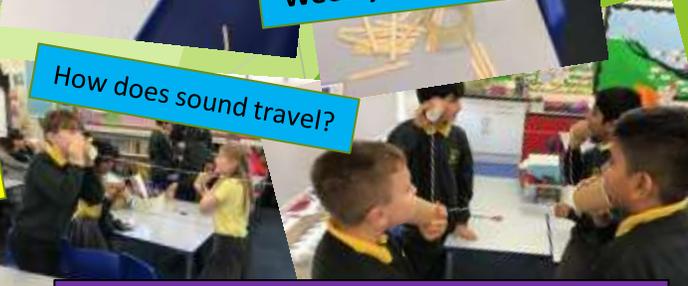
Strong structures



Weekly KS2 STEM Club

Impact of STEM Club: Children are able to see the practical application of science and can recognise the impact of science on their STEM solutions.

How does sound travel?



Year 1 display-DR



Year 5 display



Next steps: whilst we have some clubs linked to science- we need to have a pure science one that the children can access.

SL3: There are appropriate and active goals for developing science

Pre PSQM: Parents did not have a role in developing science in school and outside of school.

Action: To link homework projects with science so parents can become more involved with supporting their children in science.

Impact of family projects: Homework projects linked to science demonstrate engagement in science as a whole family.

Children's topic projects linked to science across all year groups

Parent Voice: To further support children in science, school could provide information sheets with investigations we can do at home.

Action: To send home more science competitions for children to engage in science outside the school gates.

Impact of class website: Parents can understand what children are learning in science to support at home.

Year 3 class website showing science objectives covered each term

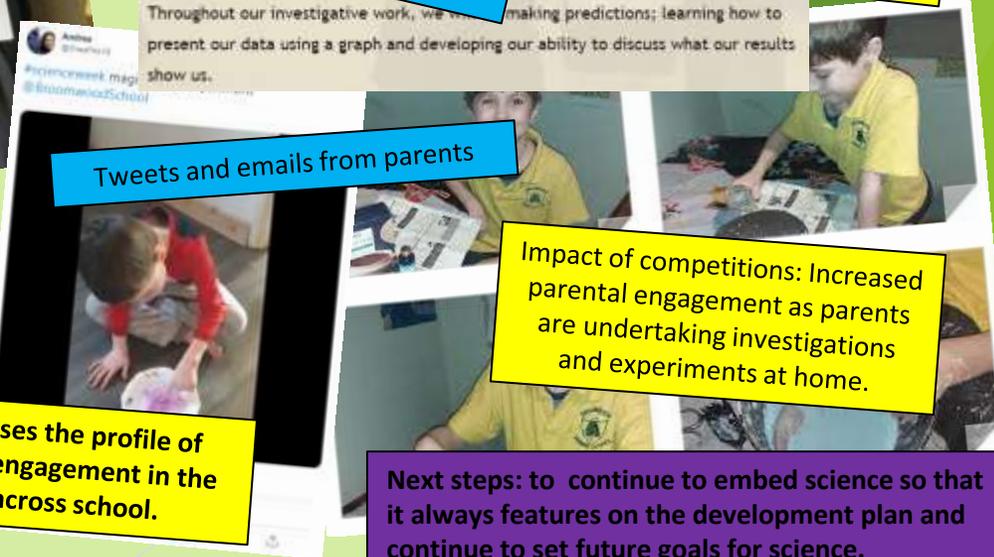
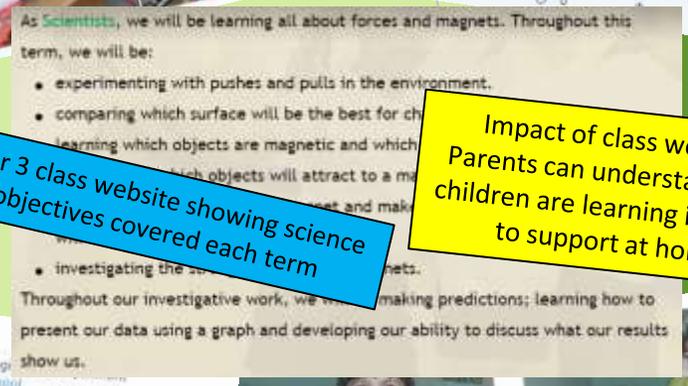
Children bringing their science investigations from home into school to share with their class.

Science competitions handed out termly to give children opportunity to engage in activities outside of school.

Children rewarded in assembly for competition entries

Impact: Raises the profile of science and engagement in the subject across school.

Next steps: to continue to embed science so that it always features on the development plan and continue to set future goals for science.



T2 There is a range of effective strategies for teaching and learning science which challenge and support the learning needs of all children.

Pre PSQM: Children did not have the opportunity to design their own investigations and ask their own questions

Action: To provide older pupils with more opportunities to plan their own science investigations

Action: Key scientific vocabulary is developed to link with all topic areas.

Pre PSQM: Science vocabulary was not emphasised enough and children were not using it appropriately in written work.

UKS2 vocabulary mat with sticky knowledge

KS1 vocabulary mat

Impact: Children and teachers have an understanding of subject specific vocabulary and children can apply these to their science learning.



Action: To ensure mastery in science and build on previous science knowledge.

Pre PSQM: There was some crossover and some gaps in the science topics which were covered.

Staff Voice: "Overview and progression document has provided me with a starting point with the past knowledge the children should already know" Year 4 Teacher

Pupil Voice: "Using the Wonder Wall means I can ask questions about things which interest me and I might not usually cover in class. I like it when we research the answers" Year 6 pupil

Staff Voice: "Great breakdown of the national curriculum and gives ideas on how to push learning" Year 6 Teacher

Impact: All children are covering the appropriate national curriculum objectives on a rolling programme

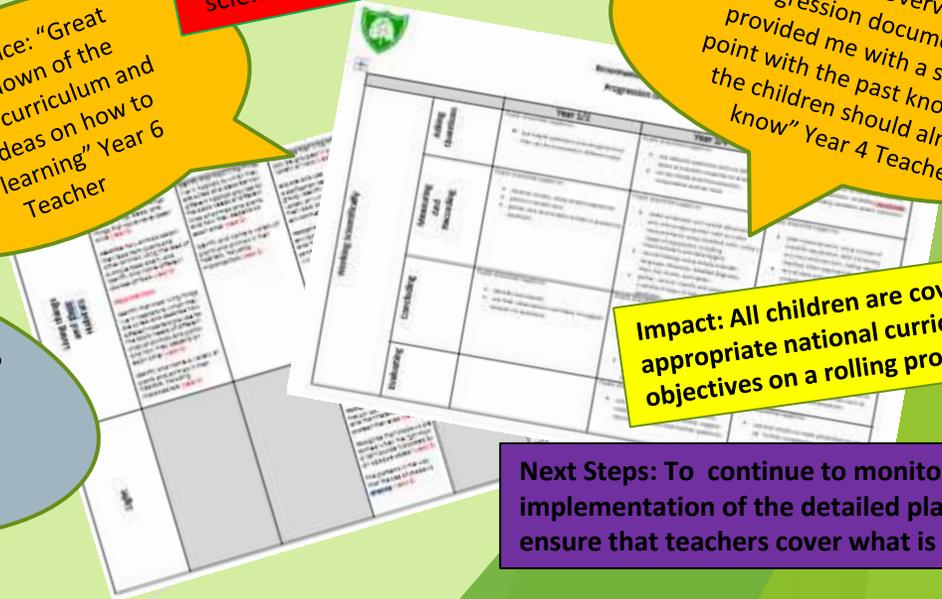
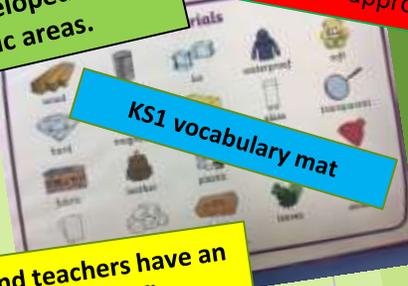
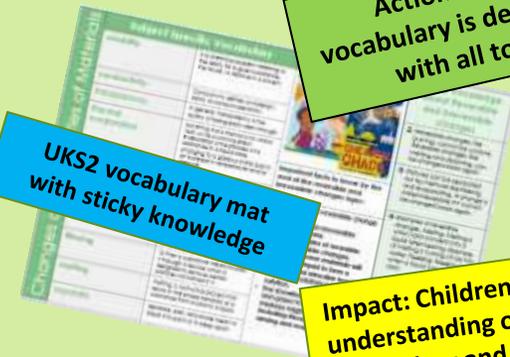
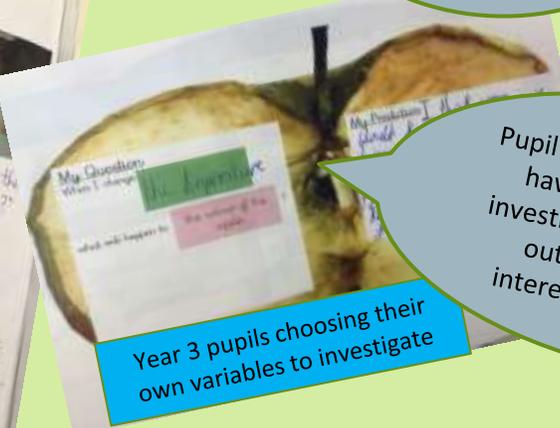
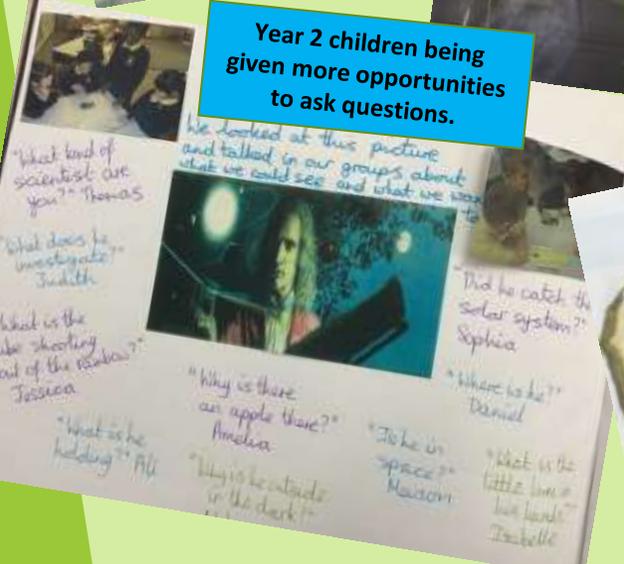
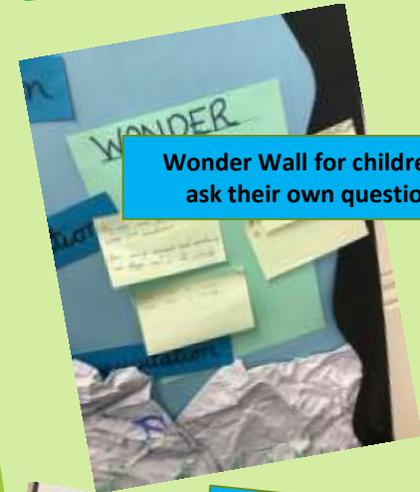
Pupil Voice: "I like it when we have a choice about our investigation and we can find out something we are interested in" Year 4 pupil

Next Steps: To continue to monitor the implementation of the detailed plan to ensure that teachers cover what is expected

Wonder Wall for children to ask their own questions

Year 2 children being given more opportunities to ask questions.

Year 3 pupils choosing their own variables to investigate



L1: There is a shared understanding of the purpose and process of science enquiry.

Pre PSQM: Children were not exposed to all types of investigation across the year groups

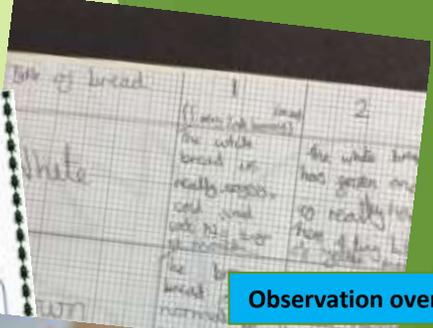
Action: To ensure that the children across the school are carrying out a range of investigations.



Comparative and fair testing



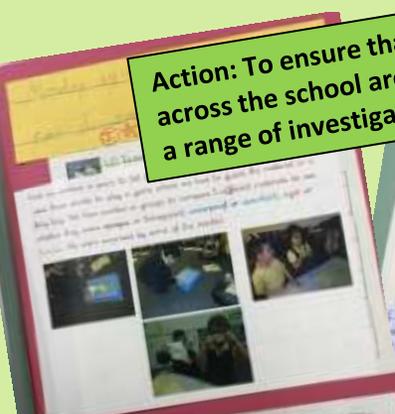
Pupil Voice: "The learning gets in my brain more when we do an investigation because I understand what the teacher is talking about"



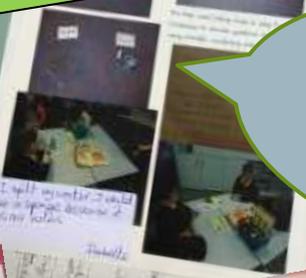
Observation over time



Staff Voice: "After investigating, children had a better understanding of concepts" Year 3 Teacher



Identifying, classifying and grouping



Pattern seeking

Year 3 Measuring



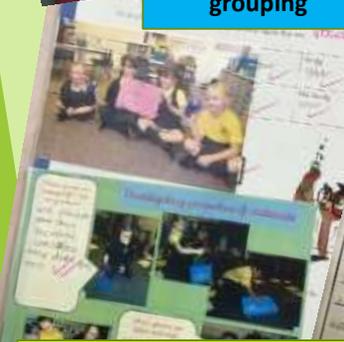
KS1 Pictograms



Research using secondary sources

Action: To improve conclusions and the 'so what' part of the investigative process.

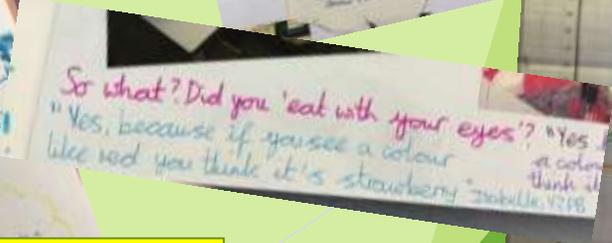
Action: To incorporate more maths into science investigations



Impact: Children are undertaking a range of science investigations across the school and are exposed to all types of investigation.



Impact: Children are making stronger conclusions and relating to a 'so what question' to consolidate their understanding from an investigation



UKS2 data handling

Next steps: To provide teachers with specific training focussing on different types of investigation and giving them key examples to implement in lessons.

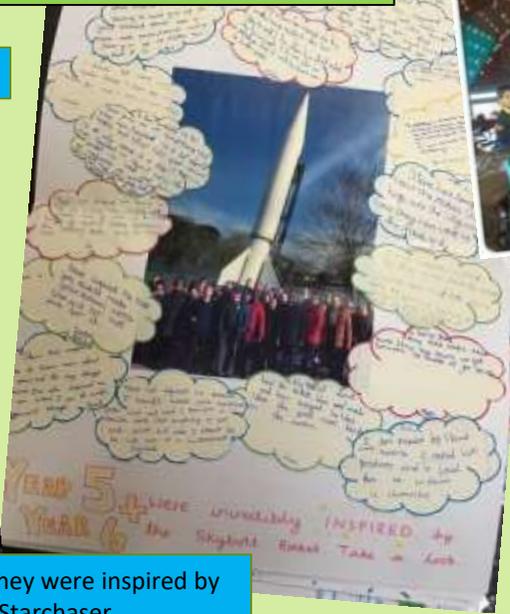
L3: There is a commitment to developing all children's science capital

Before the PSQM there wasn't enough emphasis on careers relating to science and there was a lack of trips/visitors linked to science. Parents were not as involved as we would like.

Action: To find ways to get more parents involved with science and to develop children's understanding of careers in science.

Action: To enhance children's science experiences with trips and visitors.

Starchaser Rocket-whole school-Forces



Year 5 showing how they were inspired by Steve from Starchaser

Year 5 and 6 had an amazing fantastic finish to our funfair topic at Blackpool Pleasure Beach yesterday! We absolutely loved going on the rides and learnt lots of interesting facts about the history of the Pleasure Beach and the forces used on the roller coasters!



Trip to Blackpool- linked with forces

Fantastic Finish... explore our experiment and science topics we had a visit to Tatton park and the gardens and participated in a range of activities which increased knowledge of plants and growth...



Trip to Tatton Park- Plants

I didn't know what a computer scientist was, but now I do! (Ali year 2)



Parents talking about their science careers

RECEPTION have just had a visit from Mrs Khan who is a haematologist! We have learnt about our blood and what red and white blood cells do. The children asked some great questions like "What would happen if we didn't have enough red cells?"



Children participating in STEM challenge linked to topic.

How can we help the man see Father Christmas without him seeing the man?

Broomwood Primary @BroomwoodSchool - Jul 8, 2019 A brilliant day out at MOSI to begin STEM week! Look at the children from 3DR exploring in the experiment and industrial revolution sections of the museum.



Trips linked to science



L3: There is a commitment to developing all children's science capital

Science Week

2nd March-6th March 2020

Before the PSQM there hadn't been enough focus on helping the children to understand about jobs in science and there was less emphasis on the importance of science in everyday life

Action: To find ways to ensure that pupils understand how science is part of everyday life

The Bentley experience

Broomwood Primary @BroomwoodSchool · 1h
As part of our science week 3SW had a look around a Bentley Hypercar. We looked at the different parts and asked questions about how it is made.
#STEM #Science @BentleyMotors



Staff Voice: "Brilliant opportunity to give children experiences they may otherwise not encounter through topics"
Teaching Assistant

Pupil Voice - "I now understand that science is part of every day life and there isn't anything which doesn't involve science"
Year 5



Action: To ensure that all children recognise that science is for them.



Broomwood Primary @BroomwoodSchool · 5h
Year 5GC were filled with famous scientists yesterday who have changed the world through their incredible research! Take a look to find out more about who we were...



Impact: Children dressing up as a scientist and carrying out research learn that scientists are different gender, have different ethnicity- supporting them to understand that science is for all.

Impact: Children saw the link between science and engineering and how science is part of our every day lives

Action: To ensure that the children really understand the difference between biology, chemistry and physics

We put water in it and pumped it up. Ours went over the tree! We learnt more about forces.
(Zach Year 3)

Scientist of the week certificate for those who demonstrated particular curiosity and enthusiasm

Staff Voice: "Showed children jobs linked to STEM which children could aspire to"
Year 1 teacher

Impact: Teachers planned definite experiments linked to chemistry, biology and chemistry to continue to develop the children's understanding of this

Next steps: To continue to develop science week as an annual celebration of science in our school and to build on our science capital.

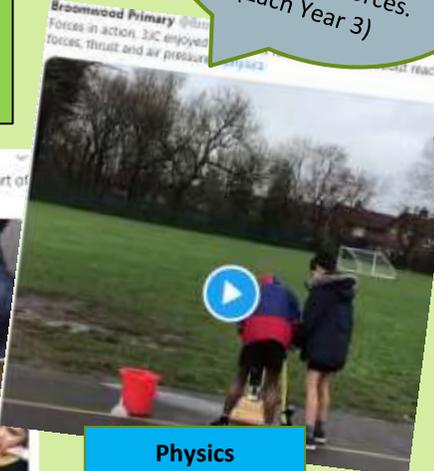


Chemistry

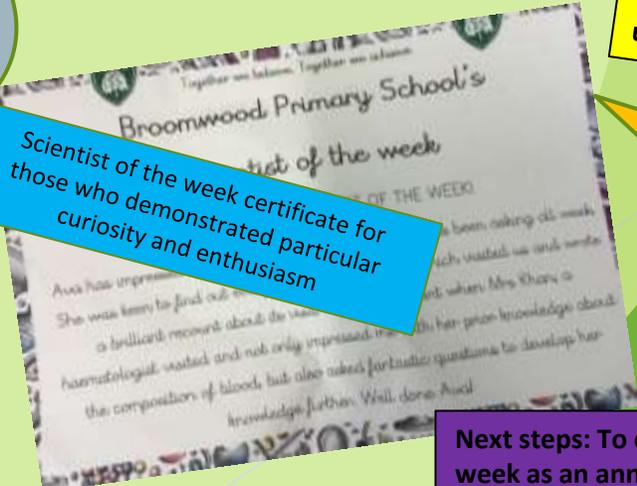
Broomwood Primary @BroomwoodSchool · 2h
Year 2 enjoyed looking for common plants and creating tally charts as part of Science week.



Biology



Physics



WO1 There are appropriate links between science and other learning.

Pre PSQM: Whilst there were some good cross-curricular links with science, we were lacking links with English and computing.

Action: To use QR codes to capture children's learning in a different way.

Electricity linked to street dance in UKS2

Understanding the world linked to art in EYFS

Clear link between Science and maths (data handling) objectives in Year 4

Action: To create greater links with science and computing

Reception children using VR headsets to experience the moon

EYFS using spheros

Teachers attending VEX IQ training session to link computing and science

Impact: Learning is enhanced through first hand experiences and influences children's writing.

Staff Voice: "Alternative ways of recording mean children who may not be considered strong in science can really shine" Year 3 teacher



QR code for Year 2 Vlog

Year 6 piece of writing based on the water cycle including technical vocabulary.

Year 5 Reading comprehension about history of electricity

Impact: Children can demonstrate their understanding of a concept and apply technical vocabulary accurately.

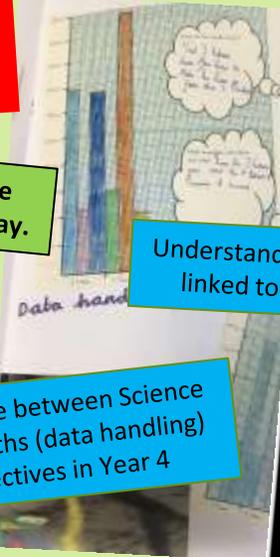
Action: To create more links with literacy to allow children to apply technical vocabulary.

Next Steps: To ensure there are greater links with reading and science in KS2 through reading books.

Year 2 wrote, filmed and edited a Vlog about the SkyBolt rocket

Year 2- Star Chaser Rocket VLOG @ youtube.com

Broomwood Primary School
Check out Yr2's VLOG about the SkyBolt rocket
The class wrote, filmed and helped to edit the vlog



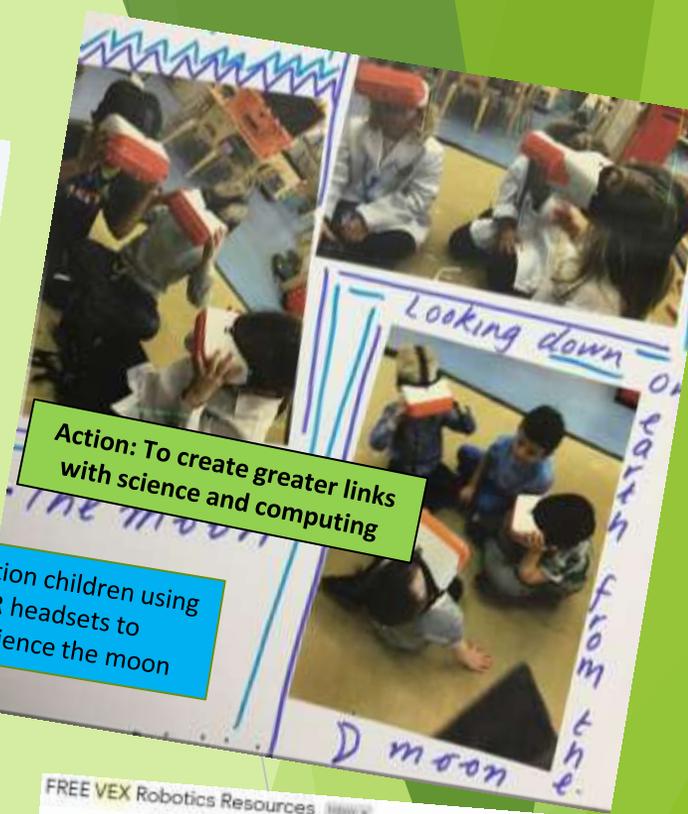
RHS- we are creating the surfaces of the planets in our art using rubbing techniques. Don't forget Jupiter's stripes!



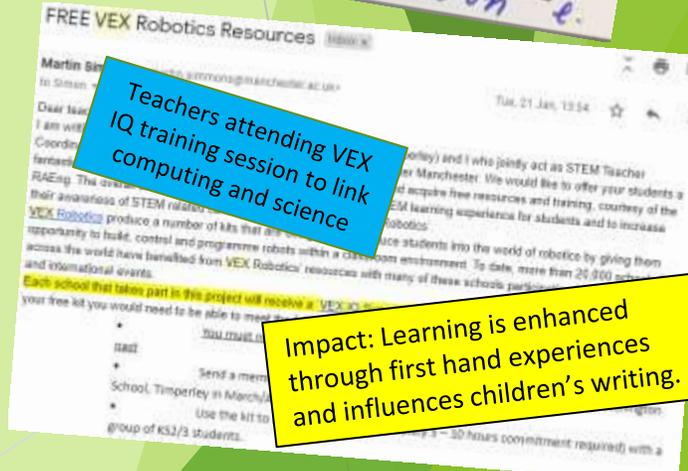
YESUS have done the final performance of their circuit Streetdance today. We enjoyed being their audience and giving them feedback about their amazing dances!



SPHEROS
A ROCKET HAS BROKEN!
EARTH
THE ROCKET HAS BROKEN! BACK TO EARTH TO REPAIR THE ROCKET



Looking down on Earth from the Moon



FREE VEX Robotics Resources
Martin Smith
Dear team,
I am writing to you on behalf of VEX Robotics UK and I who jointly act as STEM Teacher at Broomwood Primary School, Manchester. We would like to offer your students an opportunity to build, control and programme robots within a classroom environment. To date, more than 25,000 schools across the world have benefited from VEX Robotics' resources with many of these schools participating in VEX Robotics competitions.
Each school that takes part in this project will receive a VEX IQ kit for free. Your free kit would need to be able to install the VEX IQ software on a computer.
If you are interested in this project, please email me at simon@manchester.vexrobotics.com or call me on 0161 275 1234.
Yours faithfully,
Martin Smith
STEM Teacher
Broomwood Primary School, Timperley in March 2019
Use the kit to create a VEX IQ robot (30-hour commitment required) with a VEX IQ kit.

WO2: There are appropriate links with families, other schools, communities and outside organisations to enrich science learning.

Pre PSQM: We provided very limited science activities to go beyond the school gate..



Action: To build on projects with families to support science outside of school

EYFS

Broomwood Primary @BroomwoodSchool · Jul 12, 2019
On Thursday, Year 4 were out again at Altrincham Grammar School for Boys enjoying a Science afternoon, furthering our knowledge about electrical circuits!

Year 4 enjoying lab based science at Altrincham Grammar School for Boys.

Broomwood Primary @BroomwoodSchool · Nov 12, 2019
Year 5GC had a great time at the Wellington School Apprentice C this morning! The children worked brilliantly in their teams to create products and make a considerable profit! Thank you @Welly74

Year 5 STEM apprentice challenge at Wellington High School

Action: To link with more high schools to arrange further enhancements in science

Links with Altrincham Grammar School for Boys to look at burning and irreversible changes (Year 5 and 6)

Upcoming VEX IQ training and competition at Wellington High School

Impact: Links with high schools have allowed children to embed their science knowledge in a setting outside of school.

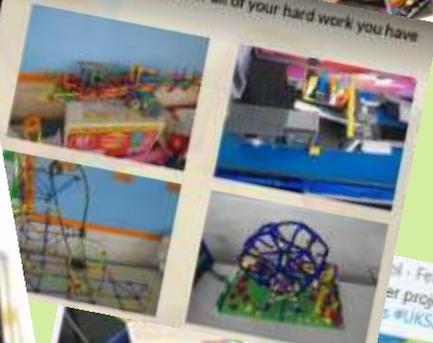
Impact: Parent's are becoming more involved with children's learning in science at home through family projects linked to science across all year groups.

Reception HS asked the children to make rockets, as part of their homework last week. Well done to these children and their grown ups for some amazing entries!



The Nursery children came out in force this week with our home space challenge

Take a look at our Funfair Topic Projects! Well done for all of your hard work you have put in to these amazing creations!

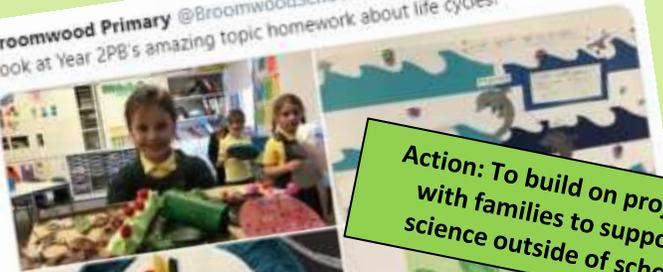


Broomwood Primary @BroomwoodSchool
Have a look at 6SW's fantastic homework projects for our space topic!

KS2



Broomwood Primary @BroomwoodSchool · Feb 17
Look at Year 2PB's amazing topic homework about life cycles!



KS1



Take a look at 4RB's superb robots created for their homework project!



WO2: There are appropriate links with families, other schools, communities and outside organisations to enrich science learning.

Pre PSQM: We didn't often link to topical events which were happening globally or linked to science.

Action: To develop further awareness in school about the environment.

Action: To build in with more topical science events within the school through science visitors



Pre-school making bird feeders



Sports scientist discussing nutrition and the body with Year 5 and 6



A scientist from the Royal Institute showing us some impressive chemistry experiments in workshops

The Woodland Trust donated over 400 trees for each child to plant a tree on the school grounds



Wildlife spotting competition

Impact: Children have developed an understanding of topical issues in science, such as climate change, and the positive changes they can make.



KS 1 would like to say a big thank you to our resident gardening... Mrs. Love for her help planting bulbs today. The children really loved the planting and can't wait to see how they grow over the coming weeks!

Andy, an engineer from Bentley, visiting the children and taking questions about his job

Pupil Voice - "Seeing Andy inspired me to be an engineer when I am older and he told me what I could do" Year 5



Steve, from Star Chaser, showing the Skybolt rocket to the children

Impact: Enthuse children about science and show them a range of careers linked to science and STEM subjects they may have otherwise never encountered.

Next steps: To continue to ensure the curriculum is flexible to make link with topical science events in the future.



Eco Warriors helping around school

Here's everything else we could've included to showcase science at Broomwood Primary School...



Broomwood Primary @BroomwoodSchool - Jan 16
As part of our Stunning Start for our new topic The Circle of Life Yr2 have creating a class piece of art in the style of Andy Goldsworthy. We used natural materials and used them to print in a circular pattern.

Year 6 learning about polymers

EYFS exploring space and writing sentences

SV – "Brilliant to give the children new experiences to topics they may otherwise not come across" – Teaching assistant

Pupil Voice – I love science, I can't believe it is part of everything! Year 5 Pupil

Colour mixing in nursery

Reception with a visiting scientist learning about reactions

KS1 stunning start – finding natural materials and creating a piece of art

Pupil Voice – Science is dead interesting Year 1 pupil

Year 6 focusing on adaptation of different species

Year 3 and 4 exploring human bodies

Year 2 looking at mixing and chemical reactions

Staff Voice: "Showed children jobs linked to STEM which children could aspire to" Year 1 teacher

Learning about Sir Isaac Newton and gravity

Pupil voice experiencing rockets in Year 1

KS1 classifying and grouping living and non living objects

LKS2 learning about PH levels in different solutions

SV: The children now have the passion and enthusiasm to learn about science – Teaching Assistant

Pupil Voice – Science is definitely now my favourite subject – Year 3 child

Staff Voice: It was great to see so many parents supporting children with science – Teaching assistant

Nursery children dressing as scientists

Our PSQM Journey at Broomwood Primary School

Before the PSQM gilt award

- No involvement of parents in science and little science outside of the school gates
- Resources were not organised to make them accessible to teachers
- Teachers were unaware of where to access high quality CPD and online resources
- Science and STEM were embedded throughout the school with a biannual STEM week and weekly science lessons.
- Assessment was only done through teacher marking and feedback bubbles to children and annual target tracker

Highlights after the PSQM gilt award

- Greater enthusiasm for science across the whole school with children, staff and parents.
- Much greater involvement of families in science
- Greater understanding of the development and progression of science.
- CPD for staff and subject knowledge is more secure through resources for planning
- More consistent tracking and assessment of science
- Resources are used more appropriately in science lessons.
- Better understanding of our science capital
- Greater awareness of wider issues in science and how we can help with environmental issues