



Bilston C of E Junior School PSQM 2021/22

Key:



PSQM criteria



Before PSQM



Comments &
captions



Progress of
criteria



Impact

SL A - the creation and implementation of a clear vision for science

No vision or principles in place at the start of PSQM (September 2021)

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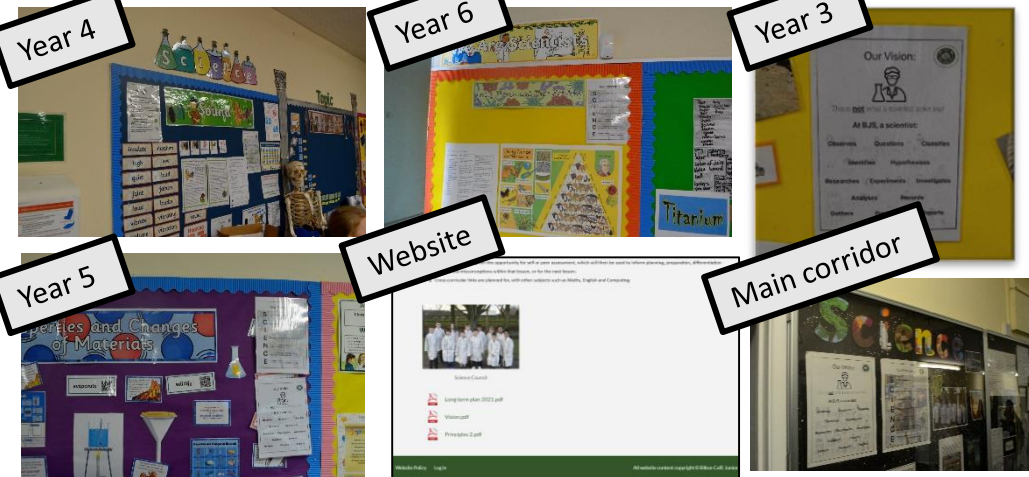


Staff voted (online) alongside children (post-it notes) for their principles. Showing all stakeholders were involved in the process.

Children during a science assembly drew what they thought a scientist looked like. This informed the science vision. Not being about appearance but a development of scientific skills.



Impact: Vision and principles on display across all classroom's Science displays, in our main corridor and linked onto the school website.



Our Principles:

Created by staff, children and the science council

S Scientific vocabulary is used and understood.

C Concepts are learnt through practical experiments and investigations.

I Independent and group tasks are carried out.

E Engaged, enthused and motivated children.

N New ideas create curiosity and lead to quality questions being asked.

C Connects existing knowledge to new learning and to the real world.

E Exciting lessons are taught by teachers who are confident in their subject knowledge.

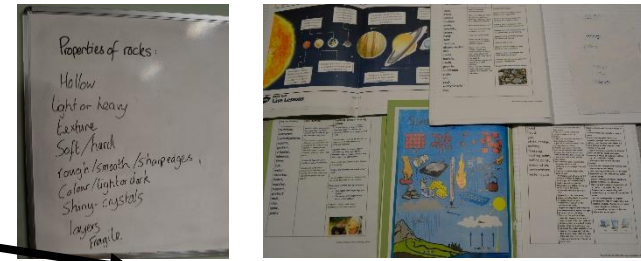
Our Vision:

This is not what a scientist looks like!

At BJS, a scientist:

- Observes
- Questions
- Classifies
- Identifies
- Hypothesises
- Researches
- Experiments
- Investigates
- Analyses
- Records
- Gathers
- Presents
- Reports

Principles in action:



Scientific vocabulary



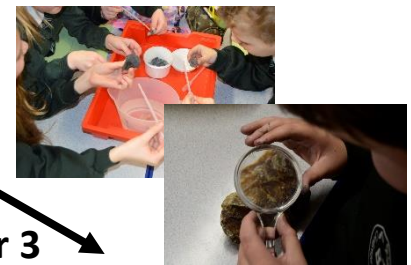
Curious – Year 5



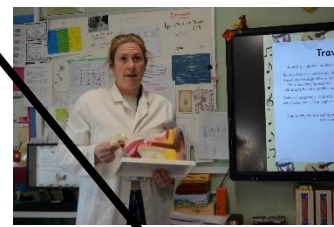
Practical – Year 4



Connects knowledge – Year 3



Independent and group tasks – Year 3



Exciting lessons – Year 4



Engaged and Enthused in a real lab at a secondary school – Year 6

T C - regular and safe use of up-to-date quality resources

Experience Science outdoors:

Working safely:



Pupil voice – May 2021 (slide 4 – monitoring)

- They all wanted to go outside more for lessons and gave examples of when they thought they could have gone outside.
 - Ideally they wanted me to build a laboratory! So wind would not be a factor in experiments.



Sep 2021

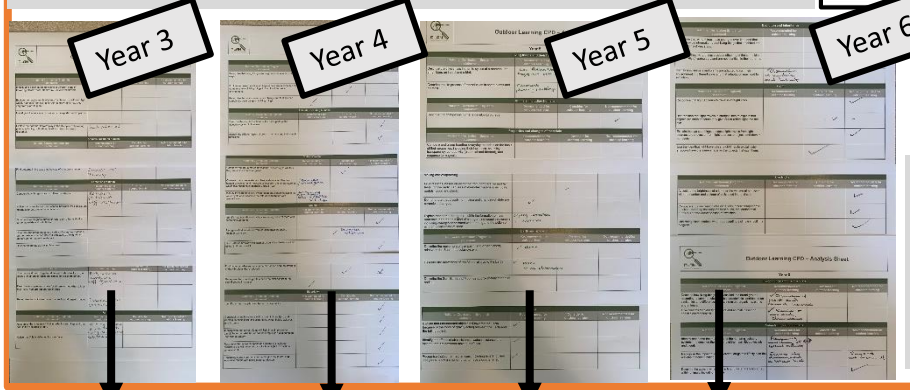
- Tasks:
- Complete teacher survey (link on e-mail).
 - Fill in class assessment document for recent topics.
 - Watch videos on Focused Assessment: <https://pstt.org.uk/resources/curriculum-materials/assessment>
 - Meet in year teams to discuss a practical investigation for each topic using the focused assessment plans.
 - Come up with a suggestion for taking science outside the classroom for each topic/ email me.

Based on this pupil voice feedback, as staff meeting on taking learning outside was given. All year teams were given time to plan outdoor & child-led activities.



Examples above of existing safety displays.

E-mail shared with all staff. This is a task to still be completed with the Science Council. We discussed this in a meeting (see SDL) and poster competition for Summer 2 term was discussed. Be Safe book was purchased as a PDF so it could be shared with staff digitally by e-mail in our school shared folder for reference.



Planned outdoor activities from each year group. Template from PLAN – outdoor learning CPD

"Much easier to use as a digital PDF"
 Year 4
Impact: Children often wear lab coats and goggles for practical investigations by habit to show safety principles.

"I get to be a real scientist for a lesson"
 Year 5

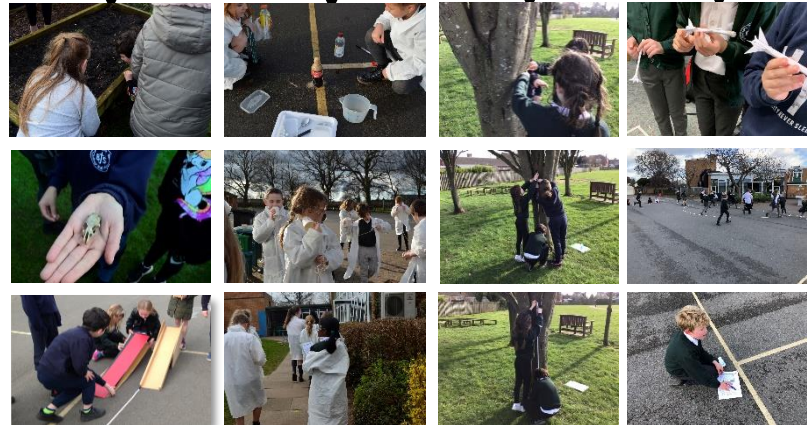
Essential Health and Safety Information
 It is important that all teachers are aware of the responsibility they have regarding health and safety both inside and outside the classroom. Teachers need to take account of both the children's and their own health and safety when involved in Science activities. Information on health and safety issues and safety points specific to individual science investigations, teachers should:

1. Science NC Document
2. A.S.E "Be Safe" Document kept in the science cupboard and a digital copy is in the Whole School Shared folder

Any accidents that do occur must be reported to the office, further assistance obtained from a qualified first aider and the accident recorded on Iris adapt.

Policy update:

Need to work with Science council to decide how best to display working safely principles – one suggestion was using safety rangers. This is crucial going forward so that children and staff know the legal requirements.



Impact: Lots of opportunities have been presented to all children in all year groups to carry out Scientific work outside. Children are engaged and enthused and through pupil voice it is clear they love it!

"We get to go outside! I wish we could do it in other subjects" - Year 5

LA - the purposes and process of science enquiry



<https://seerih-innovations.org/enquiringscience4all/>



Through an informal staff survey, teachers did not know the enquiry types. Between the SL and Science council it was decided that this would become a main focus for Science week to help raise their profile.

Science Poster competition
5 types of Scientific enquiry

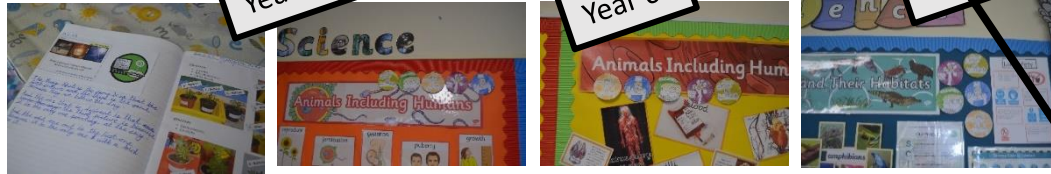
What are they?
Can you make your own symbols?
Can you draw or include photographs of examples?

Entries to Mr Evans by Friday 20th May
Prizes for the winner in each year group



"My parents are going to be so proud when they find out I work!"
Isla, Year 4

Poster competition: Through Science week (May 2022- SDL log) enquiry types became a focus with prizes for winning entries



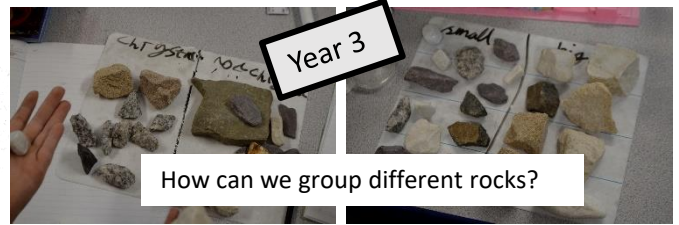
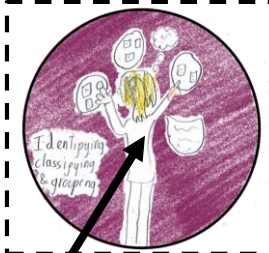
New symbols on display

Impact: Child-led enquiry recorded in the back of Science book. Mapped out in long-term planning and enquiry questions are recorded down. This approach also formed part of my NPQML project (see slides 5 & 6).

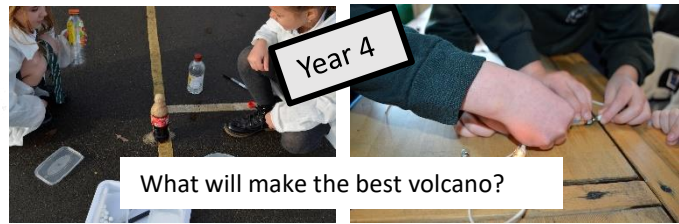


Assembly: Delivery of a whole school assembly on Science enquiry.

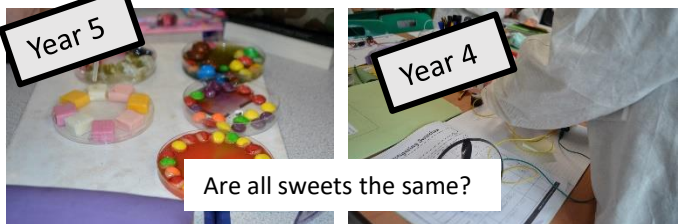
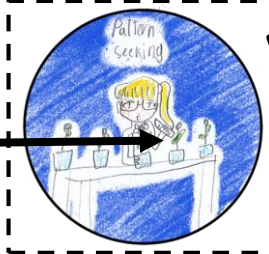
Year	Enquiry Type	Enquiry Question	Findings
Year 3	Pattern seeking	How can we group different rocks?	...
Year 4	Comparing	What will make the best volcano?	...
Year 5	Identifying, classifying & grouping	Are all sweets the same?	...
Year 6	Observing over time	What happens to bread/ plants over time?	...
Year 4	Research using secondary sources	What is a lifecycle?	...



How can we group different rocks?



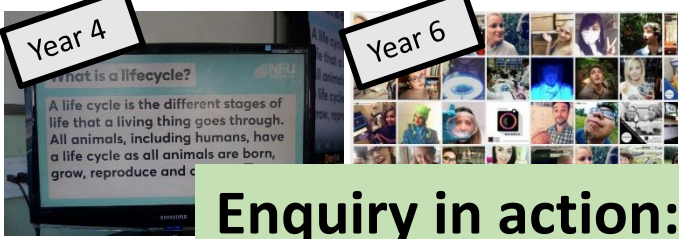
What will make the best volcano?



Are all sweets the same?



What happens to bread/ plants over time?



What is a lifecycle?

Enquiry in action:

LC - the importance of, and strategies for, developing all children's science capital

Your own science capital

- What you know?
- How you think?
- What you do?
- Who do you know?



Science capital teaching approach

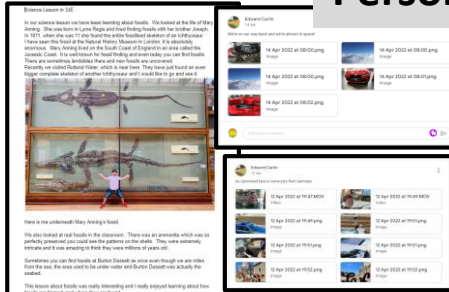


- Foundations: Broadening what counts
- Pillar 1: Personalising & localising
- Pillar 2: Eliciting, valuing and linking
- Pillar 3: Building the science capital dimensions

PSQM – 'Introducing Science Capital' Spotlight: This provided me with a starting point to provide the evidence that we as school were developing children's capital.

Pillar 2: Eliciting, valuing & linking:

Personal experiences

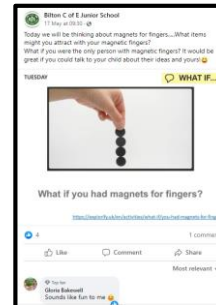


"My Dad works with cars and he has told be all about drag and aerodynamics" - Edward, Year 3

Capital has increased but I wish I had arranged for a STEM visitor to attend our Science week and more through the school year.

Science week

"I need to do well in Science because I want to be a surgeon like my parents" - Year 4



Pillar 3: Building the Science capital dimensions:

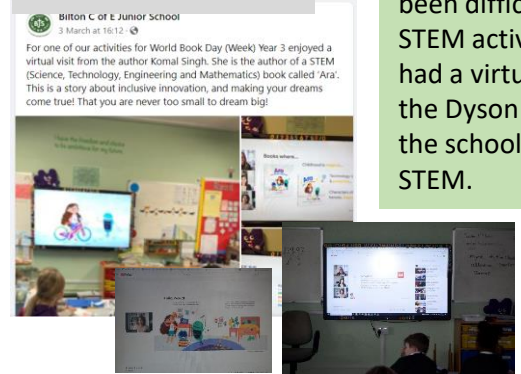
Family experience

"My sister is a Scientist, can we interview her?" - Xavier, Year 6

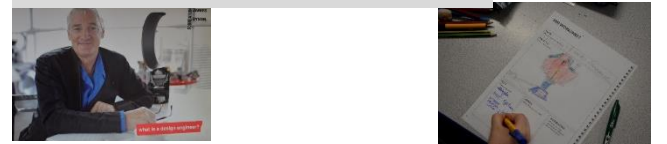


STEM author

Impact: Due to COVID, it has been difficult to arrange STEM activities but we have had a virtual author and used the Dyson project box around the school to link to real life STEM.



Dyson: STEM project



Pillar 1: Personalising & Localising:

Local walk, ageing of rock



Around school



Forest School



Impact: Science linked to allotment and Forest school has been really successful, looking at growth and forces. Fizz pop has provided an after school club (Slide 14) but I wish I had created a bespoke club myself.

Allotment



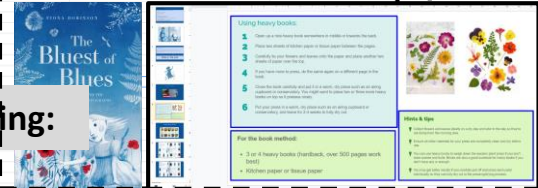
WO A - cross-curricular planning that links science to other areas of learning

Links to English:

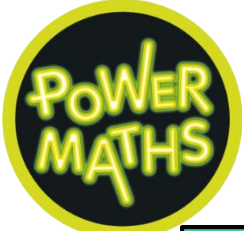
Both medium and long term writing planning take into account Science and topic links. Science in green.

Year	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2	
Year 3	Poetry - Famous Letter - Flavia Benjamin Black History Month Biography - Flavia Benjamin Black History Month	Narrative - The Really Marmite (Topic) - Narrative - The Christmas Star	Narrative - Last and Round - adventure	Narrative - Black Rock - myth Narrative - poetry	True story of the 3 little pigs	The Elephant and the Pigeon	
Year 4	Narrative (adventure) - Escape from Pompeii	Persuasive writing - Holiday brochure WS Instructions - How to make a Bull Purse	Narrative (sci-fi/fantasy) - Iron Man	Letters - informal Playwriting - Midsummer's dream	Letters - informal Playwriting - Midsummer's dream	Narrative (mystery) - Choochitl WS Explanation - How to make chocolate Speech - The Chocolate Tree Kukulcan Instructions (IT) - how to make a comic	
Year 5	Biography - The Really Marmite (Topic) - Biography - The Really Marmite (Topic)	Biography (Topic - Victorians) Narrative (Topic - Victorians) Letter of complaint The Red Piper of Hamelin (2022-23 de VS Letter to Surolog)	Monopoly The Red Piper of Hamelin (2022-23 move)	Biography (Topic - The scientist) Playwriting (Journey to J'sburg) Narrative from a different perspective (Journey to J'sburg) Instructions (wood rolling)	Head (Topic - Alpine informal letter) Balanced argument - Screen time TWS (Topic - relationship) The Present - narrative TWS Poetry The Halfpenny Unit plan		
Year 6	Biography - Walter Tull (Topic - WW1)	Poetry - Narrative / Free verse (Topic - WW1) Letter - Topic WW1 Letter from the trenches Report - Recount - Giant's Headless Police Report	Narrative - Titanic (Sci-Fi / Mystery)	Narrative - Alike - Horror/ Suspense Newspaper - Alike			

Reading CLPE Power of Reading:



Links to Maths:



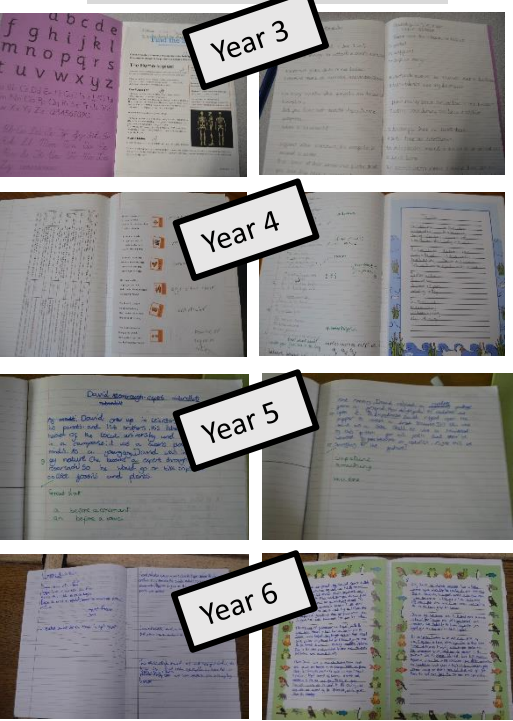
Year 3 – bar graphs

Year 4 – negative numbers/ using thermometers.

Year 5 – comparing/ rounding

Year 5 – using decimals

English books:



Year 3

Year 4

Year 5

Year 6

Impact: Science has been specifically linked to our writing curriculum. Every year group has completed a writing unit linked to Science or Scientist. Year 3 – The skeleton, pangolins and Mary Anning. Year 4 – rivers and the water cycle. Year 5 – Space and David Attenborough. Year 6 Charles Darwin and origin of the species.

“Are we doing Science in English?” - Year 5



Skills contextualised in other subjects:



Art and Design – fossils, links to stone age topic

Topic – Egyptians – ancient beliefs of the sun

Computing – Kahoot! quizzes

Impact: provides assessment data (slide 11)

“Can we do another Kahoot?” - Year 3

Jubilee artwork stamps – created by light and shadow

Creating branching databases using knowledge of grouping and classifying.

WO B - further links for visits and competitions with other organisations and education sites to enhance enrichment.

Fizz pop after school Science club:

No science club run in school since 2019

5 week afterschool club run from 27th April by Fizz Pop Science



Year	Teacher	Parent	Child	Parent	Child
Year 3	Miss Jones	Mr Smith	Tom	Mr Jones	Emily
Year 4	Miss Brown	Ms White	James	Ms Black	Charlotte
Year 6	Mr Green	Mr Grey	Oliver	Ms Gold	Isabella

Year 4 Year 6 Year 3

Online video sent to advertise the after-school club, shared with the whole school

100% attendance at the science club. Mostly in Year 3 / 4 and with one Year 6 child. Lunchtime SEND group run (see slide 6).

"I love going to Fizz Pop, it's been great to do an afterschool club about Science!"

Ruby, Year 3

Competitions (see next slide also):



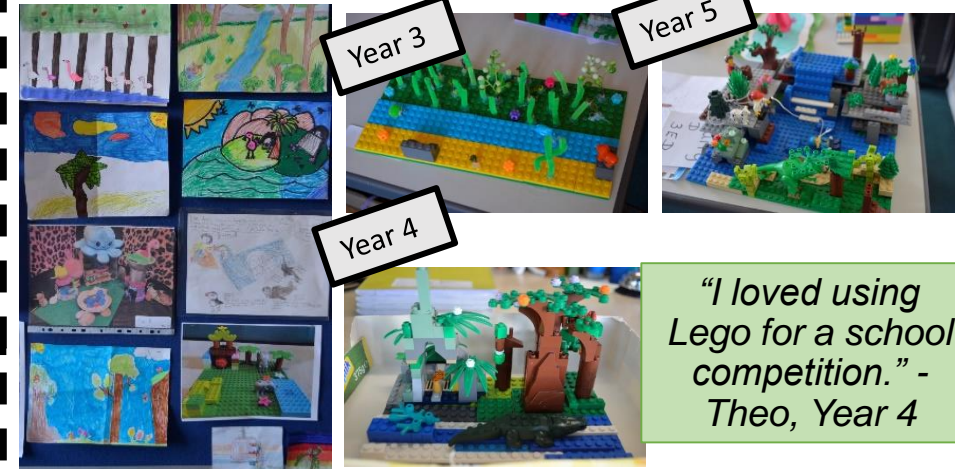
Science week poster competition - Growth



Entries to Mr Evans by 11th April

- Creativity in approach – Innovative angle on the competition theme
- Content – Clear, accurate and informative about a STEM topic
- Effective communication – presented and communicated in an interesting way

Red Nose Day: Habitats



Year 3 Year 5
Year 4

"I loved using Lego for a school competition." - Theo, Year 4

Parental involvement through homework:

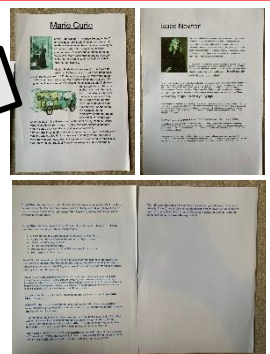
Parents not allowed in school until Easter 2022 due to COVID restrictions.



Home learning sheets sent home. Other Science work set on Google Classroom. Examples of completed homework.

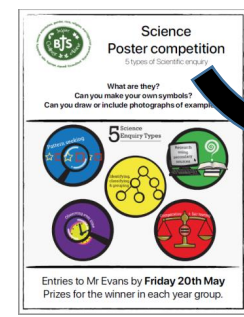


Explorify at home



Research of scientists and an amazing box of science created at home.

Enquiry types poster (see slide 9)



WO B - further links for visits and competitions with other organisations and education sites to enhance enrichment.

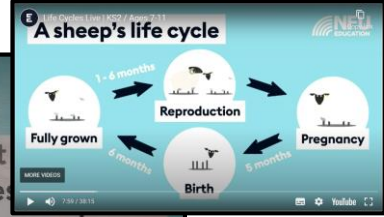
Enrichment in Science:



NFU Mutual

March 2022

What is a lifecycle?
A life cycle is the different life that a living thing goes through. All animals, including humans, go through a life cycle as all animals grow, reproduce and die.



WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Year 4

April 2022



FIZZPOP SCIENCE

Year 3 - 6 - May 2022



Everyone back in the hall!

Leicester Museums & Galleries

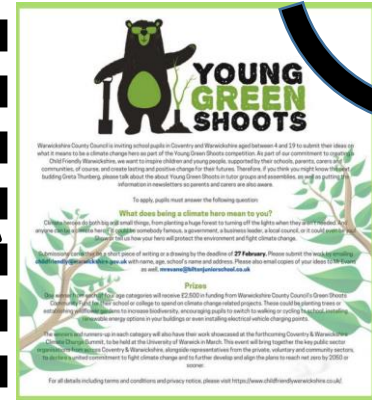
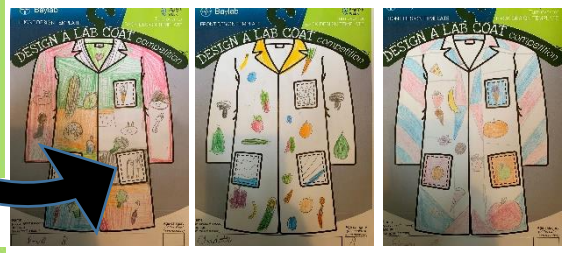
Year 3 - June 2022



Impact: Despite the recent challenges, children have been involved with organisations either online or latterly in-person. These now need to be built on going forward.

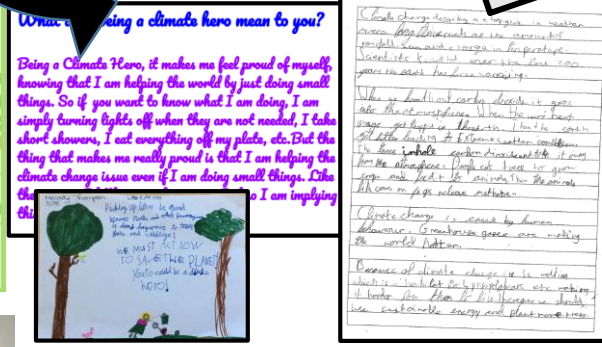
Current issues - enrichment:

Food, food waste & sustainability:



Being a climate hero:

Year 6



Year 5 - Art - Quote work - Greta Thunberg
"Humanity is now standing at a crossroads"



Links to support transition:

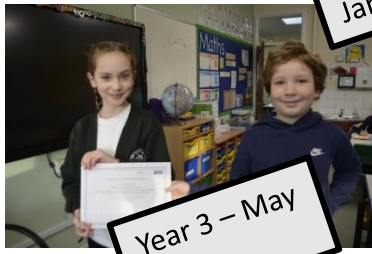
Year 5



Previous links to our local secondary school (Rugby High School) have gone due to COVID. Going forward these should be re-established to show Science at secondary level.

SEVERN TRENT

Year 3 - Jan 2022



Year 3 - May 2022



"Great song, can they come again?" - Year 3