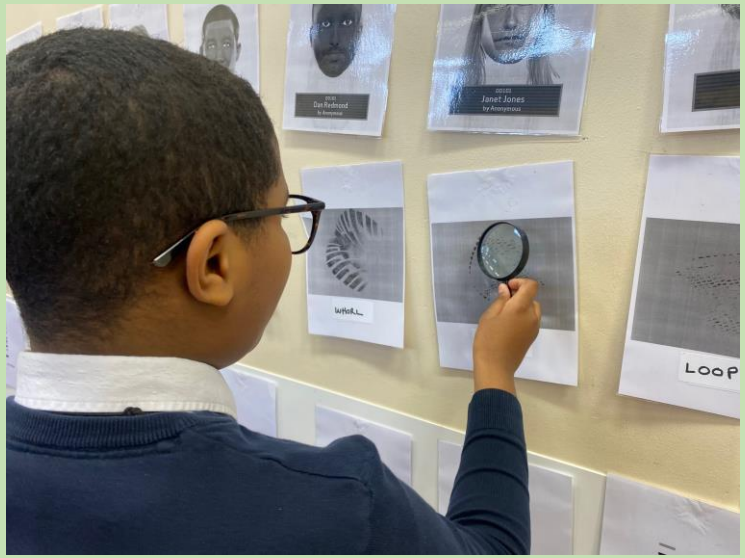
Belvedere Junior School

PSQM

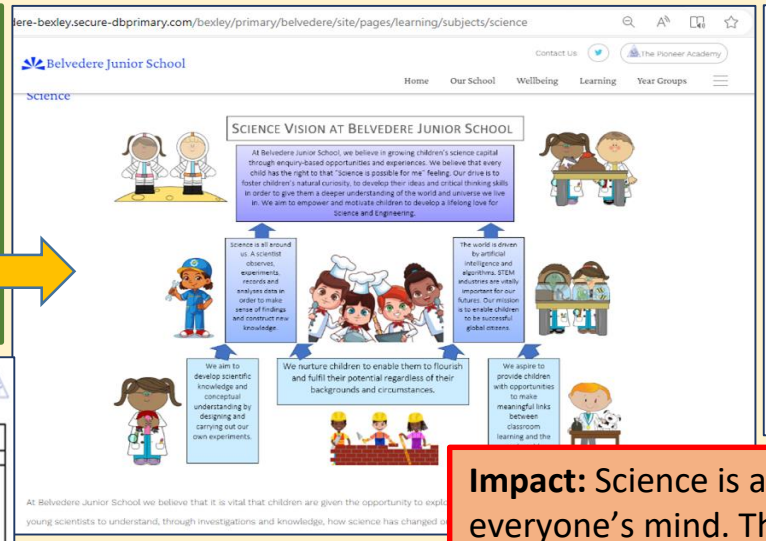
March 2024

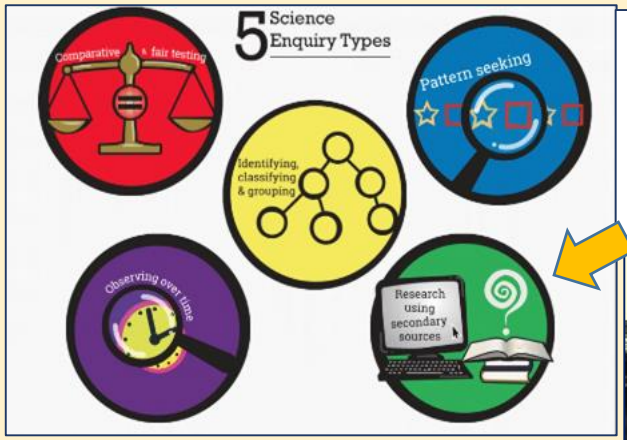
"Science knows no country because knowledge belongs to humanity and is the torch which illuminates the world." Louis Pasteur



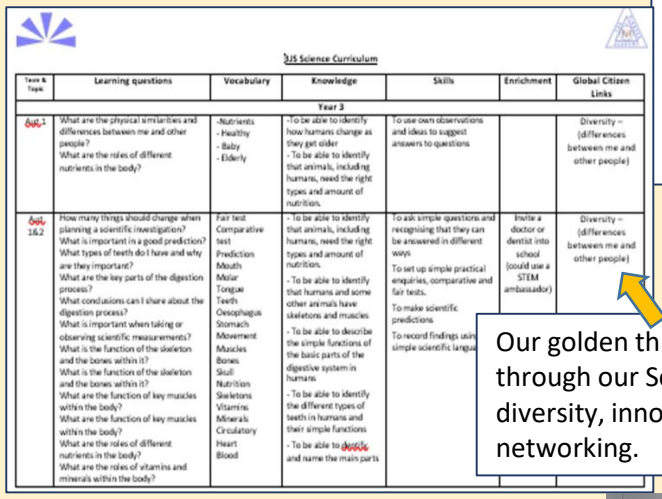
SLA: Subject Leadership is strengthened and developed through the creation and implementation of a clear vision for Science

Intent: Our vision at Belvedere Junior School is to raise the Science capital, to enable children to see themselves as scientists and understand that science is all around us through a shared investment and commitment to improve outcomes for all.





Our vision is to grow children's Science capital through enquiry-based opportunities and experiences. Teachers promote the five types of Scientific enquiry across the curriculum and enquiries are evident in every subject.



JJS Science Curriculum

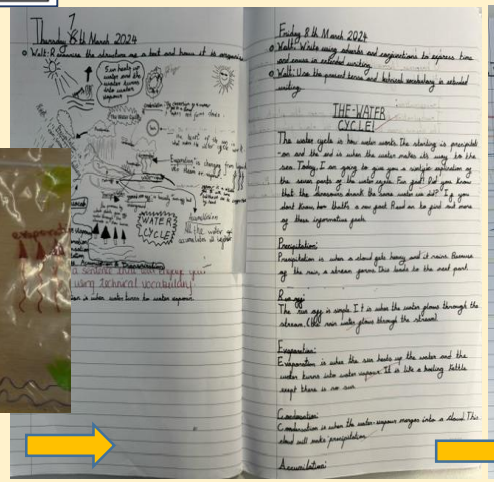
Term & Topic	Learning questions	Vocabulary	Knowledge	Skills	Enrichment	Global Citizen Links
			Year 3			
Aut 1	What are the physical similarities and differences between me and other people? What are the roles of different nutrients in the body?	-Nutrients - Healthy - Baby - Elderly	-To be able to identify how humans change as they get older - To be able to identify that animals, including humans, need the right types and amount of nutrition.	To use own observations and ideas to suggest answers to questions		Diversity – (differences between me and other people)
Aut 1&2	How many things should change when planning a scientific investigation? What is important in a good prediction? What types of teeth do I have and why are they important? What are the key parts of the digestion process? What conclusions can I share about the digestion process? What is important when taking or observing scientific measurements? What is the function of the skeleton and the bones within it? What is the function of the skeleton and the bones within it? What are the function of key muscles within the body? What are the function of key muscles within the body? What are the roles of different nutrients in the body? What are the roles of vitamins and minerals within the body?	Fair test Comparative test Prediction Mouth Molar Tongue Teeth Oesophagus Stomach Movement Muscles Bones Skull Nutrition Skeletons Vitamins Minerals Circulatory Heart Blood	- To be able to identify that animals, including humans, need the right types and amount of nutrition. - To be able to identify that humans and some other animals have skeletons and muscles - To be able to describe the simple functions of the basic parts of the digestive system in humans. - To be able to identify the different types of teeth in humans and their simple functions - To be able to describe and name the main parts	To ask simple questions and recognising that they can be answered in different ways To set up simple practical enquiries, comparative and fair tests. To make scientific predictions To record findings using simple scientific langua	Invite a doctor or dentist into school (could use a STEM ambassador)	Diversity – (differences between me and other people)

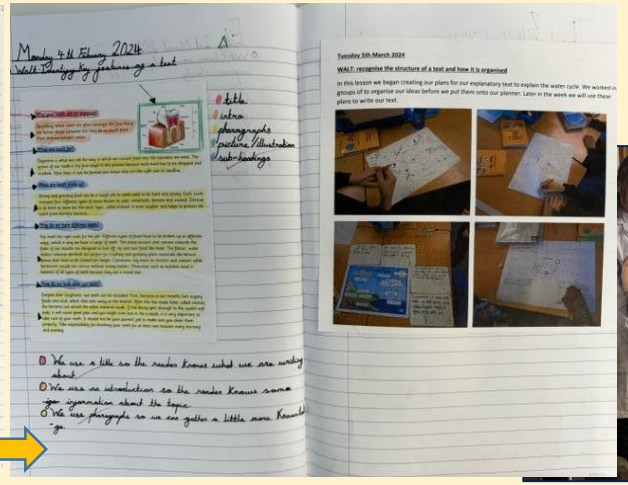
Our golden thread: Global citizenship runs through our Science Curriculum. We celebrate diversity, innovation, pioneering and networking.

Impact: Science is at the forefront of everyone's mind. There is a shared understanding of the importance of Science and Scientific advancement in the world around us in the 21st Century. We provide children with opportunities to make meaningful links between classroom learning and the real world.

Science is regularly celebrated in class presentations and assemblies, in cross-curricular learning (also see slide 14) and independent Scientific enquiry embedded across the curriculum.

Promoting scientific learning in English.





Next steps:
Possible changes in curriculum from September will require the Vision to be revisited.

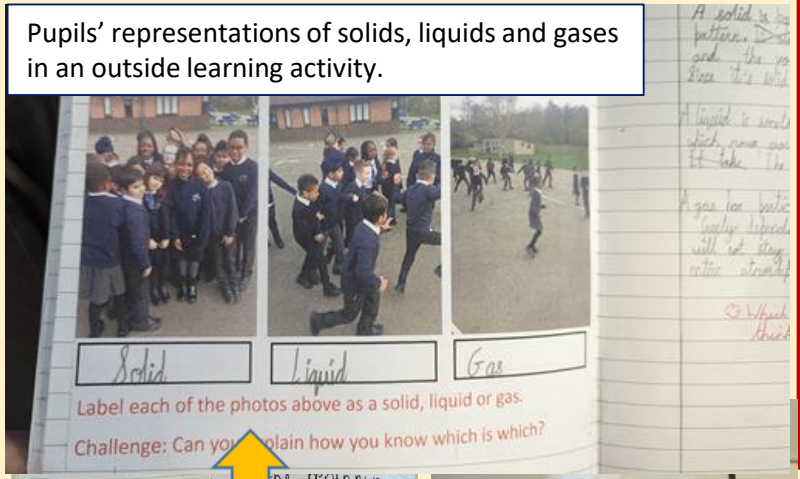
SLB: Science subject leadership is strengthened and developed through strategic support enabling improvement to take place

Intent: Strategic support enables the subject leader and teaching staff to drive the vision forward and implement changes that will improve science teaching and learning. Ongoing strategic support will lead to sustained improvement which will be evident in pupil outcomes.

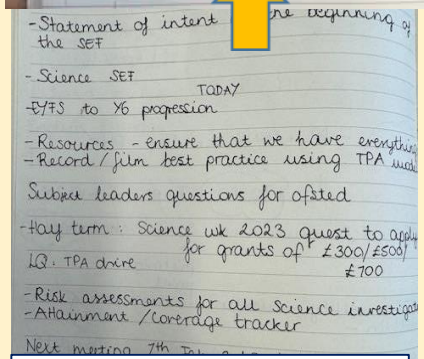
Regular SL release time provided to ensure that subject leadership is effective and has a positive impact on professional development for all staff. Subject leader action plan is updated regularly and areas for development are identified. SL attends regular professional development training and works in collaboration with other Science subject leaders within the trust.

Objectives	Actions to be taken	Success Criteria	Time Scale	Lead Person	Resources/ Funding	Monitoring and Evaluating (what and when)
Map out the progression across the school to ensure children are making progress.	• Speak to coordinator at the infant school • Look at pacer documents • Create progression map of science • Use this to inform monitoring and resources	Clear progression route from EYFS to UKS2, units are well-sequenced and skills are embedded throughout the curriculum. LO-s are mapped so that unit are not repeated and/or overlap.	Email w/c 14th Nov Look at pacer documents and create a progression map (RU – April 2023) then ongoing in 23-24	KH Subject Lead		SLT KH Ongoing

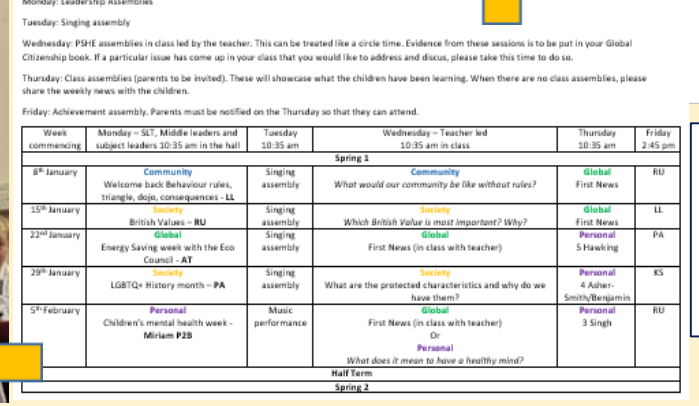
Pupils' representations of solids, liquids and gases in an outside learning activity.



Impact: Strategic support enables the SL to carry out their duties and support the development of the subject as well as the professional development of staff. Ongoing CPD improves teachers' subject knowledge and teachers feel confident in delivering lessons in which children are building on their skills working scientifically and that challenge their thinking.


- Statement of intent for the beginning of the SEF
- Science SEF TODAY
- EYFS to Y6 progression
- Resources - ensure that we have everything
- Record / film best practice using TPA
- Subject leaders questions for ofsted
- Half term : Science wk 2023 quest to apply for grants of £300/£500/£700
- LQ - TPA drive
- Risk assessments for all Science investigations
- Attainment / Coverage tracker
- Next meeting 7th

CPD notes supporting development.


Assembly Timetable – Spring

Monday: Leadership Assemblies

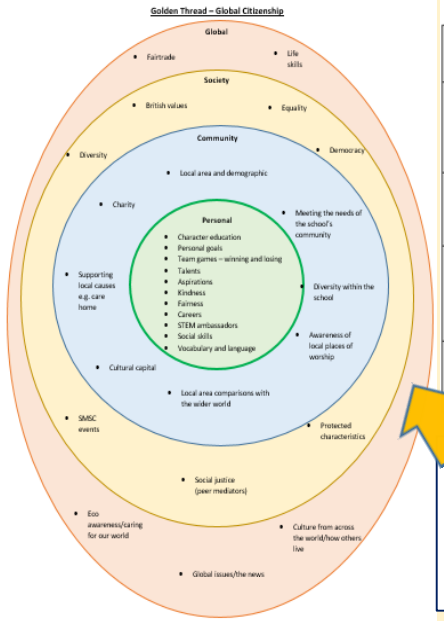
Tuesday: Singing assembly

Wednesday: PSHE assemblies in class led by the teacher. This can be treated like a circle time. Evidence from these sessions is to be put in your Global Citizenship book. If a particular issue has come up in your class that you would like to address and discuss, please take this time to do so.

Thursday: Class assemblies (parents to be invited). These will showcase what the children have been learning. When there are no class assemblies, please share the weekly news with the children.

Friday: Achievement assembly. Parents must be notified on the Thursday so that they can attend.

Week commencing	Monday – SLT, Middle leaders and subject leaders 10:35 am in the hall	Tuesday 10:35 am	Wednesday – Teacher led 10:35 am in class	Thursday 10:35 am	Friday 2:45 pm
Spring 1					
8th January	Community Welcome back Behaviour rules, triangle, dojo, consequences - LL	Singing assembly	Community *What would our community be like without rules?*	Global First News	RU
15th January	Society British Values – RU	Singing assembly	Society *Which British Value is most important? Why?*	Global First News	LL
22nd January	Global Energy Saving week with the Eco Council - AT	Singing assembly	Global First News (in class with teacher)	Personal S Hawking	PA
29th January	Society LGBTQ+ History month – PA	Singing assembly	Society What are the protected characteristics and why do we have them?	Personal A Asher-Smith/Benjamin	KS
5th February	Personal Children's mental health week - Miriam P2B	Music performance	Global First News (in class with teacher) Or Personal *What does it mean to have a healthy mind?*	Personal S Singh	RU
Half Term					
Spring 2					



Yearly overview of assemblies link to whole school development plan, staff development and curriculum planning.

Strategic support is built around a clear progression map of scientific skills, knowledge and understanding with Global Citizenship at the centre of our curriculum.

Next steps:
Implementation of higher order thinking skills (particularly analysis, synthesis and evaluation) form part of teaching and learning across the curriculum and are evident in lessons.

SLC: Subject Leadership is strengthened and developed through an effective monitoring and improvement cycle that informs development in Science

Intent: Monitoring strategies foster a positive culture where teachers feel supported, respond to and act on feedback in a way that enables sustained improvements to take place.

Before PSQM – Spring 2 2023

Science Leader Action Plan 2023-24

books and ut pupil voice nsure progression	• Use TPA format to look through all year groups books • Ensure coverage is correct • Monitor presentation is correct • Check that lessons are correctly pitched and that there is variation • Speak to pupils about their learning in science to create next steps.	Pupils' feedback will be positive and will show enthusiasm and enjoyment of learning. Books will all be of the same format and will show consistency and good progression throughout the years.	20th Nov Monitoring on going in Spr and Sum.	KH Subject Lead		SLT KH Ongoing

Science Leadership Action Plan monitoring focus.

Educational visits evident in pupil voice, children can specifically and passionately speak about their learning and experiences.

Book monitoring and discussion with pupils:

Pupil	6 Chaplin
AAR Katya	WWW - Link learning to previous units from other year groups - Trip was spoken about at length, very strong link to their learning - AR/AAR can recall learning in depth
AR uke	
BAR Evy	

WWW
Engaging entry point – working in groups, drawing around each other, labelling body parts they know and then carrying out an investigation
Children have already carried out two scientific experiments – using comparative and fair testing. Children are already thinking scientifically as a result, not just knowledge retrieval.

Science CPD Questionnaire - Rob

Please indicate in the table how confident you feel in the teaching of these areas.

	Very confident	Moderately confident	Somewhat confident
Exploring and observing skills		x	
Grouping and classifying skills	x		
Questioning skills		x	
Research skills			x
Modelling skills		x	
Collaborating skills			x
Planning and testing skills			x
Using equipment and measures	x		
Communicating skills			x
Describing results	x		
Explaining results	x		
Year group appropriate scientific vocabulary	x		
Fair test investigations			x
Observation over time investigations	x		
Pattern seeking investigations			x
Applying different writing genres to WS skills		x	
Applying maths skills to WS skills		x	

Impact: Teaching and learning in Science is almost always consistent within year groups and across the school. Pupils are able to articulate their knowledge and discuss their learning using scientific terminology. There is a clear progression of skills and knowledge and experiments are enriching learning. Monitoring feedback supports staff development and improves pupil outcomes.

Experiments are evident in the monitoring cycle.

Pupil	3 Mercury
AAR Theshmita	WWW - Children can recall their learning in Science - They enjoy Science – can talk confidently about the investigations - Resources are available to help the children, inc. word banks
AR Aleisha	
BAR Jacob	

A year on – Spring 2 2024

	Very confident	Moderately confident	Somewhat confident
Exploring and observing skills		x	
Grouping and classifying skills	x		
Questioning skills		x	
Research skills		x	
Modelling skills		x	
Collaborating skills		x	
Planning and testing skills			x
Using equipment and measures	x		
Communicating skills			x
Describing results	x		
Explaining results	x		
Year group appropriate scientific vocabulary	x		
Fair test investigations		x	
Observation over time investigations	x		
Pattern seeking investigations		x	
Applying different writing genres to WS skills		x	
Applying maths skills to WS skills		x	

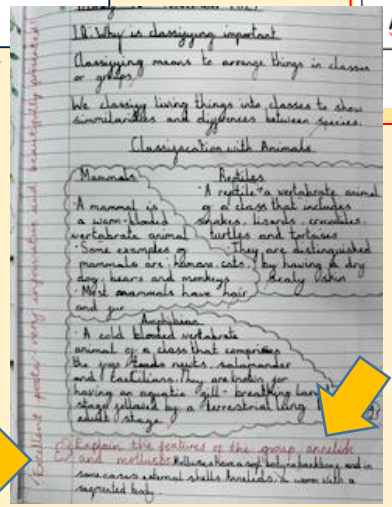
Staff questionnaire before PSQM and currently.

What is going well in science at our school?
"Cross curricular links made."
Online staff questionnaire

Written feedback from book scrutiny shows evidence of cross-curricular coverage, clear adaptation and variation and suggestions for further improvements.

Work Scrutiny

	Evidence of progress	Evidence of variation and adaptation	Marking and feedback	Presentation
BAR	Progression of knowledge is clear, coverage in Geography (3.11.23 and 5.11.23) supplements coverage in Science (7.11.23 onwards).	Pupils create/draw their own diagrams showing various representations of knowledge Adaptation is clear through the use of diagrams Word banks, words and sentences to scaffold	Selection of books monitored – SEND/ BAR, AR, AAR All work marked (except most recent), evidence of bubble marking. Bubble marking is evident for clarifying pupils' understanding i.e. What does this tell us?	Presentation is neat and clear across the sample of books. Presentation is of high quality for AR and AAR children.
SEND				
General comments	All books are fully marked and presentation is clear. Quantity and quality of work produced is high level. Bubble questions give pupils the opportunity to clarify understanding.			
Actions	-Ensure that content is consistent within the year group (photo evidence, entry point/exit point evidence) -Include an opportunity for reflection whenever using photo evidence of practical activity: What was your favourite part?/ List three things that you learnt during the lesson or task/ List three new words that you learnt in this session?/ What observations have you made?/What else would you like to find out? Etc. -Bubble marking to provide opportunities for further learning/deeper thinking: What would happen if?/ How else could this be			
Date of next scrutiny	11.12.23			



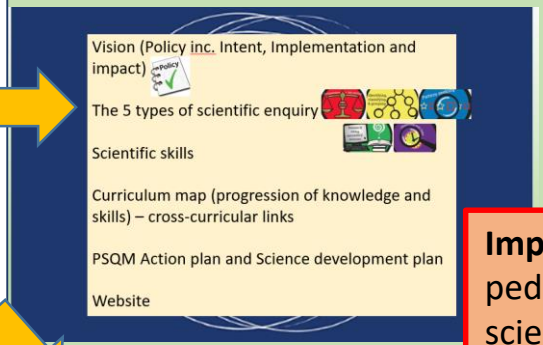
Teacher's response to monitoring feedback evident in the books: bubble marking provide opportunities to deepen understanding.

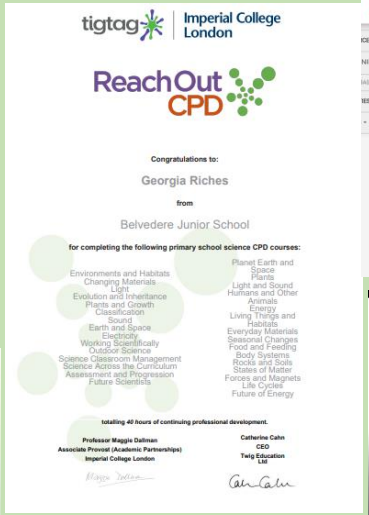
Next steps: Whole school and year group moderation to enable consistency in marking and feedback in order to ensure all pupils achieve well in Science.

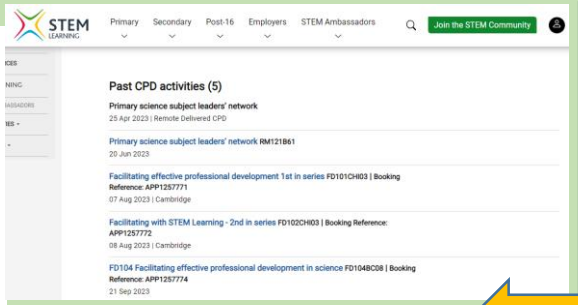
TA: Subject teaching is strengthened and developed through engagement with professional development

Intent: Professional development for all staff improves science pedagogy by enabling teachers to use effective teaching strategies.

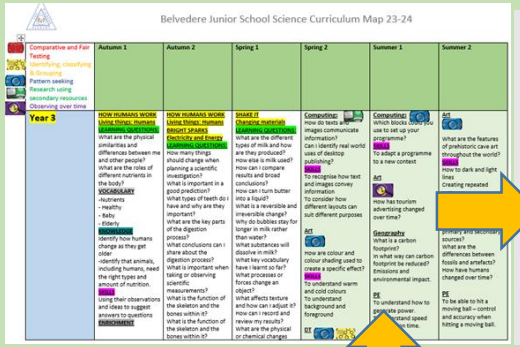
PDM Summer 2 → Science capital, developed science vision as a school team, introduction to scientific enquiry types and discussion of Science curriculum map ensuring an all-year around coverage, (also see slide 10 – embedding scientific learning in all areas of the curriculum).
PDM Autumn 2 → Confirming the science vision and refresher on scientific enquiry types, assessment and preparation for Ofsted inspection (possible Deep Dive).
PDM Spring 2 → Focus is on curriculum map - showing cross curricular links and teaching scientific skills in all areas of the curriculum.

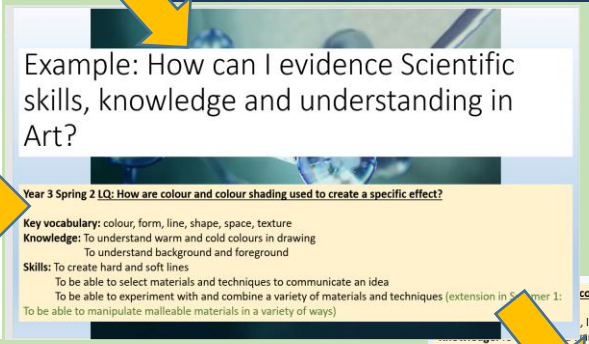






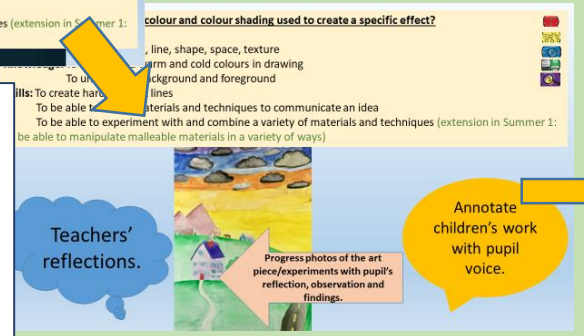
SL support professional development by delivering regular PDMs, sourcing self-study opportunities. Regular release time is provided for SL to attend PSQM training sessions, Science networking meetings by Bexley borough and Science subject forums run by The Pioneer Academy Trust.

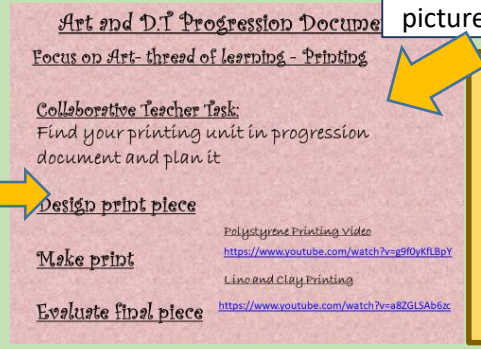




Impact: Staff feel confident using scientific pedagogy that enables all pupils to engage in scientific activities, which equip pupils with transferable enquiry skills and builds on their science capital. Science progression is clear within the school; pupils are able to articulate their learning using appropriate scientific vocabulary.

Exemplifications of evidencing scientific learning across the curriculum. In this Professional Development Session, teachers considered areas of the curriculum that lend themselves well to scientific investigations and enquiries. This is an important part of our staff development as incorporating scientific learning into other subjects is fundamental to moving science forward as a core subject in the school, particularly due to the current blocked structure of science as part of IPC (International Primary Curriculum).



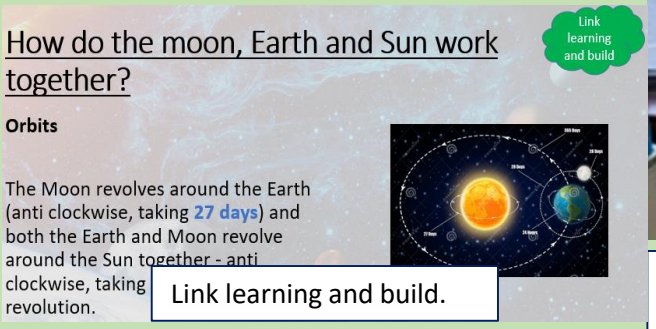


Cross-curricular professional development meetings enable teachers to look at the "big picture" of 'Science is all around us'.

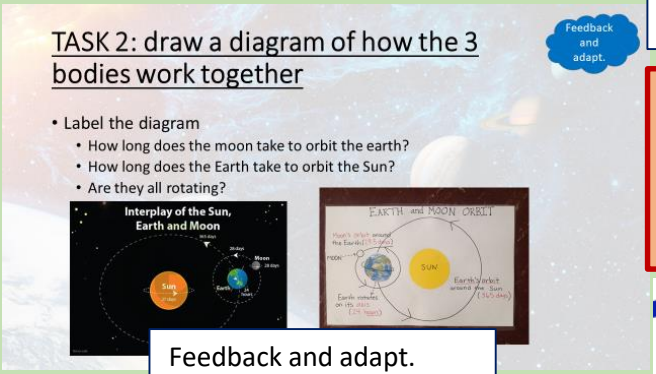
Next steps: Staff routinely take part in optional science CPD with the view to drive improvements forward and sustain improvements achieved in the teaching of Science.

TB: Subject teaching is strengthened and developed through use of a range of effective teaching and learning strategies

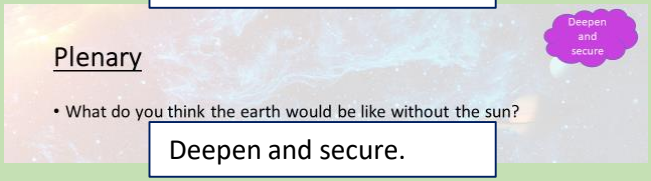
Intent: A wide range of effective teaching strategies make Science learning inspiring, immersive and effective. Children make good or accelerated progress, high levels of motivation and pupil engagement.



Link learning and build.



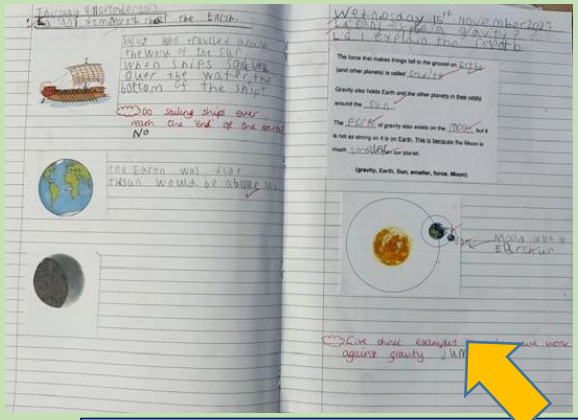
Feedback and adapt.

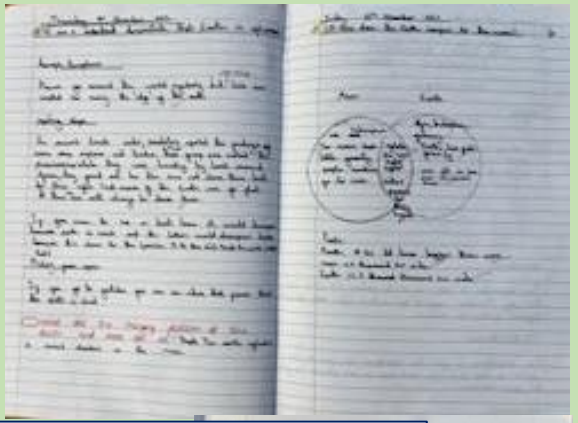


Deepen and secure.

Lesson structure follows the Pioneer Academy Trust teaching model.

Engaging learning environment and display is used as supporting resource in lessons. Carefully selected texts are available for pupils to build on their science capital.





Adaptation and variation shows scaffolding for pupil with SEND.

Outdoor practical learning is evident in books where children revisit and reflect on their learning activities, and apply their skills in subsequent lessons.

Investigative learning using the 5 enquiry types.

Impact: All children make good progress in science. Children understand and are able to discuss the purposes of enquiry types. Children enjoy and value their science education, which is accessible for all.

Next steps: Sustain implemented improvements and achieve consistency across year groups and across the school in the teaching and learning of Science.

TC: Subject teaching is strengthened and developed through regular and safe use of up-to-date quality resources

Intent: Teaching and learning are enriched by the use of quality resources that are well-organised and replenished regularly ready to be used. High quality fiction and non-fiction reading resources in a range of science topics support teaching and learning across the curriculum.

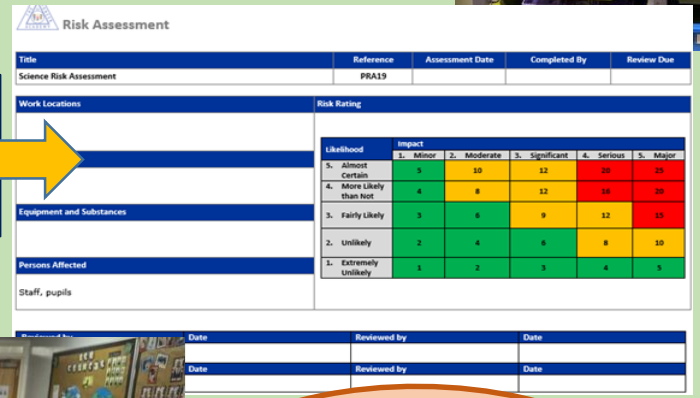
What could be improved in Science at school?
"A lot of resources are needed for the best opportunities for all pupils to be provided."
(Autumn 1, 2023)

Resources	25.09.23
Anemometers	
Battery and wire sets for circuit	
Battery holders	
Bug viewer	
Building bridges sets	
Candles and candle holders	
Cardboard and wooden wheels	
Compasses	
Corks	
Cotton wool	
Fertiliser	
Gardening gloves	
Gardening tools (child friendly	
Hot water bottles	
Human body (box set x 1)	
Human skeleton (very tired)	
Magnets	
Materials (textiles)	
Mirrors and mirror blocks	
Nets	
Newton forces meter	
Paper planting pots	
Plant labels	

Responding to teachers' needs: high quality resources - both practical and paper based have resulted in enhanced engagement, more creative, curious learning by all pupils. Resources are organized and clearly labelled. Up-to-date resources are regularly monitored and replenished as part of the monitoring cycle.

Impact: Well-organised resources enrich teaching and learning. Teachers are forward thinking in their planning of learning sequences focusing on developing scientific investigations and enquiry skills.

A risk assessment is in place in order to keep children safe during science learning. This includes educational visits and the safe use of equipment..



Risk Assessment

Title	Reference	Assessment Date	Completed By	Review Due
Science Risk Assessment	PRA19			

Work Locations | Risk Rating

Likelihood / Impact (1. Minor, 2. Moderate, 3. Significant, 4. Serious, 5. Major)

5. Almost Certain	5	10	12	20	25
4. More Likely than Not	4	8	12	16	20
3. Fairly Likely	3	6	9	12	15
2. Unlikely	2	4	6	8	10
1. Extremely Unlikely	1	2	3	4	5

Equipment and Substances

Persons Affected

Staff, pupils

Date	Reviewed by	Date
Date	Reviewed by	Date

Supplier Amazon + TTS
Address _____
_____
Tel No _____

Telephone Order
Date _____
Ref _____

Catalogue Reference	Description	Quantity	Unit	Price excl VAT
Amazon	Grow Your Own Vegetable Seeds - 20 Packet Variety by Garden Pack – Garden	3	7.95	23.85
Amazon	Pronto Seed Flower Seeds for Planting Now Bumper Pack Containing 24 Amazon.co.uk: Garden	3	8.99	26.97
Amazon	Vegetable Seeds 60+ (Runner Bean Enorma Approx. 15 Seeds) : Amazon.co.uk: Garden	6	1.50	9.00
Amazon	Vegetable Seeds (Broadbean Aquadulce 20)	6	1.50	9.00
Amazon	18 x Collection Pastel Tulips - Flower Bulbs	1	8.99	8.99
Amazon	Pronto Seed Muscari Armeniacum, Grape Hyacinth	1	9.99	9.99

"I like having these new books in our library as it makes us think bigger about science" Y4 pupil

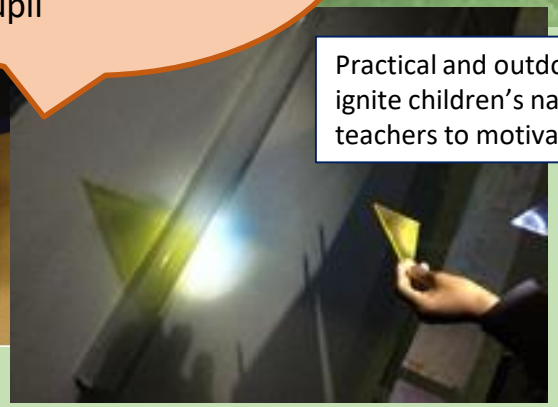
Next steps:

Add to our stock of resources which will further develop scientific thinking. Continuously improve our Science provision.

LA: Subject learning is strengthened and developed through a shared understanding of the purposes and process of science enquiry.

Intent: Support teachers to build on their subject knowledge. Introduce new strategies involving the five scientific enquiry types.

"I liked this lesson because it got us thinking about light and sound"
Y4 Pupil



Practical and outdoor learning experiences ignite children's natural curiosity and enable teachers to motivate and engage all pupils.

Year 3 children experimented with food and tights to recreate the digestive system.

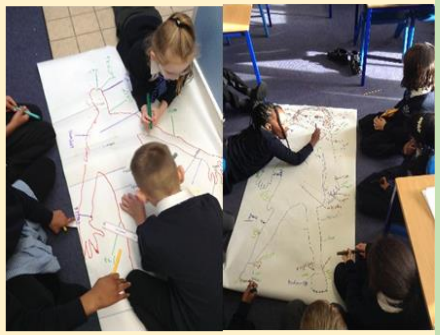
"This lesson was fun as it showed us how food turns to faeces"
Y3 pupils

Creative, collaborative learning forms part of science lessons across the school.

Impact: Teachers teach inclusive lessons where adaptation and variation is clear and support the learning of scientific skills and knowledge at all levels. Lessons are accessible to all. Pupil motivation and engagement is high and as a result, pupil outcomes are continuously improving.

UKS2 planting a range of vegetables. Outdoor practical activities have encouraged our most reluctant learners. Science has helped children overcome barriers and enabled pupils to work as part of a team.

For our entry point to our new topic. 'How Humans Work', we started by drawing around each other and then labelling and describing the parts of the body we already know including organs, limbs and bones.

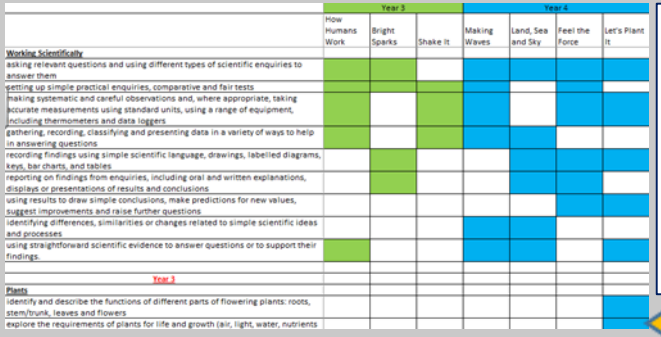


For the second part, we predicted how our body would react to exercise. We went outside and completed 15 minutes of exercise and then discussed our results.

Next steps: Ongoing continuous development to improve teachers' subject knowledge teaching scientific skills, which in turn lead to increased levels of self-confidence and creative, engaging and motivating lessons.

LA: Subject learning is strengthened and developed through a shared understanding of the purposes and process of science enquiry.

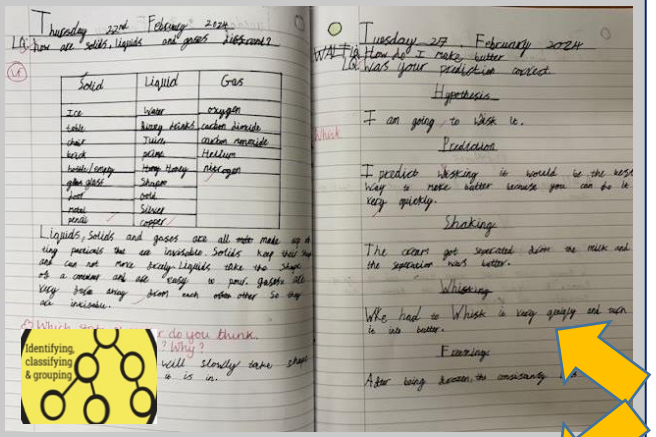
Intent: We develop children's scientific knowledge and conceptual understanding by designing and carrying out our own experiments. Experiments are varied and the use of the five enquiry type are evident across all year groups.

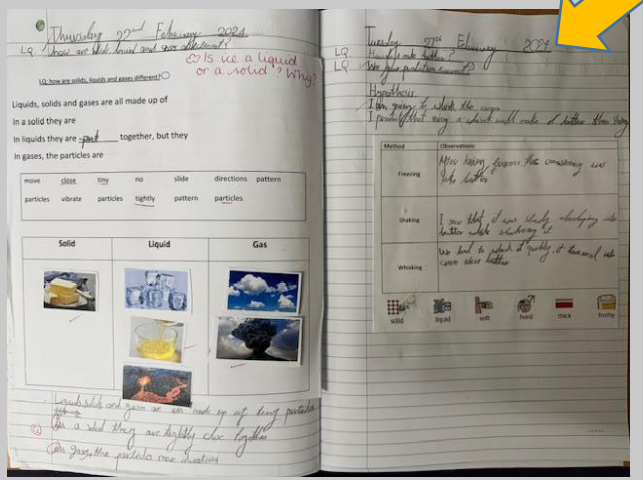


	Year 3			Year 4			
	How Humans Work	Bright Sparks	Shake It	Making Waves	Land, Sea and Sky	Feel the Force	Let's Plant It
Working Scientifically							
asking relevant questions and using different types of scientific enquiries to answer them							
setting up simple practical enquiries, comparative and fair tests							
making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers							
gathering, recording, classifying and presenting data in a variety of ways to help in answering questions							
recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables							
reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions							
using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions							
identifying differences, similarities or changes related to simple scientific ideas and processes							
using straightforward scientific evidence to answer questions or to support their findings							
Year 3							
Plants							
identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers							
explore the requirements of plants for life and growth (air, light, water, nutrients							

National Curriculum coverage for IPC Science reflected in medium term and short term planning.

Developing children's scientific vocabulary has been a focus at BJS as a large majority of pupils speak English as an additional language.

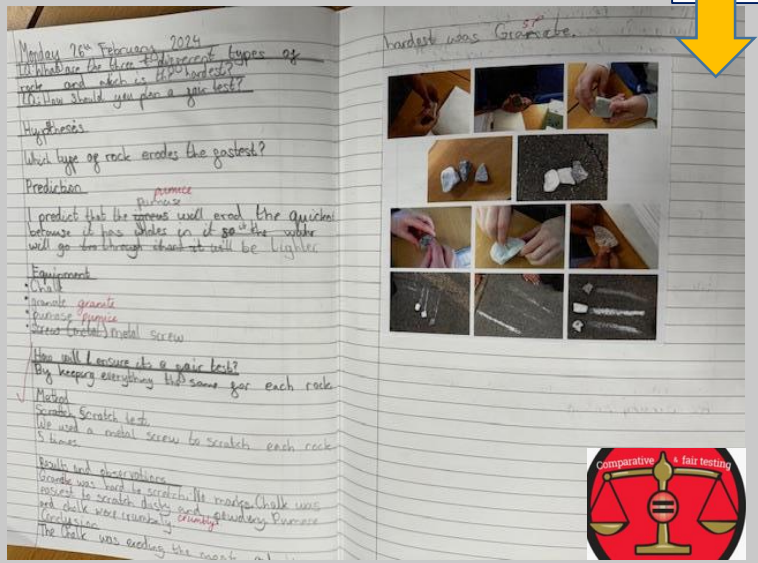


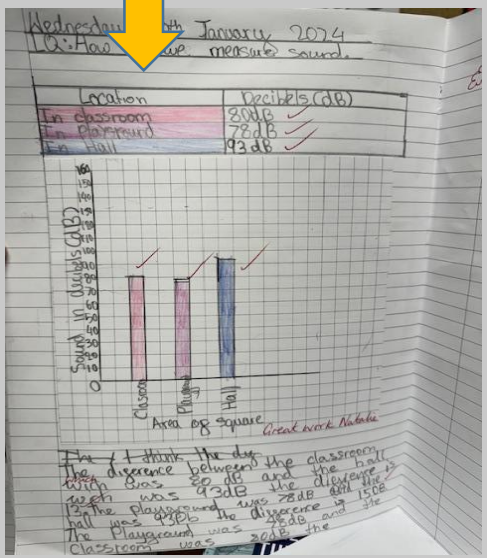


Evidence in books highlights the increase in quantity and quality of children's independent enquiry planning their own investigations. The focus on questioning and modelling the use of scientific enquiry have enabled children to understand the purpose of working scientifically. Evidence in a Year 3 lesson on states of matters shows clear adaptation to meet children's needs.

Impact: Children use a range of scientific enquiry types to find out more about our world around us. Adaptation and variation is clear and enable pupils to achieve well in lessons regardless of their starting points, promoting success for all.

Children use scientific terminology when carrying out experiments and writing up research reports. They are able to make predictions and hypothesize, and they are able to present their results and findings in various ways (graphs, tables, charts).



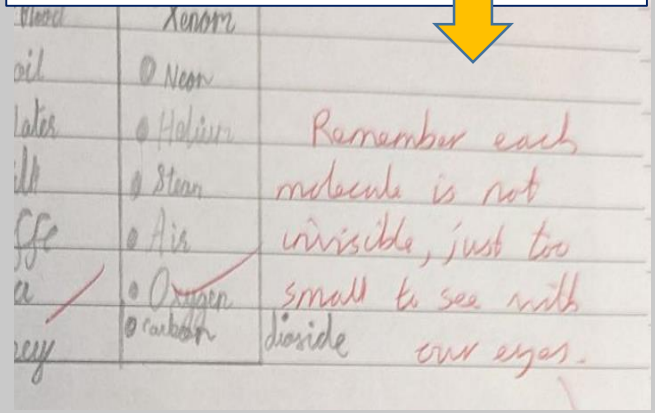


Next steps:
Pupils to use their analyzing skills and interpret findings in a critical way. Pupils to discuss findings with implications for real life in mind and continue to design experiments thinking about the link between learning in and outside of the classroom.

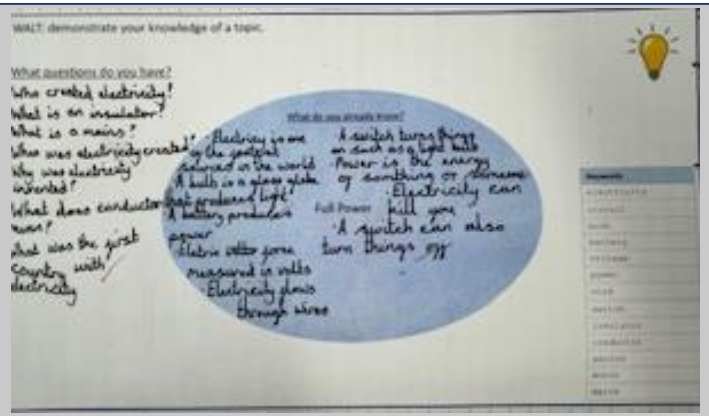
LB: Subject learning is strengthened and developed through a shared understanding of the purposes of science assessment and current best practice.

Intent: A variety of assessment strategies provide opportunities for recalling and recapping prior learning. All children will progress in Science from their starting points.

Vocabulary



Feedback addresses misconceptions for all levels.

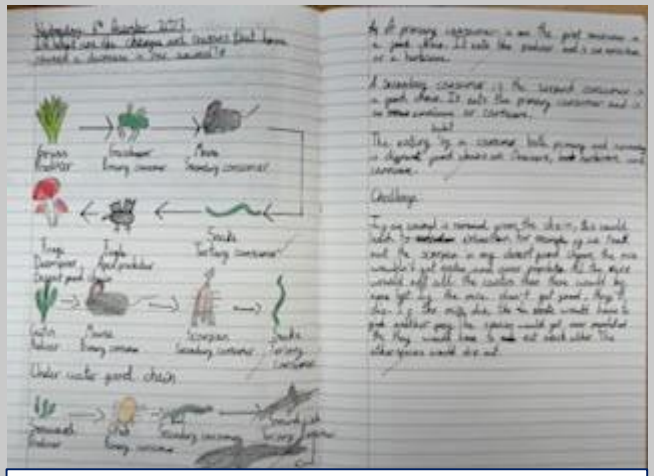


Knowledge harvest enable teachers to assess what children know.

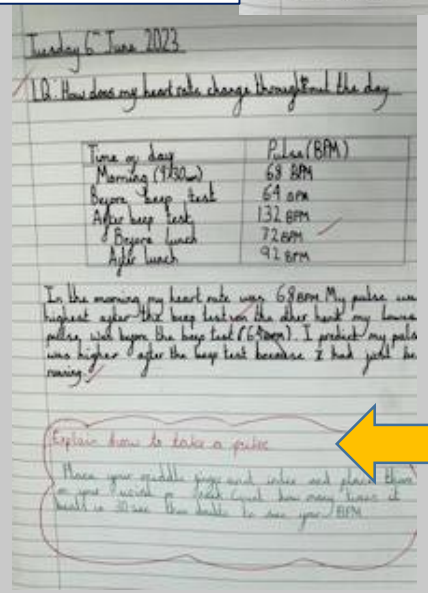
Impact: Children know more and remember more. All children make significant progress from their starting point.

Concept cartoons enable pupils and teachers to address misconceptions.

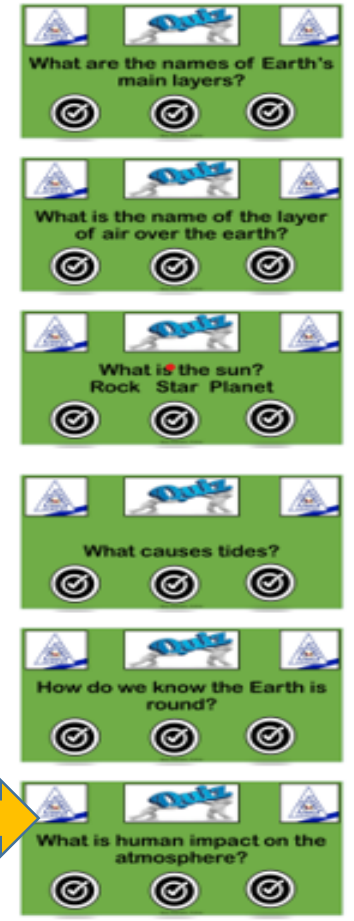
Recall and recap prior learning is part of the TPA teaching model and is used for AfL throughout the lesson. .



Flowchart accompanies text.



Bubble marking questions are used to clarify and extend learning, and to deepen understanding,



Quizzes are used routinely at the start and end of lessons.
They are also used as end of unit assessment for learning.

Next steps: Implement a tracking system that enables teachers to track groups within Science.

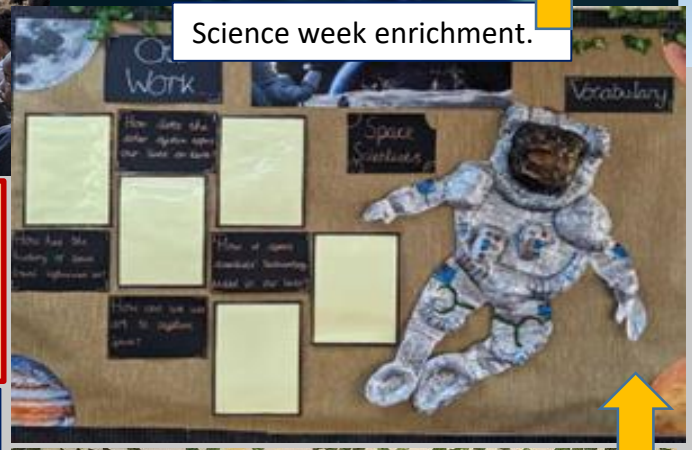
LC: Subject learning is strengthened and developed through a shared understanding of the importance of and strategies for developing all children's science capital.

Intent: Children are immersed in the world of Science and demonstrate scientific literacy. Children are exposed to a wide range of curricular and extra-curricular opportunities, and creating a culture of collaboration is a focus.

Science Week
STEM Ambassadors
Craig – Environmental Scientist Air pollution (Tuesday)
Ian – Introduction to Magnetism (Wednesday, possibly Thursday)
Trevor – Engineers change the world (Friday)

Resources from Dr Gali Musa, performance engineer for Rolls Royce

Science week enrichment.



Impact: Children are excited about Science. They look forward to opportunities that are available to them; collaboration, participation, engagement and motivation is high. Children feel that they can be successful when learning about Science.

Science-related assemblies and educational visits are now routinely part of teaching and learning. The importance of collaboration is recognized by all.

A range of fiction and non-fiction Science texts in the school library.

Interactive displays with key questions and subject-specific vocabulary.

LC: Subject learning is strengthened and developed through a shared understanding of the importance of and strategies for developing all children's science capital.

Intent: Collaborative projects build on children's natural curiosity while creating a sense of togetherness and promote critical thinking. Creating opportunities for articulating ideas.

Whole-school competition building a Time-machine following the theme of the 2024 British Science Week: 'Time'.

Children planned, designed and built a house with a functioning electric circuit in Year 3.

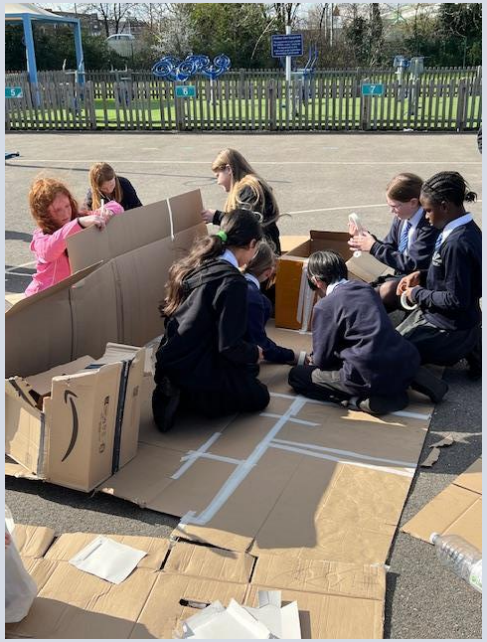
Wednesday 7th February 2024

LQ: How can I use my knowledge of circuits to plan a model of a house?

LQ: What materials and techniques do I need to produce my plan?

Planning

Impact: Children are able to articulate their learning in scientific terms. Peer support is evident and children are challenged regardless of their attainment levels.

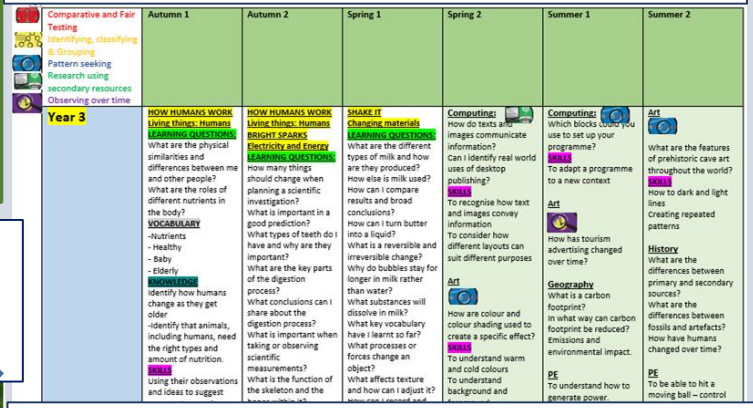


Year 6 group worked collaboratively to build their time machine.

WOA: Science is enriched by a cross-curricular planning that links Science to other areas of learning.

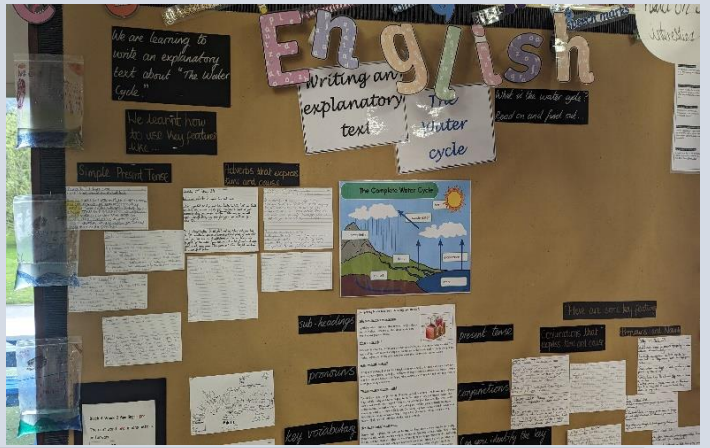
Intent: To grow children's science capital through enquiry-based opportunities and experiences in every subject inside and outside the classroom.

Curriculum map shows explicit Science teaching.



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Comparative and Fair Testing Identifying, classifying & Grouping Pattern seeking Research using secondary resources Observing over time	**Year 3**					
	HOW HUMANS WORK **Living things: Humans** **LEARNING QUESTIONS:** What are the physical similarities and differences between me and other people? What are the roles of different nutrients in the body? **VOCABULARY** -Nutrients - Healthy - Baby - Elderly **KNOWLEDGE** Identify how humans change as they get older -Identify that animals, including humans, need the right types and amount of nutrition. **SKILL** Using their observations and ideas to suggest	**HOW HUMANS WORK** **Living things: Humans** **BRIGHT SPARKS** **Electricity and Energy** **LEARNING QUESTIONS:** How many things should change when planning a scientific investigation? What is important in a good prediction? What types of teeth do I have and why are they important? What are the key parts of the digestion process? What conclusions can I share about the digestion process? What is important when taking or observing scientific measurements? What is the function of the skeleton and the	**SHAKE IT** **Changing materials** **LEARNING QUESTIONS:** What are the different types of milk and how are they produced? How else is milk used? How can I compare results and broad conclusions? How can I turn butter into a liquid? What is a reversible and irreversible change? Why do bubbles stay for longer in milk rather than water? What substances will dissolve in milk? What key vocabulary have I learnt so far? What processes or forces change an object? What affects texture and how can I adjust it?	**Computing:** How do texts and images communicate information? Can I identify real world uses of desktop publishing? **SKILLS** To recognise how text and images convey information To consider how different layouts can suit different purposes **Art** How are colour and colour shading used to create a specific effect? **SKILLS** To understand warm and cold colours To understand background and	**Computing:** Which blocks could you use to set up your programme? **SKILLS** To adapt a programme to a new context **Art** How has tourism advertising changed over time? **Geography** What is a carbon footprint? In what way can carbon footprint be reduced? Emissions and environmental impact. **PE** To understand how to generate power.	**Art** What are the features of prehistoric cave art throughout the world? **SKILL** How to dark and light lines Creating repeated patterns **History** What are the differences between primary and secondary sources? What are the differences between fossils and artefacts? How have humans changed over time? **PE** To be able to hit a moving ball – control

At Belvedere Juniors, we follow the International Primary Curriculum. We identified enquiry-based scientific learning opportunities in all other subjects and created a curriculum map that shows how science is embedded across the curriculum. We used the five types of scientific enquiry type symbols to clearly signpost these opportunities.



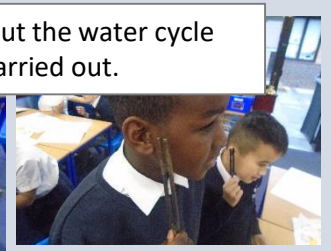
Science is embedded across the curriculum and opportunities are clearly marked.

Explanatory text in English about the water cycle and the experiment children carried out.

Investigating soil and testing rocks in Geography during an educational visit.

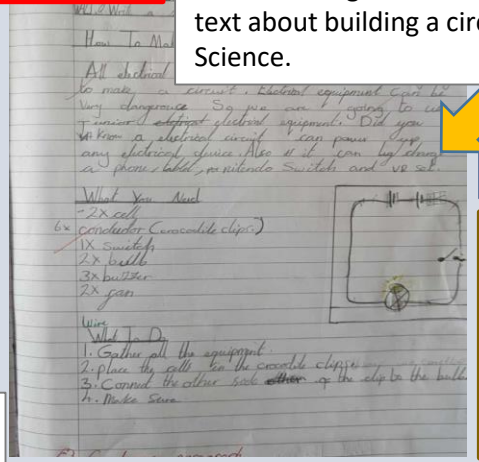
Children observed evaporation overtime as part of their scientific enquiry in cross-curricular learning in English and Geography.

Impact: Children are able to articulate their learning in scientific terms and are able to identify the type of scientific enquiry they are applying in the lesson. Cross curricular opportunities foster children's natural curiosity and wanting to find out more about our world. Staff are confident in planning scientific enquiries in other areas of learning.



Year 3 writing an instruction text about building a circuit in Science.

Building towers in Design Technology, Children were testing materials and their properties.



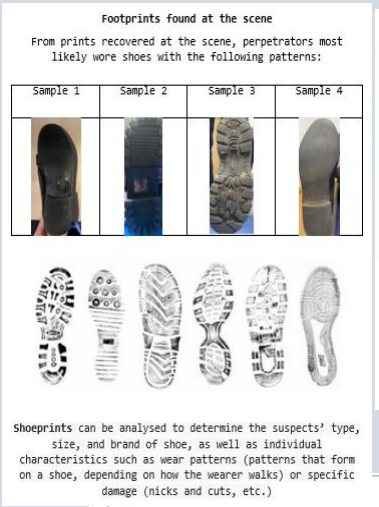
Children are learning about waves in Geography.

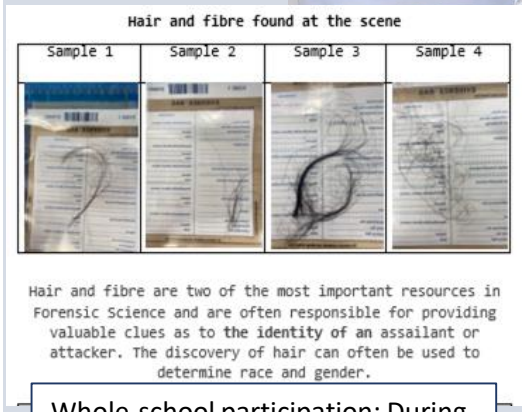
Next steps: Involve and immerse other members of our school community in scientific learning and enquiry.

WOB: Science is enriched by a provision of a variety of opportunities that deepen and extend learning.

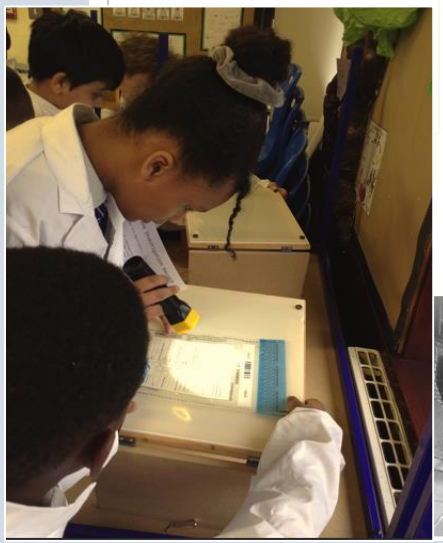
Intent: Children are immersed in the world of Science through internal and external opportunities. Children see themselves as scientists and believe that Science is possible for them.

Children learn about the application of scientific investigation to solving crimes.

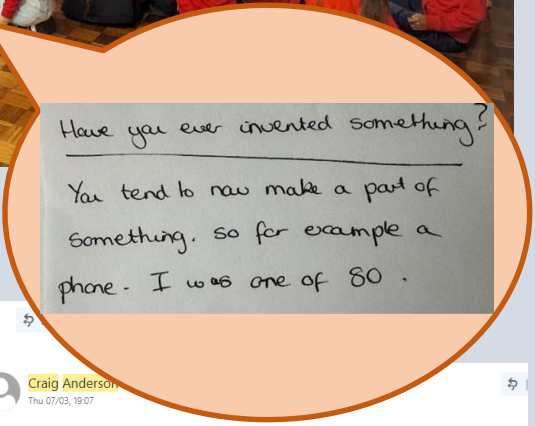




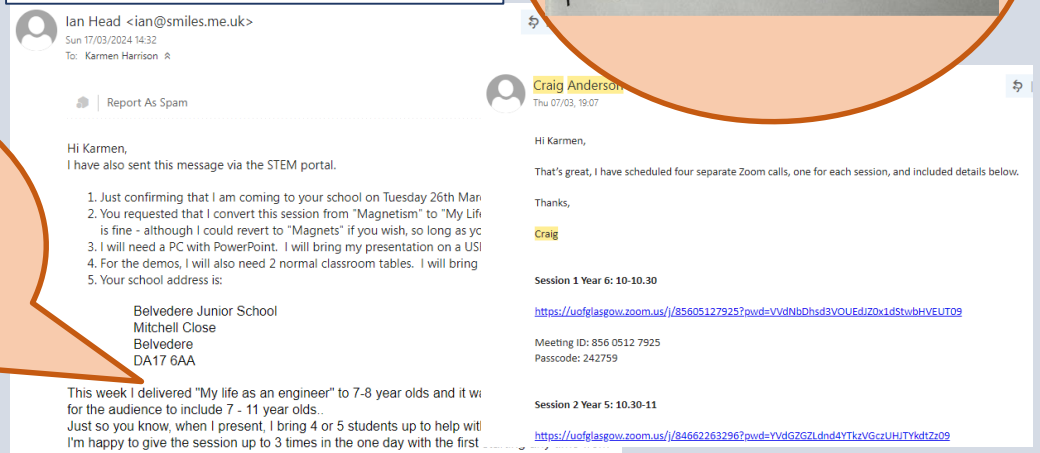
Whole-school participation: During a Forensic Investigation themed Science Week.



"The talk made me realize that engineers have done so much for science." *Year 6 pupil*



STEM Ambassadors visit the children all year around including during Science and Careers Week.



Staff voice survey:
What could be improved in Science at school?

"Having specialists come in and talk about their role and how science has helped them by learning it at school."

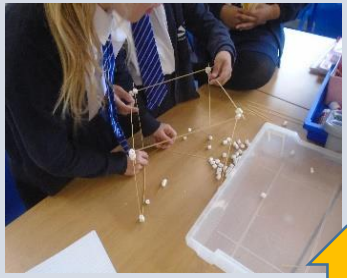
WOB: Science is enriched by a provision of a variety of opportunities that deepen and extend learning.

Educational visits to the Royal Observatory linked to our space topic in Science (Year 5) and the National History Museum to learn about adaptation and evolution (Year 6).

Interactive lecture 'It Takes Guts' at the Science Museum.

SCIENCE MUSEUM

Following the workshop on the digestive system during the educational visit to the Science Museum, children recreated the digestive system using food and tights. Children observed how food turns into faeces over time.



Interactive learning: building structures. Children enjoy experiments and experiential learning, which was evident in the pupil voice survey.

Children had the opportunity to watch and engage with LIVE online lessons and assemblies during Science Week 2024.

The Live Assembly (British Science Week 2024)

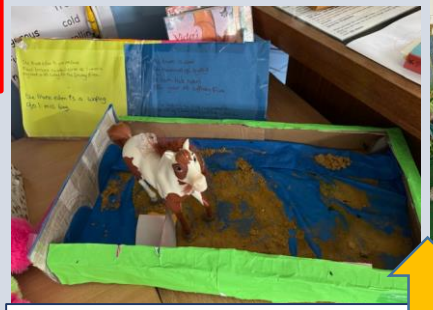
1 x Ticket

Order total: Free

Friday, March 8, 2024 from 9:30 AM to 10:00 AM (United Kingdom Time)

Impact: Pupils across the school see the value of Science learning through an improved understanding of how scientific knowledge and skills can be applied in real life. Children's science capital supports critical thinking and promotes global citizenship. Children experience Science as a fun, inquisitive subject that is available to all regardless of background.

Children made prosthetic limbs in a cross-curricular lesson of Science and DT and thought about the wider context of how scientific innovations can improve people's lives (also for slide 10, cross curricular links and slide 5, effective teaching strategies).



Cross-curricular home learning opportunities involving scientific investigations and enquiries about rivers in Geography.

Next steps 1: Continue to build links with secondary schools in our region, which will enable our pupils to access advanced science education and work in bespoke science facilities.

2: Build family links, which will enable parents and families to participate in science activities with children in the school and at home.