Morland Area C. of E. Primary School PSQM Portfolio

Science is an exciting and dynamic subject that engages the children's curiosity about the world around them.

Science Leadership A - Vision

Science is an exciting and dynamic subject that engages the children's curiosity about the world around them at Morland.

Key:

During PSQM
Impact

SL used criterion activity, used with all staff during staff meeting to discuss visions and principles in science. Staff input to vision

Science Policy and Science Curriculum page on School website was updated with our vision, updated.

PSQM
Primary Science Quality Mark

SL Ai Activity - Principles and vision for science teaching and learning

SL Ai Principles and vision for science teaching and learning

Science Policy and **Visions and Principles** document are on our school website https://www.morlandarea.cumbria.sch.uk/

Science Visions and Principles PDF

Impact: All staff using CUSP to plan Science this year. Supports ECT and helps continuity of science teaching through school. Knowledge Notes support the links between lessons especially used in conjunction with Knowledge organisers and our topic road map. Links to planning is on website so parents and the community can see the links and topics our children are making in school.

Next Steps: - Embed the vision so it continues to be cascaded through school and our wider community.

Key Need:- Develop a clear vision for Science teaching and learning

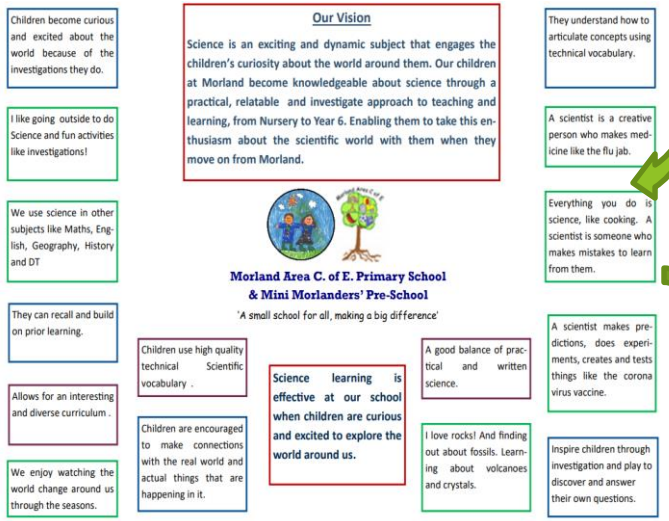
Centralised display to raise the profile of science, promote vision and principles and celebrate outstanding work.

Impact: With a clear vision for science at Morland teachers use it to provide exciting lessons that encourage the curiosity of the children to explore science (Monitoring and student voice)

Visions and Principles

Children, staff and governors contributed to developing our Science School Vision. Children believe our science is an exciting and dynamic subject and this is a strength. We now use these as a reflection during our activities to link our topics and link previous learning.

https://www.morlandarea.cumbria.sch.uk/page/?title=Science&pid=40



Impact: From the staff and pupil voice we created our updated visions and principles document. This is shared in many places (School website/policy documents/ whole school and classroom displays) to enable all visitors/parents/staff the opportunity to see what we value most about our teaching and learning of science.

Science Leadership A - Vision

Science is an exciting and dynamic subject that engages the children's curiosity about the world around them at Morland.

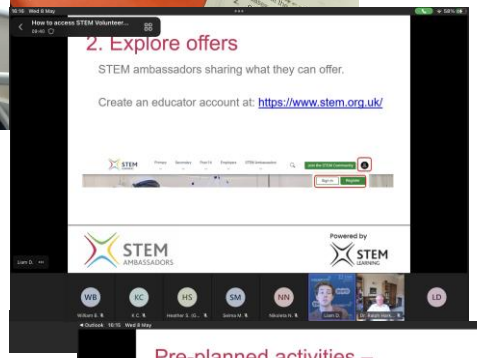
The Science policy is updated every 2 years.
The teaching and learning in science was rated as good during the deep dive during our last OFSTED inspection - 21.1.20

''The scheme of work for science reflects the national curriculum intentions. Leaders have considered the knowledge and investigative skills they want pupils to acquire. Pupils remember their science learning well. They recall previous learning about earth and space. They know that different materials have different melting points. The subject leader has not checked if the planned progression of knowledge and development of investigative skills are having the intended impact." Ofsted 2020

To check planned progression Science is monitored by the Subject leader/Governors as part of a 3 year monitoring cycle. Monitoring extract below (13.10.23) shows the impact of improvements since the last Ofsted

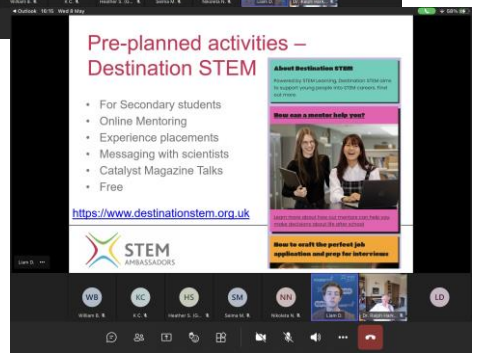
What evidence have you gathered?	• Monitoring of Science books in Class 2-4 • Science displays • Lesson observations • Pupil voice
What does it tell you?	Science is taught well across the school and there is a strong sense of children in all classes thinking as Scientist. Children enjoy learning about Science, they enjoy going on trips to see Science in action in the wider world. They enjoy learning about Science outside in our school grounds and the local area. All children make good progress across the school. Assessments at the end of Y2 and Y6 show good understanding and progression of the topics within Science. All children make good progress throughout the school. SEND children are also able to make good progress in Science as activities are scaffolded so that they can access the learning. Children enjoy carrying out Scientific investigations and they enjoy exploring the different types of scientific enquiry
	(comparative/fair testing, research, observing over time, pattern seeking, identifying/grouping and classifying, and problem solving) Assessment should now be a focus in all year groups – explore TAPs Introduction of the new scheme CUSP embed for planning Evaluation of CUSP after 12 months of using it with Teachers

Ensuring a dynamic subject :
Quality first teaching, Stem ambassador engagement, science investigation club and outside involvement of experts e.g CDEC and Frankie Kennett from Garden Organic to add expertise.



garden organic
www.gardenorganic.org.uk

The monitoring cycle has led to an evolving subject that aspires to be alive, exciting, current, has impact, and provides a rich knowledge base for future scientists



Morland Area CE Primary
Monitoring timetable

Year	2022-23	2023-24	2024-25	2025-26	2026-27
subjects	Reading English GPS PE D.T. Geography Art	Reading Maths Science History Computing EYFS	Reading English (Write) Music French	Reading Maths PE DT Geography Art	Reading English GPS Science History Computing EYFS

Science Leadership B – Strategic support – allowing improvement to take place

Key Need: - develop and consolidate our strategic support for Science.

Science was recognised as an equally important core subject alongside Maths and English. Science targets are part of the SIP. SL has always been given time to engage with quality CPD.

Enable SL release time to allow improvement to take place within Science over the next 3 years and beyond as new monitoring cycle becomes established .

Subject Leader has re-developed Long Term Planning for whole school. This is on School website.

Subject Leader CPD

Subject Leader has focused CPD – watched various spotlight videos on PSQM website including introducing science capital and leading change

Time to promote Science becomes a priority as part of the PSQM and as part of monitoring cycle by SL and Governors monitoring cycle. Release time to support SL to enable improvement and change to take place. See SIP below

Subject Leader – science development log of CPD

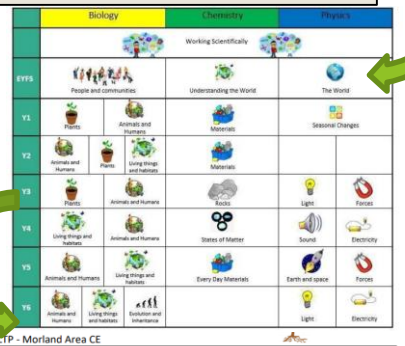
17.10.23	PSQM Training session 2 Watched spotlight video leading change/introducing science capital	BJ

SIP identified a need to include EYFS in LTP – SL developed and updated LTP to include this.

PSQM

SL Spotlight video: The importance of reflective thinking for subject leaders

SL Spotlight video: The importance of reflective thinking for subject leaders



Science LTP - Morland Area CE

EYFS: Natural World (People and Communities & The World)

Natural World	• Explore the natural world, make observations and draw pictures of animals and plants. • Know some similarities and differences between our own environment and others – draw on experiences and information read in class. • Understand effects of changing seasons on world around us.				
Working Scientifically Taught through the topics	• Ask questions • Talk about what is being done in order to answer their questions • Make observations • Talk about why things happen • Talk about changes				
EYFS	**Plants**	**Animals and Humans**	**Living things and Habitats**	**Everyday Materials**	***Seasonal Changes***
Nursery	• Explore plants and seeds and discuss their similarities and differences.	• Make observations of animals. • Explain why something occur and talk about the change.	• Talk about their own environment,	• Explore a variety of materials and discuss their properties. • Collect various objects from the outdoor environment and allow children to explore and play with them (stones, wood, bricks)	• To discuss how day changes to night.
Reception	• Explore the different parts of a plant. • To discuss where some foods come	• Identify some common animals and categorise. E.g. pets, farm, under the sea, jungle etc.	• Explore plants from local environment and their features.	• Identify some common materials and compare and describe.	• Talk about changes in the different seasons

	Strategic intention 2: Behaviour and attitudes • To develop a healthy and safe school, where children can make decisions about their social, moral, personal and spiritual development.				
Strategic goals	**Evaluation/evidence this is needed**	**Action needed**	**Timescale and resources**	**Leader/ Governor committee**	**Evaluation**
2:2 Create opportunity for staff to develop second key co-ordinator role	**Monitoring whole school curriculum and breadth of study for foundation subjects. Subject leads developing subject through performance management route**	**Staff meeting to review monitoring of planning and implementation of action plans. Staff to report on their subjects as part of performance management. Subject leaders to track subject coverage in individual classes – CUSP resources (Alex Bedford)**	**Release time for teachers to scrutinise books and planning. Do this a cycle in conjunction with performance management so all subjects being reviewed in depth. July 24**	**All staff with foundation subject coordination. BJ - Science (Read) AT – Computing JB – History SH – RE (Cont) EW - EYFS LDS - Maths**	

B. Developments:

- Particularly following periods of home tuition during Covid, Becky intends to ensure that Science has a high profile in school and is regarded as exciting by the pupils and of equal importance to core subjects, for example by carrying out as much practical science as possible.
- Data handling is being mapped in Science and Maths to ensure that teaching of skills can be coordinated in both subjects.
- Becky plans to extend children's vocabulary both in Science and English throughout the school with display.

All of the above show that Science delivery is thoroughly planned, continually evaluated and developed, and is likely to promote interest, enjoyment and achievement. (SA)

18.11.21 – previous monitoring progress from SIP shows science has always been a priority

Action Points What do we need to do next? CPD? **Visits?** **Visitors?** **Staff training?**	Check a range of engaging and fun activities are available in class 1 Check that MTP is on the GD to show progression and ideas for the term.	Big focus on behaviour and quality of work to ensure all children can make good progress. Develop quizzes to gain a greater idea of progression of all children Use assessment sheet to check who achieves targets to help aid assessment of children progress.	Focus on quality of work and implementing CUSP planning. Develop TAPs and unit quizzes for assessment to have a greater idea of progression of all children.	Continue high quality of work and implementing CUSP planning. Develop TAPs for assessment to have a greater idea of progression of all children. Is there more opportunity for children to learn outside sometimes and use the school grounds to aid learning in certain topics?
		Action Plan Points 2023-24 To refine assessments to ensure Science assessment has impact – Children to be given feedback on how to improve to ensure progression.		

Review schemes, amend and add to resources in line with New Agreed Syllabus to support child centred approach and creativity.
Access training opportunities for staff.
Science club?
Science focus day or Science week to increase profile of Science as a core subject in school?
PSQM – Subject Coordinator to undertake Primary Science Quality Mark award 2023-2024 focusing on raising the profile of Science in school to that of core subject.

Trips – time? (some science is covered in cross – topic trips e.g. York – Vikings/rocks/ archaeology at dig. Cat Bells – Environmental Science.) Exploring Science opportunities in the school grounds to aid learning – this is already done to good effect – continue to develop this area – especially for class 1 + 2. Pond dipping?

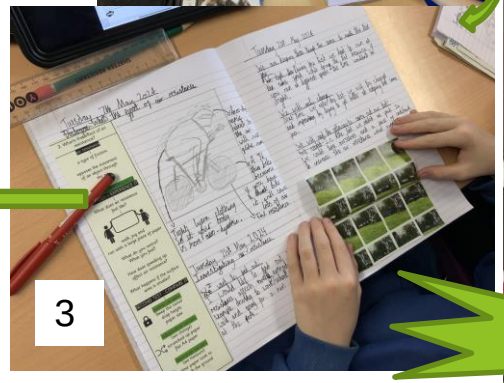
10.11.23 – current monitoring extract

Impact: LTP enables Subject Leader and teachers of science to use approaches that are consistent across school and raises standards. This is evident during subject monitoring - in lesson observations and walk throughs/science monitoring/ Governor monitoring.

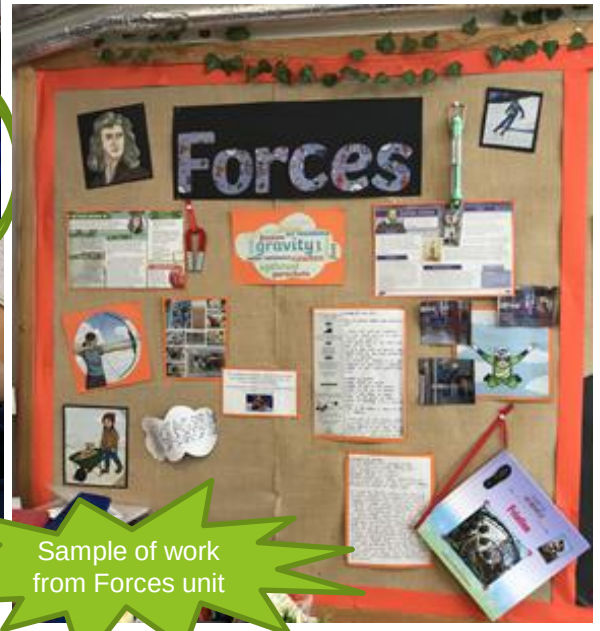
Next Steps: - continue to prioritise science SL and ensure have release time in order to maintain progress made and ensure quality of Science remains high.

Science Leadership C - Monitoring

Key Need:- *Continue focus on Science monitoring, specifically on integrating investigations more thoroughly into lessons/planning.*

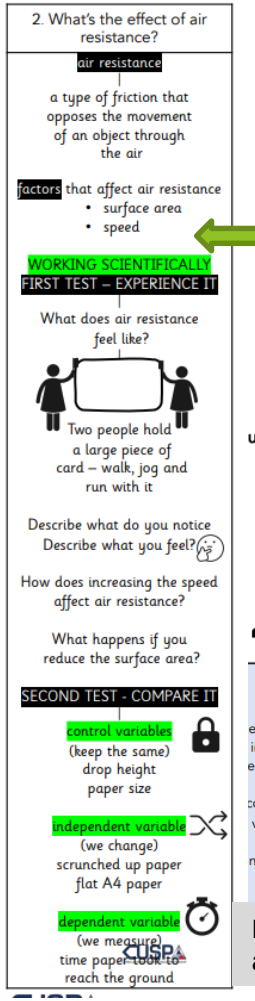


Children are accessing well planned CUSP resources that have sequenced progressive lessons adapted by teachers.



Sample of work from Forces unit

Y1/2 materials

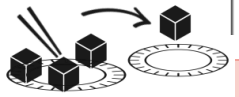


pupils should be taught to:

explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
identify the effects of air resistance, water resistance and friction, that act between moving surfaces
recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect

Plan enquiries, including recognising and controlling variables where necessary	Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work	Take measurements, using a range of scientific equipment, with increasing accuracy and precision	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models	Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions	Present findings in written form, displays and other presentations	Use test results to make predictions to set up further comparative and fair tests	Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments

Working scientifically
TEST IT
using chopsticks, move cubes of jelly from one board to another



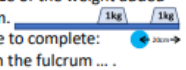
Now cover the jelly cubes in cooking oil and repeat the test
How has the oil changed the effect of friction?

CUSP

Prior learning and investigative skills are overt in all units, subject knowledge videos available .

Predicting **Measuring** IPROF

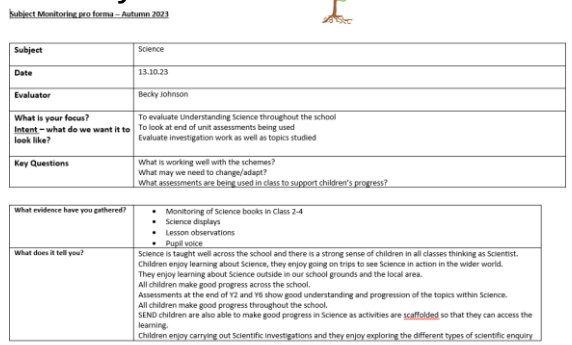
Set up the equipment as shown in the diagram below. Place a 1kg weight at one end of the metre ruler and position the fulcrum 20cm away from that end / load. Predict how far a second 1kg weight must be placed from the fulcrum to make the rod balance before estimating and then measuring the distance. Repeat using, e.g. 800g, 600g, 400g etc. Encourage pupils to record their results clearly in a table so they can compare their predictions with the actual results and describe the relationship between the size of the weight added and the distance it is placed from the fulcrum.



Support pupils by providing a sentence frame to complete:
As the size of the weight … , its distance from the fulcrum … .
Challenge: Sketch a graph to indicate the relationship identified.

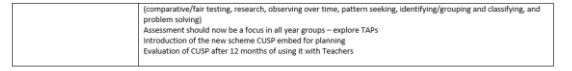
Next Steps:
Maintain the use of CUSP as a planning tool and progess in to 2nd year of the science long term plan, light touch monitoring correlating planning/national curriculum and book work. Monitor impact through assessment and pupil/teacher feedback.

Monitoring template for science used by SL and Governor



subject Monitoring pro forma – Autumn 2023

Subject	Science
Date	13.10.23
Evaluator	Becky Johnson
What is your focus? Intent – what do we want it to look like?	To evaluate Understanding Science throughout the school To look at end of unit assessments being used Evaluate investigation work as well as topics studied
Key Questions	What is working well with the schemes? What may we need to change/adapt? What assessments are being used in class to support children's progress?
What evidence have you gathered?	• Monitoring of Science books in Class 2-4 • Science displays • Lesson observations • Pupil voice
What does it tell you?	Science is taught well across the school and there is a strong sense of children in all classes thinking as Scientist. Children enjoy learning about Science, they enjoy going on trips to see Science in action in the wider world. They enjoy learning about Science outside in our school grounds and the local area. All children make good progress across the school. Assessments at the end of Y2 and Y6 show good understanding and progression of the topics within Science. All children make good progress throughout the school. SEND children are also able to make good progress in Science as activities are scaffolded so that they can access the learning. Children enjoy carrying out Scientific investigations and they enjoy exploring the different types of scientific enquiry



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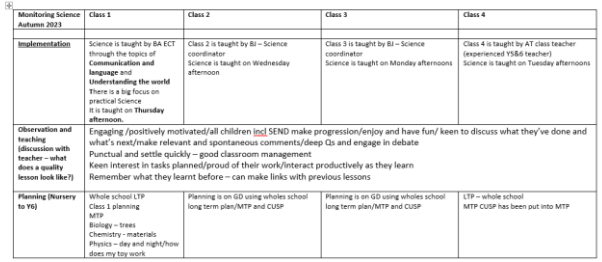


Monitoring Science Autumn 2023	Class 1	Class 2	Class 3	Class 4
Implementation	Science is taught by BA ECT through the topics of Communication and language and Understanding the world There is a big focus on practical Science It is taught on Thursday afternoon.	Class 2 is taught by BJ – Science coordinator Science is taught on Wednesday afternoon	Class 3 is taught by BJ – Science coordinator Science is taught on Monday afternoons	Class 4 is taught by AT class teacher (experienced YS&6 teacher) Science is taught on Tuesday afternoons
Observation and teaching (discussion with teacher – what does a quality lesson look like?)	Engaging /positively motivated/all children incl SEND make progression/enjoy and have fun/ keen to discuss what they've done and what's next/make relevant and spontaneous comments/deep Qs and engage in debate Punctual and settle quickly – good classroom management Keen interest in tasks planned/proud of their work/interact productively as they learn Remember what they learnt before – can make links with previous lessons			
Planning (Nursery to Y6)	Whole school LTP Class 1 planning MTP Biology – trees Chemistry – materials Physics – day and night/how does my toy work	Planning is on GD using wholes school long term plan/MTP and CUSP	Planning is on GD using wholes school long term plan/MTP and CUSP	LTP – whole school MTP CUSP has been put into MTP

Impact:
Children have excellent knowledge and understanding of investigative science, They are confident to transfer skills learned and as a result previous learning builds and sustains the learning of new concepts. Children are skilled in identifying variables and analysing data.

Science Teaching A – Engagement with CPD

Key Need:- *Strengthen and develop teaching through engagement with professional development.*

Signposting of relevant CPD in science to aid science knowledge of National curriculum and EYFS statutory framework - especially ECT/RQT. We also use our experienced staff and those with science degrees/background to mentor new staff. Creating a collegiate approach to support others and for all staff engagement with good quality CPD.

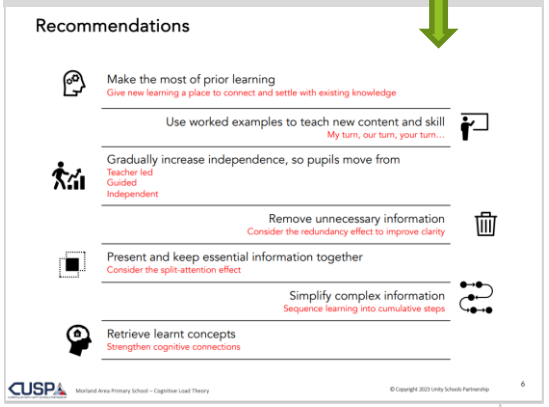
Understanding the World

Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension.

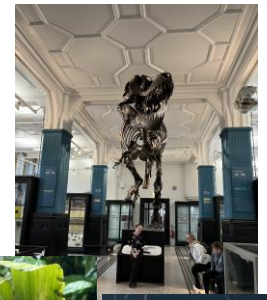
Science Capital

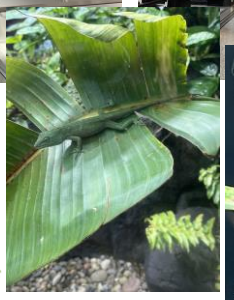
https://youtu.be/Sp8N_B0Bn50

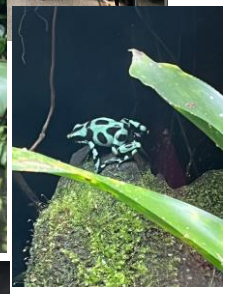
Slide from CUSP training on cognitive load theory. All staff attended this bespoke in house training over 3 twilights.

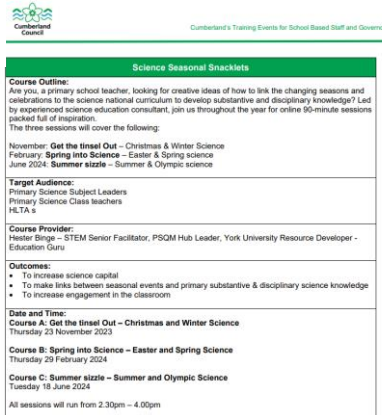


Impact: Teachers and practitioners have relevant and up to date subject knowledge that follows the ethos of the school with practical and highly engaging lessons that peak the curiosity of our children and plant the seeds for STEM pathways in the future.









We have strong links with external providers to support science teaching.
We have refocused CPD on development of high quality training.
impact ECO –schools and other providers to ensure science capital

PENRITH & DISTRICT RED SQUIRREL GROUP

Eden Rivers Trust

CDEC Cumbria as a Beacon of Global Citizenship

STEMFirst

CUSP PRIMARY SCIENCE CURRICULUM WITH UNITY SCHOOLS PARTNERSHIP

Eco-Schools

MANCHESTER MUSEUM

National Centre for Computing Education

ClickView

EUREKA! the national children's museum

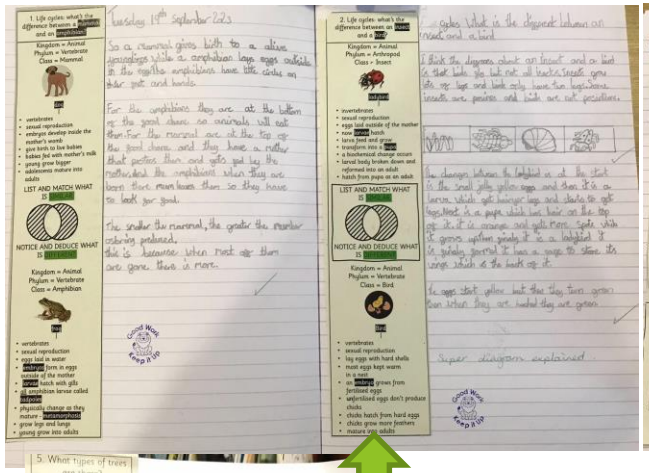
Next Steps: To develop a data bank of CPD providers to support teaching and learning. To link science units of work to specific providers e.g. habitats and Eden Rivers Trust on a rolling programme.

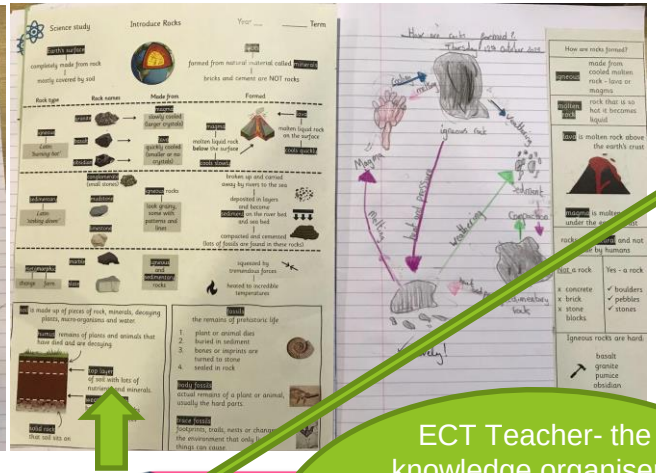
Science Teaching B – Use effective teaching and learning strategies

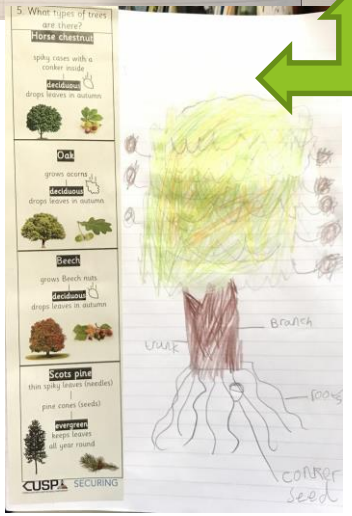
Key Need:- *Use range of effective teaching and learning strategies*

Use of CUSP by all teachers to enable planning is consistent through school and enables reflection on learning from previous teaching.

Teachers are supported to use a range of effective strategies for teaching science which challenge and support the learning needs of the children.

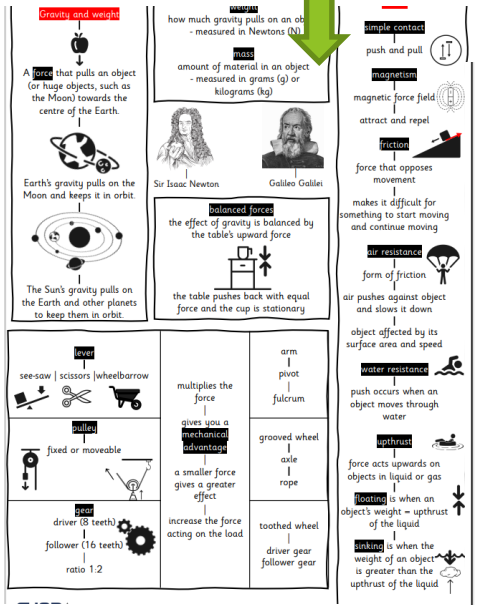


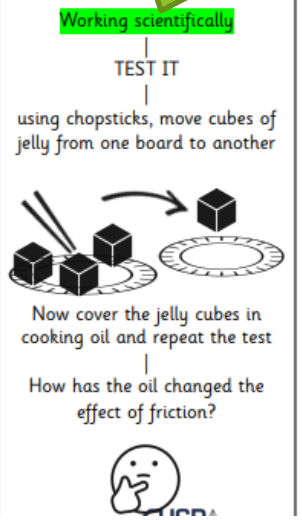




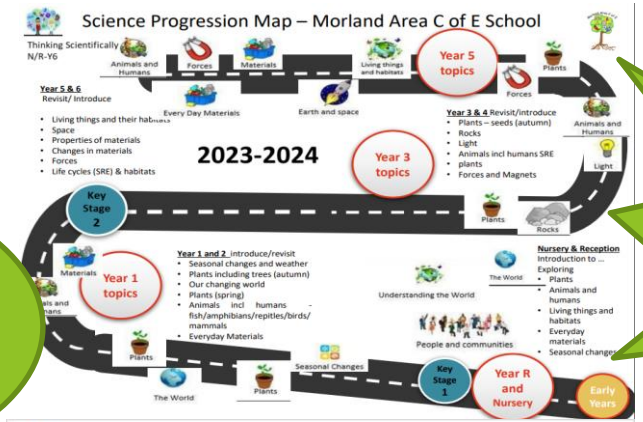
SCIENCE CUSP PRIMARY
CURRICULUM WITH UNITY SCHOOLS PARTNERSHIP

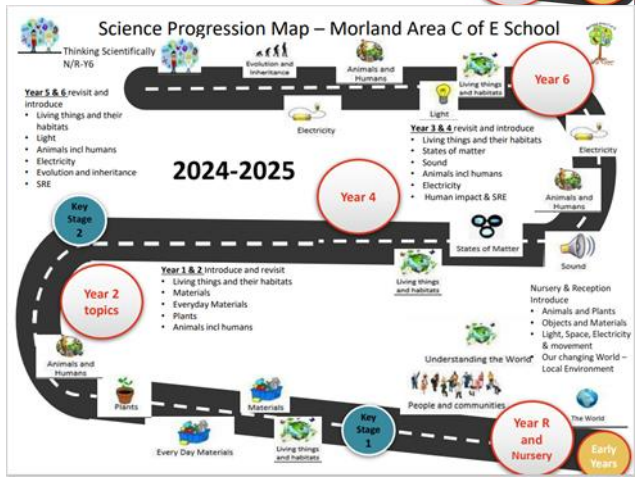
ECT Teacher- the knowledge organisers have helped immensely with children's understanding and sequencing rich planning that gives depth. BA





From lesson observations and book looks when monitoring it is evident that the use of KO and KN are being used through school to good effect, aiding children's learning and understanding of the topic.





The science SL has developed bespoke road maps to map the curriculum making it clear where key learning takes place.

Impact: All staff using CUSP to plan Science this year. Supports ECT and helps continuity of science teaching through school. Knowledge Notes support the links between lessons especially used in conjunction with *Knowledge organisers* and our topic road map. Links to planning is on website so parents and the community can see the links and topics our children are making in school.

https://www.morlandarea.cumbria.sch.uk/attachments/download.asp?file=160&type=pdf

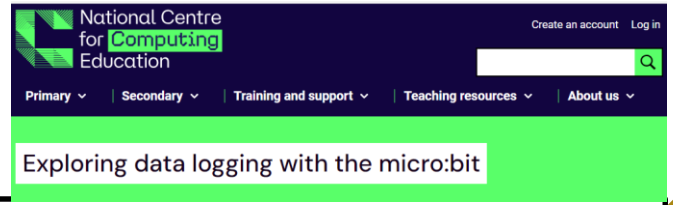
Next Steps: Evaluation of the scheme, what is going well and what needs improved.

Science Teaching C - Resources

Key Need:- *Regular and safe use of up-to-date quality resources.*

Resources are audited annually – well organised and accessible, so the children can regularly and safely use appropriate practical and digital resources, information texts and outdoor environment.

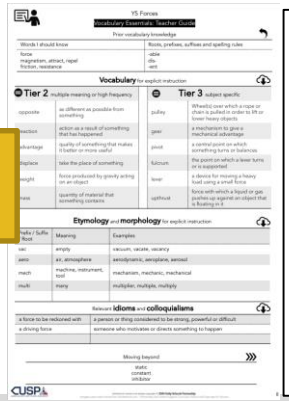
Physical resources are stored in each classroom or main science cupboard. There is regular use of resources in our lessons across school – we also use interactive physical displays and EYFS have access to continuous provision to explore science.

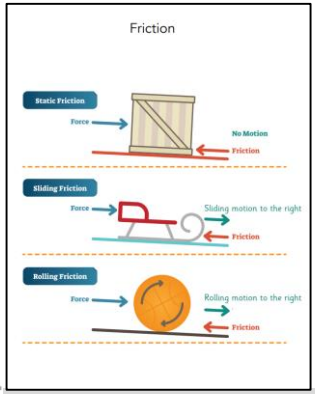


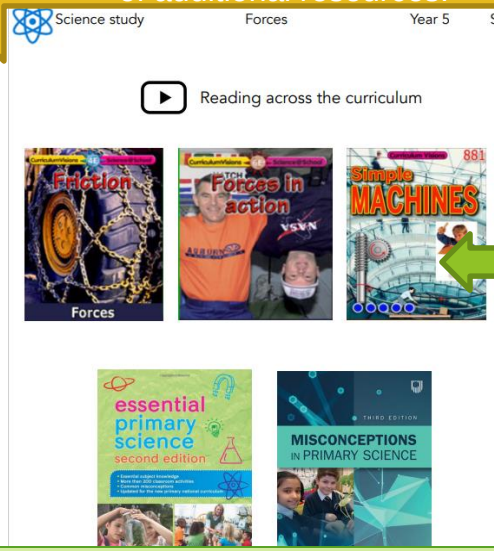
Year 4 Data logging lesson plan
https://teachcomputing.org/curriculum/key-stage-2/data-and-information-data-logging/logging

Data logging CPD from NCCE – engaging with external support for training and loaning of additional resources.

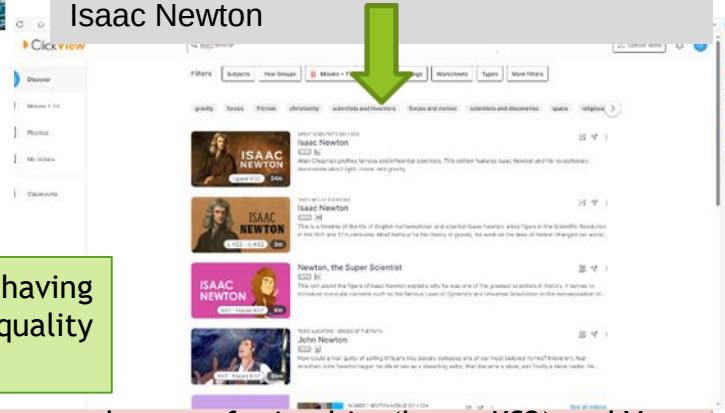
Vocabulary is taught explicitly through CUSP and has excellent visual resources linked to units of work







Click view and curriculum visions are linked to concepts being taught e.g Y5 Sum 1 Gravity between Earth and falling object. Isaac Newton



We learned about plants and labelled them. We learned about photosynthesis JN Y4

Evidence of how we use the schools grounds to good effect as a scientific environment

Gardening club

Farming club keep chickens.

Impact: Learning is facilitated with having the appropriate tools that allow for quality teaching

Next Steps: Further training for teachers on the use of microbits (lower KS2) and Vu+ data loggers.

Science Learning A - Enquiry types/skills/investigation

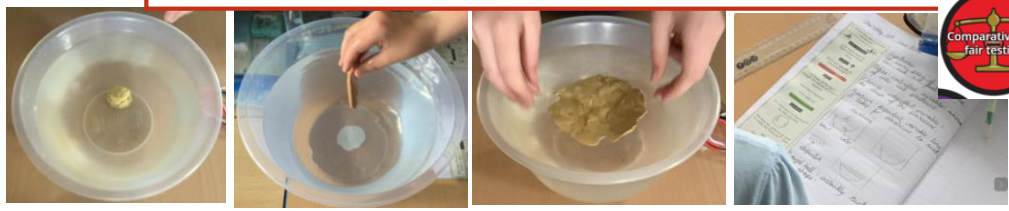
Key Need:- *Science learning is strengthened and developed - purpose and process of science enquiry.*

Research enquiries are a great opportunity to use science lessons to practise reading and listening skills developed in English; children get to use a range of secondary sources to help them find the answers to their 'big questions'. Alternatively, children could plan research tools, such as questionnaires and interviews, to collect their own data. They are also an ideal type of enquiry to encourage collaborative learning in children, both in the researching and sharing of information, but also in presenting their findings to a variety of audiences. Research enquiries help to develop children's scientific literacy, as children learn to compare and evaluate information from different sources. As children learn to recognise the differences between fact and opinion, and consider the concept of bias, they develop life skills that will support them in being citizens of the twenty-first century.

Pupil GMcK Y3– I can't wait for Mondays to do experiments – we tested rocks like chalk and slate with water and vinegar.

Observing over time enquiries are a fantastic way for children to be curious about the world around them.These types of enquiries lend themselves to observing the natural world, but can also be used when comparing materials and observing physical processes.

Primary science enquiries that are comparative tests have many similar features to fair tests in that one variable is changed, another variable is measured, and any other variables are controlled. The difference is that in a comparative test the variable that is changed is discrete rather than continuous, so children are comparing different cases/situations. Children regularly ask questions that lead to a comparative test, and these types of enquiries provide lots of opportunities to measure and collect data.

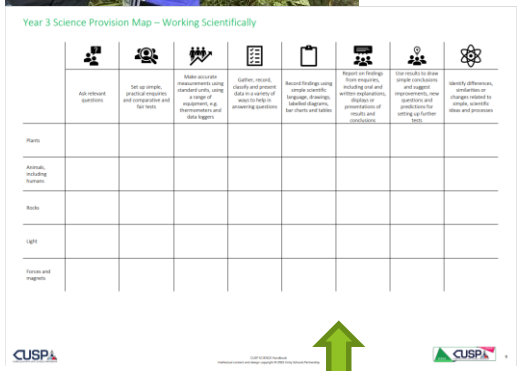


Class 4 were investigating the effect of shape on water resistance today and how this affects the speed of an item sinking. We tested different shapes, researched those with the least resistance and timed our results to prove our hypothesis.

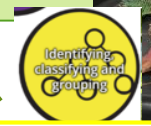
Children are taught to use different enquiry types to answer scientific questions about the world around them, through the use of different enquiry skills.

Impact : Scientific enquiry increases children's capacity to:

- Problem-solve and answer questions. Children explore their own ideas, develop and deepen conceptual understanding.
- Work with independence. Thinking and reasoning is nurtured alongside a host of qualities, including resilience, determination and confidence.
- 'Be a scientist'. A necessary toolkit of practical skills is developed and added to over time.
- Communicate effectively. Technical and scientific vocabulary is learned, practised and used, as children communicate evidence in a variety of ways, often with different audiences in mind.



CUSP resources have provision maps for the different units to support teachers in, for example, Pattern seeking to identify where children 'use results to draw simple conclusions and suggest improvements. New questions and predictions for the setting up of further tests in each of the units(Plants, animals, rocks, light, forces and magnets (Y3)



Pattern-seeking enquiries involve children making measurements or observations to explore situations where there are variables that they can't easily control. In these enquiries, children are trying to answer 'big questions' by identifying patterns in the measurements and observations they record. These types of enquiries may be preliminary tests that lead on to more systematic enquiries, such as fair tests or comparative tests.

Children begin identifying and classifying objects in the world around them from a very young age; this type of enquiry comes very naturally as young learners try to make sense of the world around them. In this type of enquiry, children make observations and measurements to help them look for similarities and differences. This will help them to organise things into groups and make connections.

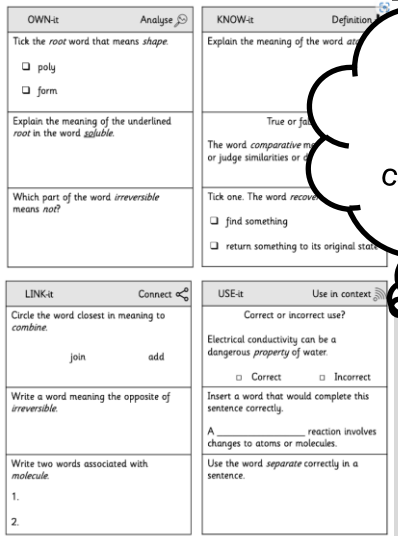
Science Learning B – Assessment

Key Need:- *The purpose of science assessment and current best practice*

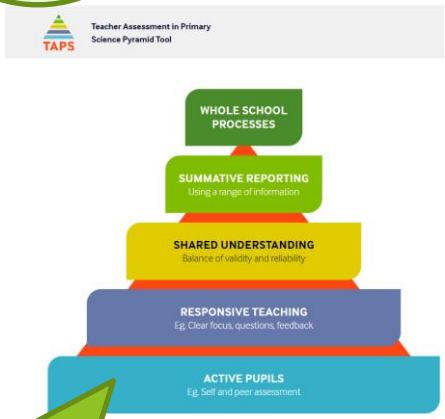
A range of strategies and processes for formative, summative and statutory assessment. Reflect shared understanding of the purpose of assessment in science and uses current best practice.

Teachers are using a range of strategies to inform assessment and although this works for progress across the 2 year groups in each class the transfer of clear information is less clear so need to be a school improvement focus.

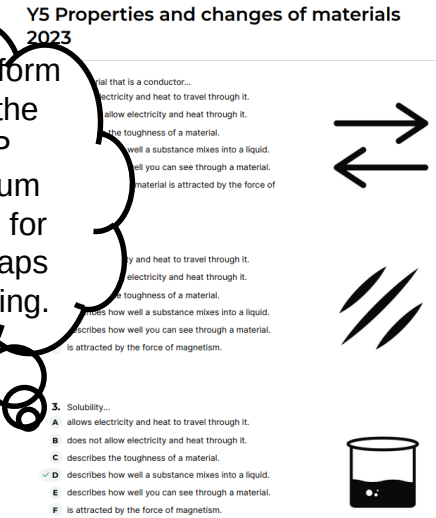
A Focus on vocabulary – analysis, definition, connection, and context



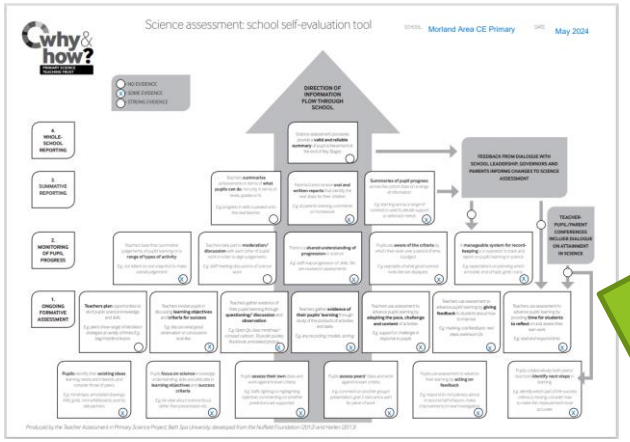
Explorify makes science accessible for all – discussion-based and open-ended activities are great for enabling ALL pupils, including those with SEND, to participate in science lessons without a fear of failure and increasing their independence. With proven impact for teachers and pupils, Explorify increases teacher confidence and teaching time, which improves pupils' science knowledge, use of scientific vocabulary and reasoning skills.
Using Inspiring ideas to develop scientific enquiry skills, add a twist to your science lessons with activities that inspire questioning, deepen thinking and extend reasoning skills. Try challenges that develop scientific enquiry skills and tackle confidence-building group tasks.



Quizzes form part of the CUSP curriculum allowing for mini recaps on learning.



Concept cartoons are a visual representation of science ideas. The simple cartoon style drawings put forward a range of viewpoints about science ideas in situations that are designed to motivate and engage students and stimulate discussion of their ideas.



Whole school overview of where we are with assessment linked to curriculum (See road map slide 7) – explore through TAPS/CUSP

Focus4TAPS
Register your interest for Focus4TAPS professional development

Next steps: Streamline assessment process (SIP 2024-25)– next steps in using CUSP is to review assessment in science to provide valid and reliable summary of childrens progress in science that can be used by next teacher

Impact: Children's assessment shows achievement in topics covered so children's knowledge of science topics is deepened as this information is passed through the school.

Science Learning C – science capital

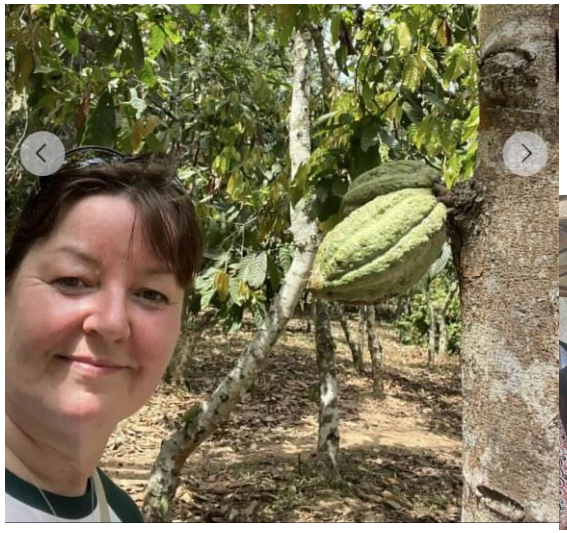
Key Need:- *The importance of strategies for developing all childrens' science capital.*

Developing science capital by introducing magazines that each week/month explore a new theme through science, art and general knowledge. Topics range from Robotics and Solar Science, Ancient Egypt and Time Travel – something for every interest

Initiatives that encourage all children to think that science is relevant and important to their lives, now and in the future, are supported and promoted. We have a farming club and many farming families that give us a wealth of practicing scientists and 'live' resources to work with.

All children have 'statutory' science lessons every week, as part of their timetable. This is supplemented with theme weeks, science/farm/eco club, magazines, access to curriculum visions (digital book bank), enrichment events. There is a strong scientific educational background with staff to A-level and degree standard.

External speakers to deliver workshops on e.g. biodiversity – the decline of red squirrels and how we can help protect the 25000 left n England.

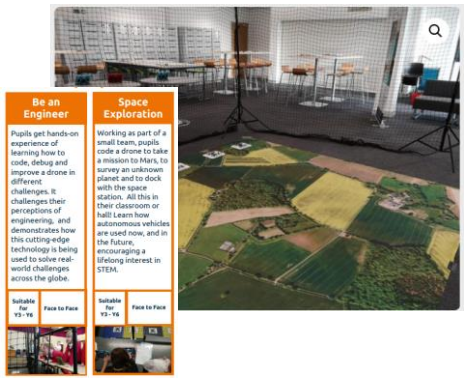


Cross curricular units of cooking in DT link with science

We run an enrichment programme for local primary schools that give children access to STEM specialists such as events with ben Martynoga author and scientist and drone workshop.

We have a strong link with a village in Ghana called Ankoma – during a theme week around chocolate in March we were able to link directly to our headteacher at a cocoa farm and see the cocoa beans being picked.

Impact: Science capital builds relationships between children and science by broadening the ways in which science is represented, by valuing what all children bring with them and by connecting science with children's identities, experiences and what matters to them and their communities.



Science Wider Opportunities A – Science – contextualised in other subjects – cross-curricular planning links science with other subjects.

Key Need: *cross-curricular planning that links science to other areas of learning*

Engage with STEM to provide expertise in specific area and CPD to staff

SWITCHED ON!

Get involved in Electricity North West new exciting electricity workshops for KS2

STEMFirst

Staff training with Cumbria development Education Centre

CDEC
Cumbria as a Beacon of Global Citizenship

Welcome to CDEC - Cumbria Development Education Centre

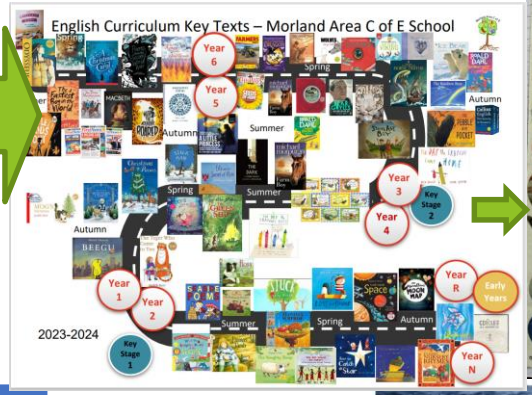
CLIMATE CURRICULUM FOR CLIMATE ACTION FRAMEWORK

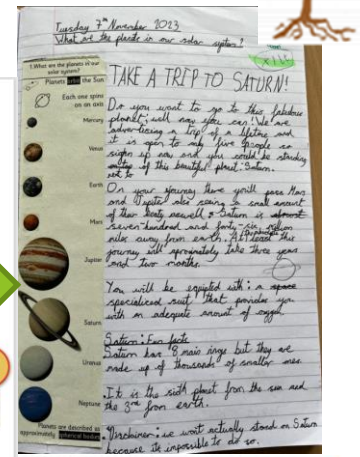
Erasmus+

Introducing key terms

By the end of Year 2:	By the end of Year 4:	By the end of Year 6:
Weather and climate	Climate change	Carbon footprint
	Atmosphere	Climate emergency
	Greenhouse effect	Tipping points
	Greenhouse Gas emissions	Intergovernmental Panel on Climate Change
	Carbon emissions	Ecosystems
	Carbon dioxide	Climate justice
	Fossil fuels	Carbon sinks
	Renewable energy	Biodiversity
		Permaculture

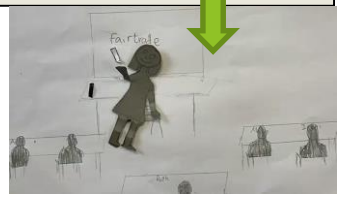
We have mapped the books the children read as part of their English curriculum many of which have science as part of their content. Children also use English writing styles in recording their work.





Curriculum planning links science to other areas of learning. *Eden Rivers trust 2 day CPD in the field linking Geography and Science*

https://www.facebook.com/morlandarea/videos/1561618431044653
Children learned about Cacao and biodiversity in writing week about 'Chocolate', tie dying t-shirts in art and making animations.



Impact: Cross-curricular teaching promotes deeper learning and engages pupils holistically and encourages them to explore connections between science and other subjects, leading to a more comprehensive understanding of concepts

Jamie from Hotel Chocolate came to talk to the children

Eden Rivers Trust

https://www.edenriverstrust.org.uk/wp-content/uploads/2021/08/Name-That-Minibeast.pdf
Links to mini beast identification grid and primary resources from training.

Outcomes:

- Knowledge of the Eden Catchment: What makes it such a special river system and the species that depend upon it being healthy; the impacts of land-use, pollution and climate change; and how people are working together to make it a better place - for people and wildlife.
- An understanding of risk management at Water Margins (e.g. walking along a riverbank and working in shallow water)
- Developed Fieldwork Skills – geography (beside and in-river) and science (invertebrate sampling and identification).
- Knowledge of how to use Eden Rivers Trust's creative and varied online resources to support learning in the classroom. Including: in-class science investigations; fun films made with local schools; illustrated stories and challenges to 'Act for Eden's Rivers'.
- Inspired and confident to use and map 'Eden's Rivers' in your school curriculum - including knowledge progression and core skills.

Science Wider Opportunities B - variety of opportunities to deepen and extend learning

Key Need:-*provision of a variety of opportunities that deepen and extend learning*

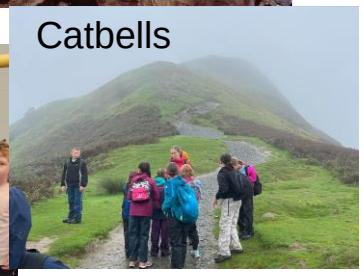
There is participation in external initiatives, topical science events and family learning.

Hatching chicks

Farm visits

WHITE SCAR CAVE
Yorkshire Dales National Park

Catbells



Gymnastics at the leisure centre

Children have hands on practical experiences in the field to support their learning.

Thank you to school council for revamping our packed lunch menu with healthy options 😊 We can't wait to try them when we go on our school trips!

Science club: S and J have been running science club for Y3 – Chromatography , the science of bubbles, slime.

Impact:As above (Slide 12)

Next Steps: Make established links for learning outside the classroom and record on planning related to each unit

working alongside A level Computing students from Kirkby Stephen Grammar School and their lead teacher Mrs Park and our IT support and Governor Marti Barker who provided us with a superb session using Lego Spike robot kits.

Children are enthused by their learning they spend time researching and making posters

Making Crepes on residential
Science through cooking – and in French!