



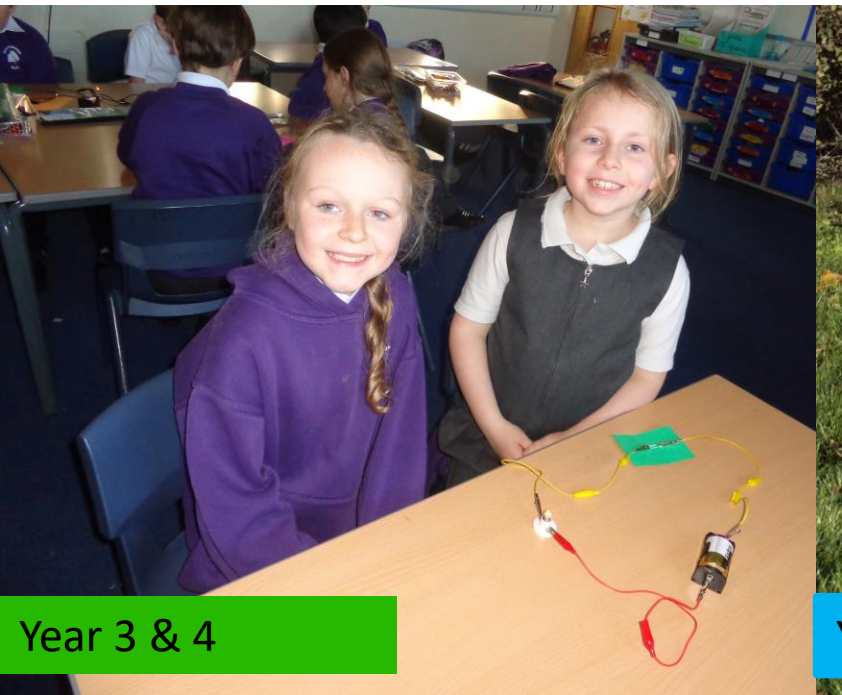
EYFS work



Year 1



Year 2



Year 3 & 4



Year 5



Year 6

# What does good Science look like?



Children being excited about a topic	Active, discussion, collaborative,	Interactive, thought provoking activities to engage all pupils
Interactive.	Good science looks investigative and explorative from a child's point of view.	Hands on
Experiments	Children intrigued to find out more	Engaging and fun.

Subject Leader conducting interviews with Yr1 – Yr6 Children asking their views on Science.

**Pupil's Voice Questionnaire**  
**November 2021**

**What is Science?**  
 Yr2 – Exploring  
 Yr4 – Lots of experiments, it's fun, interesting, learning new things about animals, electric, rocks, how things are made,  
 Yr5 – Experiments, work better, learn about electricity, turn something on, batteries.

**What does good Science look like?** (ask the children what they think a Science lesson should include)  
 Different materials, fun, natural disasters, magnifying glasses, volcanic rock.  
 Use the 'stuff' (apparatus), learn about new things – like fire, electricity traveling, volcano's erupting  
 Experiments, turning things on, exploding volcano's, body parts.

**What do you like about Science?**  
 Children expressed their interest in experiments and that it is fun and can be exciting. They like exploring and being happy controlling something and making explosions.

**What do you find hardest in Science lessons?**  
 They expressed a worry about presenting their findings and writing up the work. They thought that working things out was hard and trying to draw. Concerns were expressed about how it will turn out.

**What would you like to do more of?**  
 The children wanted to more about materials, electric and natural disasters. / They wanted to know more about animals, plants and humans. They wanted to make potions that explode. The older children expressed a desire to work on a real heart.



It's always fun learning new things  
 Theo Y2

I like being a scientist, carrying out experiments  
 Eryk Y6

**Barrowcliff School**  
**Science is good because...**

**Vision**  
 To develop curiosity, enjoyment, investigative skills and a growing understanding of the Science knowledge in pupils. We encourage pupils to raise their own questions and investigate the world in which they live.

- the children are involved in investigating ideas for themselves
- it's interactive
- It's always fun!
- we are looking at lots of different things
- it has well-resourced activities that encourage discussion
- we are predicting what is going to happen
- children are intrigued to find out more about science
- we are always finding new things out
- it's investigative and explorative
- we investigate our own scientific questions

**ACTION:** In a Science Staff meeting, colleagues were asked to make comments about how 'Science was good' in school. They inserted their ideas through a Mentimeter presentation.

**IMPACT:** The Vision statement reflects Barrowcliff's aspirations for Science in school. The strategic decisions are made by the pupils and the staff are embedded in the school community.

# To adopt a range of approaches for monitoring science so it is consistent throughout the school.

### Make it Stick!

Monday 13<sup>th</sup> December 2021  
Topic: Electricity

**Total Score**  
12 out of 15

1. Which of these is a non-electrical appliance?  
 a) Felt tip  
 b) Toaster  
 c) Television.

2. Label the components of this circuit

3. Explain why circuit A has been successful, but circuit B has not.

4. Which types of material do NOT let electricity pass through them easily?  
 a) Conductors  
 b) Insulators

5. Name 3 commonly found items that DO conduct electricity.

*Handwritten notes:*  
 Lit bulb  
 bulb  
 Circuit A... it has not been connected  
 Circuit B... it does have a little hole  
 Give an example RUBBER  
 RAIN FOUNTAIN  
 PIN  
 FOOD

### What happens to the food we eat?

**THE INCREDIBLE BOOK EATING BOX**

**What knowledge do I need to use?**

- Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y2-4) Animals, including humans)
- Describe the basic needs of animals, including humans, for survival (Y2-4) Animals, including humans)
- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2-4) Animals, including humans)
- Identify that animals, including humans, need the right types and amount of nutrition, and that they do not make their own food; they get their nutrition from what they eat. (Y2-4) Animals, including humans).

**What do I want to know?**

*Handwritten questions:*  
 How do the animals survive?  
 How do we eat?  
 Do they eat again?  
 How do our bodies work?  
 How do our bodies get rid of the waste?

### PLANTS

**What have I already learnt?**

*Handwritten notes:*  
 I know about how plants get water, light and nutrients to develop. Conditions for them to grow are the part that they play in the life cycle of flowering plants, including pollination, seed production and seed dispersal.

**What do I want to find out?**

*Handwritten questions:*  
 Why do plants have photosynthesis?  
 What is the difference between plants and animals?  
 Why do plants have a stem? What is a stem? How do the seeds break up the parent seed?

### Book Scrutiny

Subject: Science

Date: 7.10.21 Leaders Involved: J Callaghan, L Brazier

KS1 Books	Lower KS2 Books	Upper KS2 Books
Year 1 Class 4	Year 3 & 4 Classes	Year 5 Class 8
Year 1/2	S&6	Year 6 Classes 9 and 10
Books present - they	Year 4 & 5 Class 7	10

### Book Scrutiny

Subject: Science

Date: 16 December 2021 Leaders Involved: J Callaghan

KS1 Books	Lower KS2 Books	Upper KS2 Books
Year 1 Class 2	Year 3 & 4 Classes	Year 5 Class 8
Year 1/2 Class 3	S&6	Year 6 Classes 9 and 10
Year 2 Class 4	Year 4 & 5 Class 7	10

Common Themes	Actions
'Make it Stick' consistent throughout all year group books.	Ensure these are stuck in for use throughout the Topic period.
Enquiry 'Super Heroes' on all learning objectives from all year groups.	Consistent throughout - with the coloured Hero, it's instant recognition of which Enquiry Type.
Photographic evidence in all books of science experiments and research.	SL to collate all science photographs from staff for display and evidence.

**Future Leadership Focus**

### Materials

Plastic	Fabric
Wood	Metal

**What sticky knowledge do I need to use?**

*Handwritten notes:*  
 Know about similarities and differences in relation to places, objects, materials and living things.  
 Features of their own immediate environment and how environments might vary.  
 Make observations of animals and plants and explain why some things occur, and talk about changes.

**What do I want to find out?**

*Handwritten questions:*  
 What are the properties of some materials?  
 Why are some materials more suitable than others for specific uses?  
 Can some materials change how they look?

### Year 2: Materials Knowledge Mat

**Sticky Knowledge about materials**

- Wood is used to make building and furniture and for making toys and tools.
- Plastic is used to make containers we use every day.
- Glass is used to make windows and bottles.
- Many resources from plants and animals are used to make materials.
- Plastics are used to make many of the things we use every day.
- Metals are used to make many of the things we use every day.
- Paper is used to make books and newspapers.

**Subject Specific Vocabulary**

metal	John Dunlop
plastic	Charles Macintosh
wood	John Dunlop
squeezing	John Dunlop
blending	John Dunlop
twisting	John Dunlop
stretching	John Dunlop

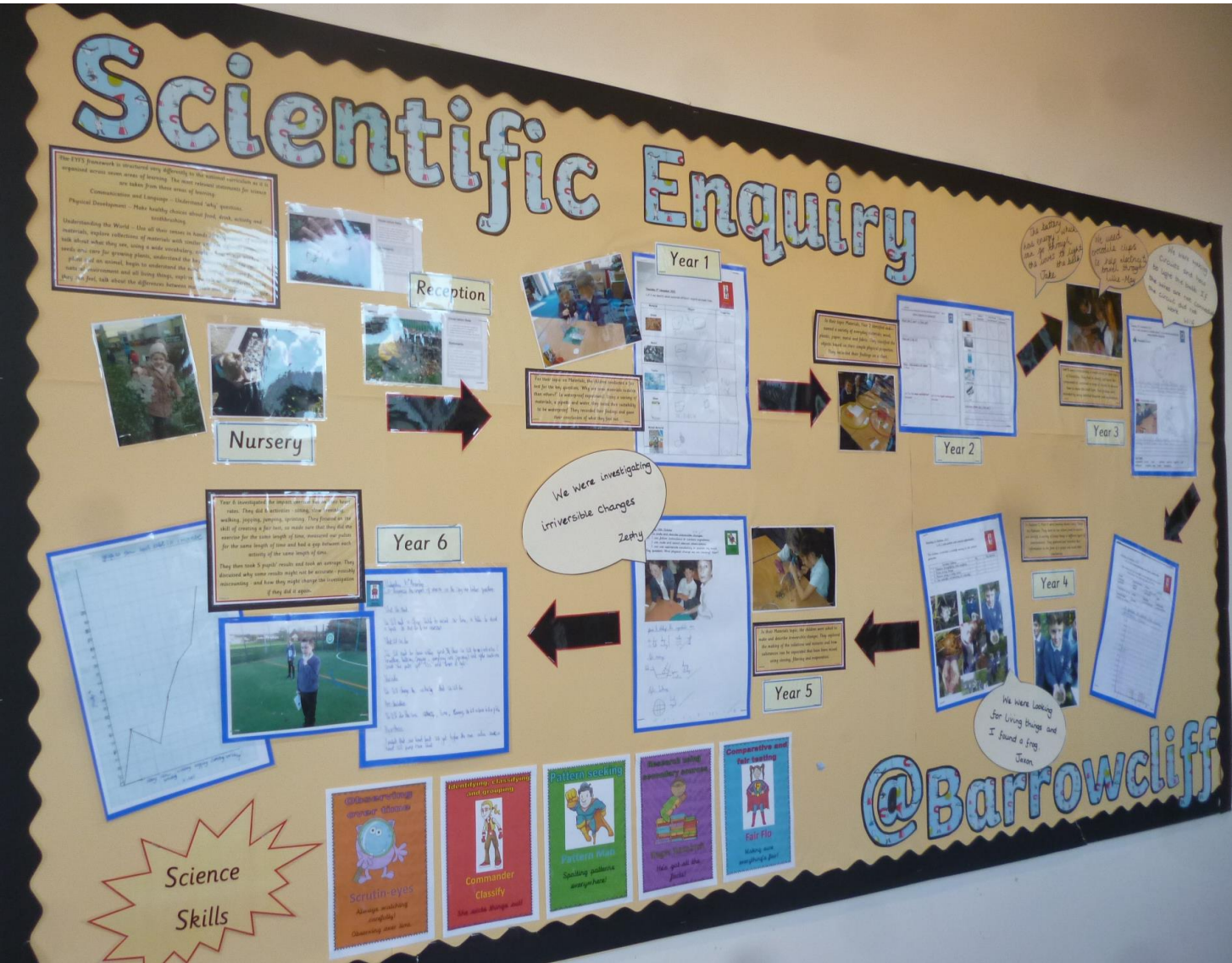
**Action:** The Science Books now have a Title page with the Big Question with children asking their own questions about the Topic, Knowledge Mat for each topic and 'Make it Stick' questions at the end of every topic.



**IMPACT:** The monitoring of the teaching and learning in school has established priorities for future improvements in science.

To use the full range of enquiry types so that we can ask and answer scientific questions.

Action: Classroom displays showing the Enquiry Super Hero's



Action: A whole school display showing scientific enquiry consistently from Nursery to Year 6



IMPACT: Scientific Enquiry is highlighted and discussed in science lessons. Children can identify the types of super hero required for their science enquiry and discuss their learning more effectively.

To use the full range of enquiry types so that we can ask and answer scientific questions.

Monday 15<sup>th</sup> November 2021  
L.O: I can identify which materials different objects are made from.

Material	Object	Properties
Wood	stick LOLZ tic	hard
Metal	can	hard
Plastic	tin Bazocit	Benign
Glass	Window	glaz
Mixed Material	Wool fabric	hard soft

L.O: I can classify materials by their properties. Choose 5 different objects. Draw and label them then list their properties?  
15 & 18 /11/21

Year 1 work on Materials

We were *Commander Classifying* with the materials and sorting them into groups

Wednesday 19<sup>th</sup> January 2022  
L.O: I can use secondary resources to research how to make a healthy fruit salad.  
I can identify healthy items of food.

How to make a Fruit salad

You will need:

- bowl
- chopping board
- knife
- strawberries
- tangerine
- apple
- oranges
- orange juice

What you do:


1. Wash your hands
2. Cut your fruit
3. A NEXT put it in the bowl
4. then pour the orange juice in there
5. Mix it

Lo

Wednesday 26<sup>th</sup> January 2022  
L.O: I can use my research and instructions to make a healthy fruit salad.  
We used our instructions to make a healthy fruit salad. We described the taste of the different fruits and explained how eating a healthy snack made us feel.

The pineapple was very nice. The oranges tasted juicy. The med was nice. The strawberry was scrumptious and delicious.

How did your healthy snack feel? Full of energy



Year 2 work on Healthy Living

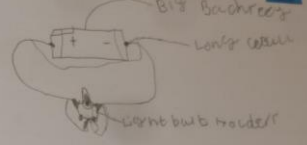
We used *Roger Researcher* when we looked for ingredients for a fruit salad

Year 3 work on Electricity


Using *Fair Flo*, we had to ensure fair testing

Tuesday 9<sup>th</sup> November 2021 Rubber wiring  
L.O: I can construct a simple circuit. I can record my findings using labelled diagrams.

Successful Circuit



Unsuccessful circuit



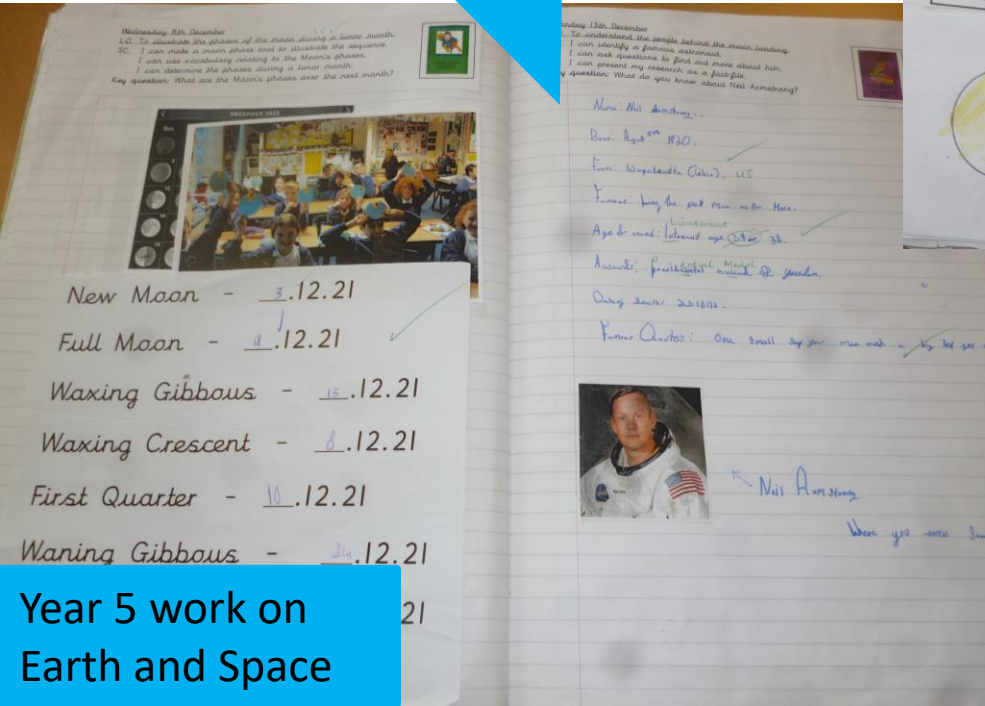
It does NOT work because wire is not connected to the battery.

connected complete loop break incomplete worked

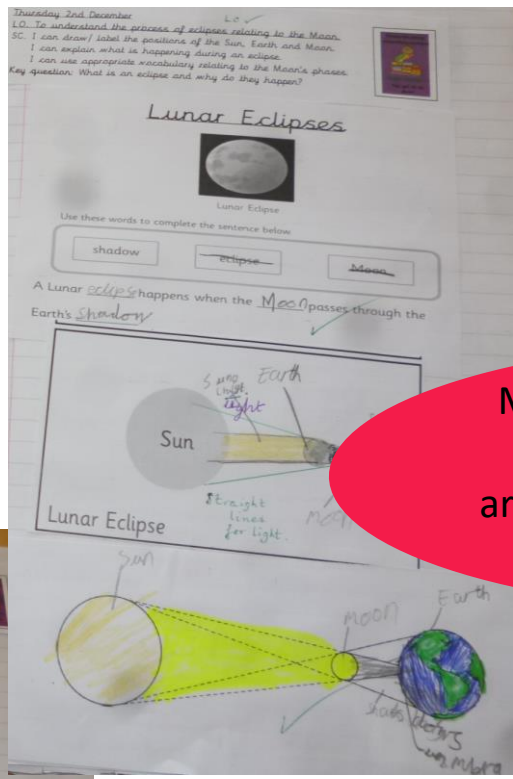
IMPACT: Evidence in children's Science Books indicate the enjoyment and depth of knowledge and understanding of science enquiry.

To use the full range of enquiry types so that we can ask and answer scientific questions.

At this stage learning about Space, we were spotting patterns monitoring the moon phases, drawing a Lunar eclipse and researching the importance of Neil Armstrong.



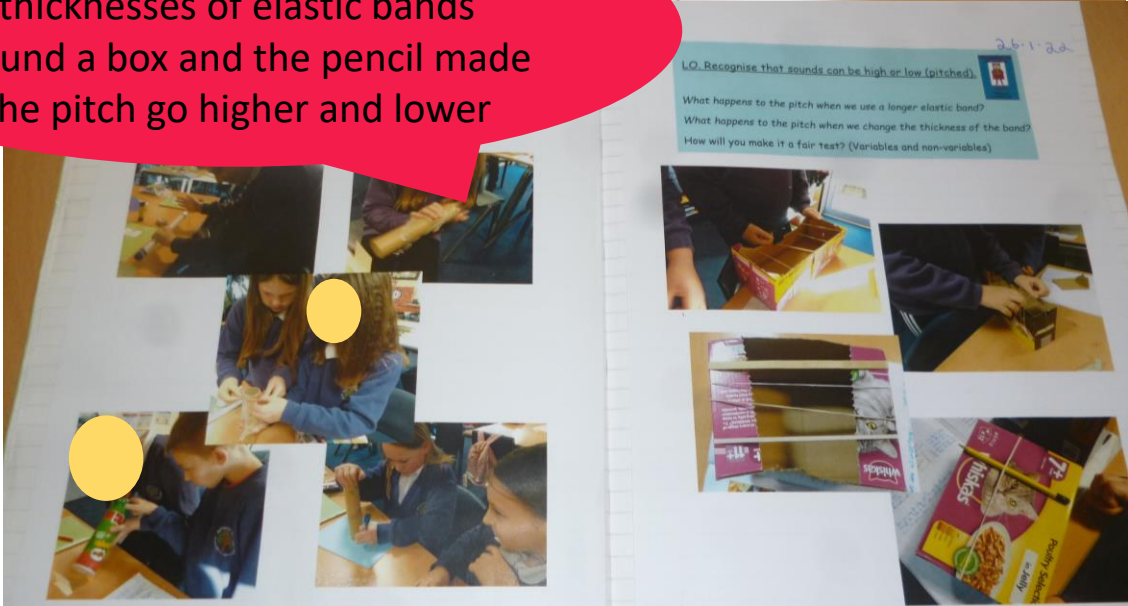
Year 5 work on Earth and Space



Year 6 children proudly talking about their work on Sound



Making a Fair test with different thicknesses of elastic bands around a box and the pencil made the pitch go higher and lower



IMPACT: There is an increase in amount of practical work being carried out, developing greater understanding and independence.

To give children opportunities to talk about their Science experiences.



It was like magic. The clip was moving around my picture!



We used ICT to compare the rainfall and daylight over the year



We safely used the knife to get the ingredients ready for our fruit salad. We learned about healthy foods.



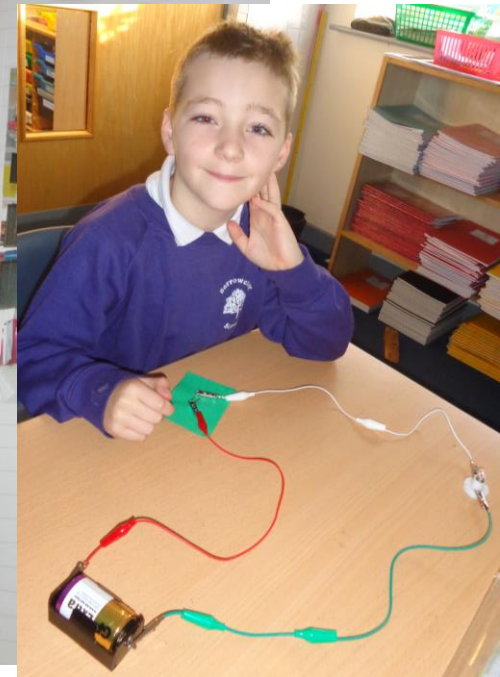
We were checking our pulse after running. I could feel that my heart was beating faster.

I learned that the wires all needed to be connected together with the battery in a circuit for the bulb to light. We investigated which material conducted electricity and recorded the findings in a chart.

Monday 29th November  
 L.O: I can carry out a fair test. I can record results in a table. I can use my results to draw conclusions

Item	Observed outcome	Prediction correct or incorrect?
Bulb on	Bulb on	X✓
Bulb off	Bulb off	✓
Zinc	bulb on	✓
tin foil	bulb on	✓
crayon	bulb off	✓
styro	bulb on	✓
candle	bulb off	✓
log	bulb off	✓
pin	off	✓
wool	off	✓
plastic	off	✓
penicillin	off	✓

Word bank  
 ruler screw cotton wool  
 tin foil pig pebble  
 candle



The staples were attracted to the magnet but we sieved out the marbles from the sand.



IMPACT: Pupil voice is used to develop our Science curriculum, through questioning of pupil's views and their attitudes to Science, supports the children's enjoyment of science and develop planning.

To include parents in science activities at home.

To grow sunflowers  
 First I got some sunflower seeds  
 then I put them in a pot  
 next I put them in a pot  
 after that I watered them  
 Finally I enjoyed watching them grow  
 To grow more sunflowers  
 put them on a plate, pieces of kitchen roll  
 and put them in the boiler part of  
 the house!  
 I hope the sunflowers will grow  
 them again!



When the flower died, we saved the seeds to plant again this year.

Action: Children are encouraged to share the science projects at home through the Dojo App.

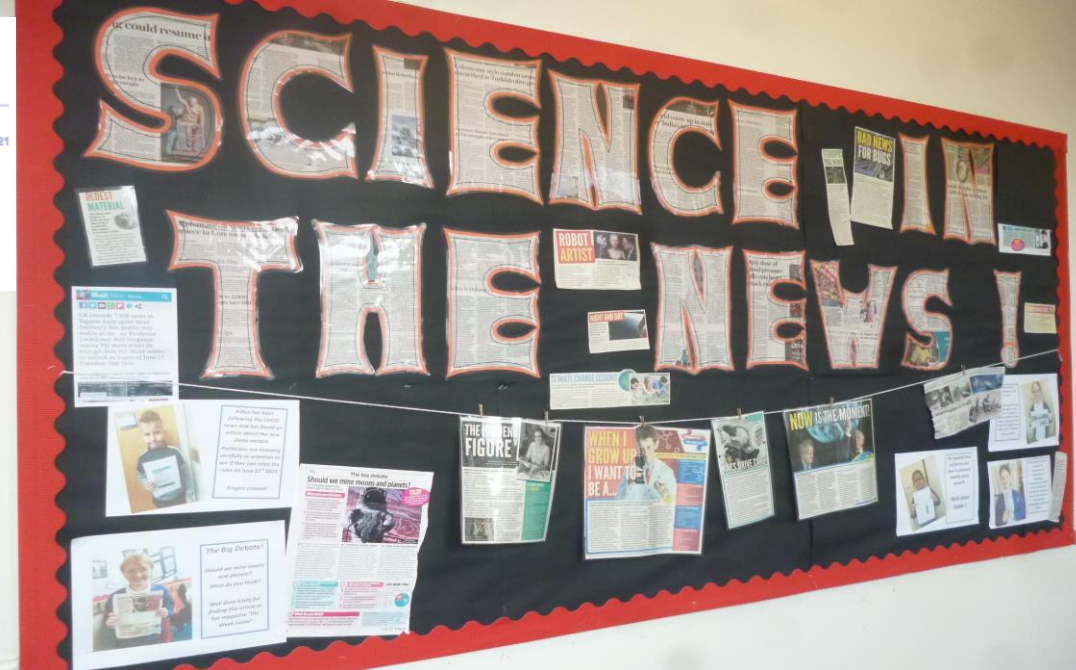
Like Comment

**Mrs. Brazier** Jul 16, 2021  
 Teacher  
 These and the pictures are great Harvey, very helpful for me growing mine. Keep me updated with how tall they grow! 10 dojos!

Like Comment

**Mrs. Brazier** Jul 16, 2021  
 Teacher  
 Hi Harvey! Wow! Your sunflower looks fantastic. It's getting really big.

**Mrs. Brazier** Jul 16, 2021  
 Teacher  
 I took your tip of putting some sunflower seeds on some damp paper towel first to get them germinate. They are just to grow now in a pot outside.



Photos of Wilf & Ellen's tree identification walk. Thanks S

Action: Children are inspired to engage with Science competitions outside of school. This promotes pride and enjoyment in science.

### Science Competition

We would like you to research into a famous Scientist;

- What were/are they famous for?
- What was their scientific discovery/invention?
- Do we still use their discovery or invention?

Exciting scientific prizes will be given for KSI, lower Key Stage 2 and upper Key Stage 2

With your writing, include an image/drawing of your chosen scientist and what they discovered/invented.

Looking forward to seeing your entries.

All entries given to Miss Callaghan or Mrs Brazier by Friday 5<sup>th</sup> February 2022



IMPACT: Children are using their investigative skills to find out about Science capital at home through research, experiments and recording their work. A good deal of participation.

RAISING THE PROFILE OF SCIENCE AT BARROWCLIFF SCHOOL  
Jac Callaghan  
7<sup>th</sup> September 2020

CONTINUING TO RAISE THE PROFILE OF SCIENCE AT BARROWCLIFF SCHOOL

**GOV.UK**

**Coronavirus (COVID-19)**  
(/coronavirus)

- Home (<https://www.gov.uk/>)
- Education, training and skills (<https://www.gov.uk/government/organisations/department-for-education>)
- Inspections and performance of education providers (<https://www.gov.uk/education/inspections-providers>)
- Research review series: science (<https://www.gov.uk/government/publications/research-review-series-science>)

**Ofsted**  
raising standards  
improving lives  
(<https://www.gov.uk/government/organisations/ofsted>)

Jac Callaghan  
28<sup>th</sup> September 2021

Welcome  
Science Staff Meeting  
12 January 2022  
Jac Callaghan  
Science Lead

Research and analysis  
**Research review series: science**  
Published 29 April 2021  
**Contents**  
Introduction  
Ambition for all  
Curriculum progression: what it means to get better at science  
Organising knowledge within the subject curriculum  
Other curricular considerations  
Curriculum materials

*Subject Leader keeping up with research into high-quality science curriculums, assessment and pedagogy to inform staff.*

*They were great for my own subject knowledge of the topic, and also for plenty of information that could be shared in lessons.*

*Useful investigation ideas  
Useful clarification of scientific terms and how we can ensure the children understand these*

*I found the training gave a lot of background knowledge which was helpful in supporting my subject knowledge*

**IMPACT:** Good resource that teachers can look up and use at their own discretion.



### Ash Grove Wildflower Meadow

*Learning Together, Growing Together.*



Beyond Housing

Ash Grove Wild Flower Meadow



Class \_\_\_\_\_

Carving	Number of Votes
Butterfly - Brown	
Butterfly - Blue	
Bumble Bee	
Ladybird	
Grasshopper	
Cricket	
Woodpecker	
Owl	
Squirrel	
Snail	

Barrowcliff School got involved in the Ash Grove Wildflower Meadow project

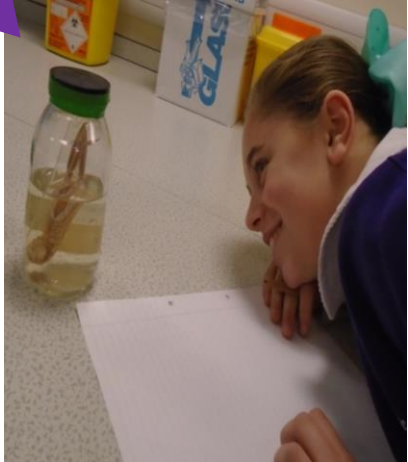
We could choose what sculptures we wanted for the wild garden area

During lockdown periods, there has been less opportunities to engage in enrichment activities.

We met a real Scientist who showed us around the lab.

### Visit to Hull University

Year 6: Working in the lab at Hull University.



IMPACT: School is continuing to develop links to enhance enrichment opportunities post Covid.

# TO PROVIDE A SCIENCE CLUB TO DEVELOP AND ENHANCE SCIENCE LEARNING



We learnt how to grow vegetables and we made soup from the carrots we planted.



Our School Cook showed us how to cook in the school kitchen.



IMPACT: Children enjoyed the hands-on learning, problem solving and creativity. Their understanding of Health and Safety along with science concepts were stimulated.