

SLA Key Need:

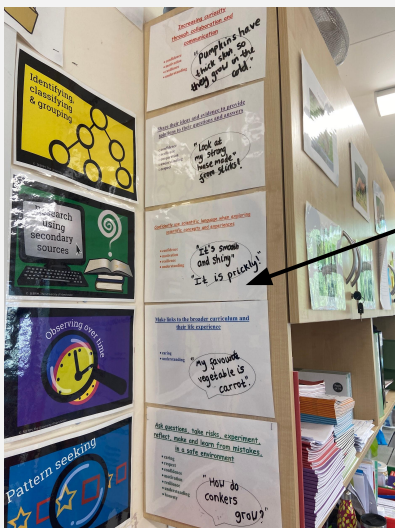
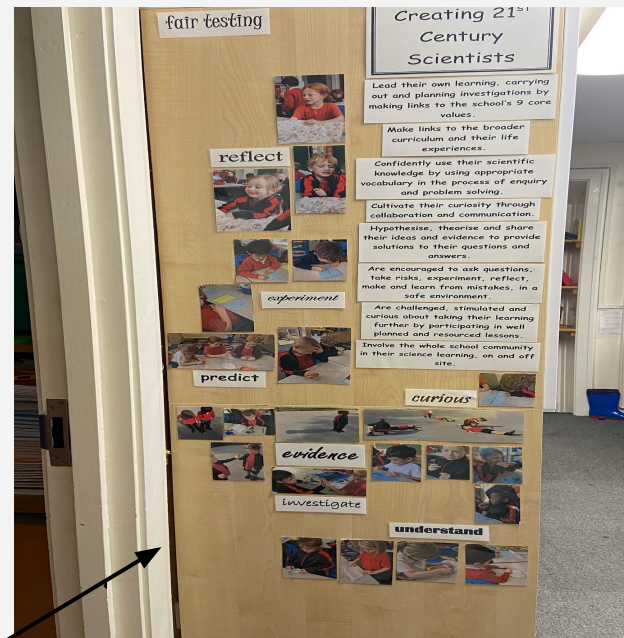
Maintain the clear vision for science and regularly review it with staff and pupils

Progress: Teachers and Governor's met and agreed our existing vision and School Science Principles is fit for purpose and is an umbrella for how we teach Science in school. KS1 Teachers were differentiating the vision for their classes to reflect the ages of their pupils.

J	K	L	M	N
How could you teacher, or the School improve Science?	Do you think Science resources are suitable for investigations you have completed?	Do you understand the different Science Enquiry Types?	Do you understand the Principles from the school's vision of making 21st Century Scientists?	Do you work on your own or in groups in Science?
I think we could do more practicals and do it a little bit more.	I think most experiments have suitable resources	yes they are mentioned every lesson	Yes it is discussed and we have photos of us on the wall	Both
more practical and interesting experiments	Yes, there are a lot of scientific equipment to use.	Yes, we are Pattern seeking now	We talk about them at the beginning of the year in each year	Both
Nothing I think the science is fine	yes	They are pointed to in every lesson	Mr Colchester explained them and how it will help us improve our science	Both
Do a few more experiments	yes	Yes	yes	In groups

Pupil voice demonstrated that most KS2 children were aware of the meaning of the School Science Principles. These have been embedded and referred to for the past four years. Displays in each class celebrate their learning

Impact: 50% of KS2 pupils demonstrate a knowledge and understanding of the vision through pupil surveys, discussion groups and displays. Upper Key Stage 2 have more in-depth understanding of the vision (93%). 100% of staff retain a good knowledge of the vision and how it is applied across the school



C1 teacher (EYFS/Y1) breaks down the School Principles further, using speech bubbles containing pupil quotes after discussion with the children about the topic they are covering, what they want to learn and why.



C2 teacher (Y1/2) breaks down the school science principles into easier steps for the age of the children and adds photographs to illustrate where the children have experienced the school vision in action. This is updated regularly as topic changes.

Our next steps: In Autumn term 2024, Teachers, Governors and Pupil group to agree a more appropriate age-related version of the School vision and Principles for use in EYFS and KS1.

Parent focus group to review in Dec 2024

SLB Key Need:

Sustain the Primary Cambridgeshire Primary Partnership (Ogden Trust) as we we exit the funded four year programme

Progress: Agreed partnership plan in place between 6 schools.

Partnership with Physics department from feeder College leading to Physics books and playground equipment purchased and a planned Outreach project.



Collaboration on Ogden Physics action plan 100% agreement on actions. Agreement between partner schools on resources / books to support physics teaching, clubs and loans for pupil premium.



Impact: 100% of schools engaged in the partnership leading to shared knowledge of Physics teaching and learning across schools and by phase impacting on practice. Lunchtime Science clubs established - increasing profile and access to Science for more vulnerable pupils..

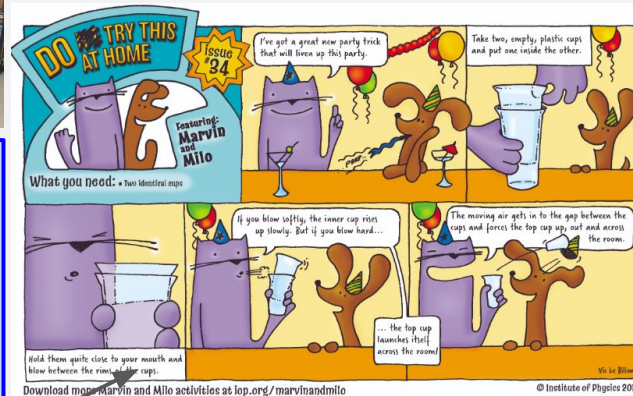
Caroline Barker

Wed, 27 Mar, 16:07

to S, me

Hi Sarah

Brilliant - this would be great to organise - any Science (although Physics was muted as part of our Ogden Trust partnership in terms of available funding) would be great for Y6. Do let me know some prospective timings and dates and what you can propose. Afternoons are preferred in the run up to SATs and we are on a week's Residential from May 20.



Download more Marvin and Milo activities at lop.org/marvinandmilo

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Year 6 Science Leads planned a series of activities using Marvin and Milo cards. 100% of pupil feedback positive as to their increased knowledge and engagement in the activities. Focus on pupil premium and those with less access to home learning, external trips and opportunities without the additional enrichment.

Our next steps: expand loan scheme already in place. Pupils to co-develop activity cards to share with partnership schools. Physics book Padlet shared across partnership schools. Embed Science transition activity for Year 6.

Engagement with Ogden Trust to ensure leading physics support and opportunities for our school and partner schools within the Ogden partnership. Updating partner schools termly via email and face to face meetings - 100% schools sustaining good engagement.

Ogden Trust update - Spring term 1

Guy Underwood - guy.underwood@greatabington.s... Fri, 2 Feb, 15:58

Dear All,

We are writing to update you on activity with the partnership.

Physics based playground equipment has been purchased (2 boxes with items) ideal for a pupil run physics club when the weather improves. Our original playground set is with Meadow so another two schools can request a box each to use this year.
Action: email Caroline if you would like to collect a playground physics box.
caroline.barker@greatabington.school
Please see attached PDF which outlines the equipment purchased

Physics based reading material has been purchased for each school. Meadow School collected their books but all other schools need to arrange collection again via Caroline.
Please see attached PDF which outlines the books purchased



SLB Key Need:

Continue to ensure staff awareness of current Science updates, resources and new materials to support their teaching

Progress: Science CPDL developed through a timetabled and systematic programme across the year. Consistent format of slides and exemplars of good practice made accessible and available to all staff through online storage. Invited to SLP moderation training for end of KS2.






Science leader invited to attend SLP moderation having discussed as part of leaders meeting observations from DfE working party on moderation and assessment at the end of key stage 2 (2019)



CPDL - Understanding Scientific Knowledge - needs analysis tool February 2024

This form will capture our collective knowledge and understanding of Scientific stages (EYF5 > KS1 > KS2) following continuing professional development. Focus on assessment, curriculum progression and pupils outcomes both written

Online form captures scientific knowledge with aim of identifying gaps within our provision due to mixed cohorts and 2 year curriculum mapping. Identified gap in Y5 cohort around Properties and Changes of Materials.

Principle	Class 1	Class 2	Class 3	Class 4	Class 5
Are challenged, stimulated and curious about taking their learning further by participating in well planned and resourced lessons	Oct 23 Exploring our senses: we investigated the broad bean seeds and plants and discussed what we could see, feel, smell and hear. We discussed and identified the different parts of a plant.	Sept 23 We discussed carnivores, herbivores and omnivores and linked this to the food that wild animals and our pets eat.	Nov 2023 - series of lessons around human digestion: labelling of parts, games, paired research, videos, Dr Jo Digestion workshop, explaining how model represents digestion, culminating in written explanation of human digestion.	Nov 23 - series of lessons around human digestion: labelling of parts, games, paired research, videos, Dr Jo Digestion workshop, explaining how model represents digestion, culminating in written explanation of human digestion.	17.11.23 - using their knowledge of microorganisms, looking at types of bacteria under a microscope and researching the ideal environment for replication. Y5 took sample swabs in various locations (toilet, Mrs B's phone, tables etc). Observing the results over time using agar plates.
					

Impact: 100% of staff reported improved access to online Science resources (Ogden, STEM, ASE etc.) Shared document that highlights any knowledge or teaching gaps over the two year curriculum programme. Additional Y5 Science programme (6 x 1 hour sessions after school) to ensure equity.

Our Principles in Action - to share best practice and develop

Our next steps: Embed staff Science development as part of a personalised pathway including face to face and online courses aligned to annual Science CPDL survey. Exemplars of Great Abington moderated science pieces available online.

PSQM Science Development Log
Great Abington Primary School

Colour code your entries as: **PSQM for subject leader**, **CPDL for other staff**, **monitoring activities**, **meetings with SLT**, **events/enrichment** and **other**. PSQM Outreach schools (only) should colour code entries for **other**. Note that CPDL is more than just courses and should include a range of examples of professional support including reading, monitoring activity, informal meetings with a colleague to help with planning etc.

Date	Activity	Who was involved	A sentence or two to explain the IMPACT	What will you do as a result?
2/5/23	ASE Year 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SLB Key Need: Ensure Subject Leader monitoring to be more systematic

Progress: Subject Leader worked with HT and staff on a structured approach to curriculum monitoring (Science was the blueprint). Subject Leader worked alongside Governor and Curriculum Lead to ensure quality and impact 🔍

Monitoring - Pupil Outcomes
Improving opportunity for all

Focus: Equity between Y4s spread over C3 and C4
Date: November 14, 2023
Present: Helen Colchester (Y4/C4), Jess Robinson (Y4/C3), Caroline Barker (Subject Lead)

Class:	3&4	Subject:	Science - Book looks across Y4's	Term / Year	Autumn / 2023
Curriculum plan - intent for the term		Curriculum coverage as planned so far for both classes			
Vocabulary / reading* - intent for the term		Embedded in topic - ambitious vocabulary lists extended in both classes and followed up after any apparent misunderstandings			
Books / other evidence of learning Progress and learning journey		Sequential unit of work with assessment - C4 and C3 (needs recording). Photographs included as necessary to supplement the learning experience C4, Y4's have more written content and teacher feedback; more able children. Aims clear and science enquiry evident C3, Y4's - some lack of depth in recording their learning and observations and some drawings don't explain what the learning intent was.			
Include adaptation for pupil groups (SEN, PP)		Use of Scaffolding for relevant pupils. C4, several Y4s have SEN - scaffolding, cloze exercises, word banks etc to support. C3, Y4's younger. 2 have EHCP's and this is evident in the books			



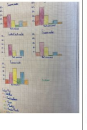


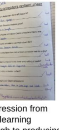




Science Leader time allocated to monitoring Principles in Action across the Early Years curriculum in to KS1. Exploring our senses; we investigated the broad bean seeds and plants and discussed what we could see, feel, smell and hear. We discussed and identified the different parts of a plant. ➡

Agreed weekly monitoring format enables a consistent and fair approach for all staff. The use of Google doc reduce inefficiencies and allows for the documents to be shared with Lead Governors. Alongside the shared document face to face feedback is valued and enables professional dialogue ensuring clear next steps for staff.
Images are used for sharing practice and ensuring that our Principles in Action and Enquiry Types are having impact across classes and key stages. The visual nature of the document enables access by all (TAs, ECTs, Governors) to share good practice, modelled by subject leader.

Impact: Regular, timetabled Science monitoring and time built in for pupil, staff and Governor feedback. Curriculum monitoring was a strength - recent (February 2024) Ofsted Section 5 Inspection. Science was part of the evidence base.



Class	Evidence Vocabulary	What do children already know?	Presentation	End of topic assessment	Enquiry Type	Progression
	 Vocabulary identification is embedded in Class 5. I need to remember to ensure we go back at the end of a unit of work to double check any misconceptions	 Demonstrate their understanding of adaptation	 Improved accuracy (use of appropriate tools - ruler) and labelling (key)	 Consistent use of Bath Spa for moderated assessment across cohort and across phases	 Enquiry type identified and referenced through work in books - follow up discussion with pupil identified that ET was known and understood	 Progression from their learning through to producing a reading comprehension activity (science context)  



During Science week dropins used to monitor children's ability to accurately measure and record their data ready for analysis.

Our next steps: Continue to give written and verbal feedback as required. Celebrate and share good practice. Provide targeted support where it is needed and identified. Thematic approach piloted on quality of measurement / recording to be rolled out across other areas as identified by KS3

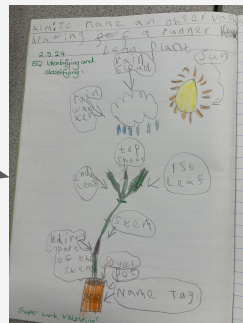
SLC Key Need:

Mentor the new class teacher

Progress: Collaboration on a bespoke continuing professional development programme using training from STEM, PSQM and OGDEN. School capacity able to build on teacher knowledge from courses and ensure that all school systems include enquiry types

Identifying and classifying - extract from new CT's pupil premium child going beyond expectation - rising to challenge around labelling and grouping

Observation over time - New CT pupils grew their own bean from seed and recorded changes over time



Impact: Colleague now fully understands the 5 enquiry types and uses them within planning, lesson delivery, pupil feedback, display opportunities and in conversations with external agencies (Ofsted inspection - February 2024, County Advisers)



Developing high quality Science teaching

Medium term plan: Key information for teachers

Class 2: Year B: Summer Term 2024:

Science

Focus area in Nat Curriculum	Plants/ Living things and their habitats
NC objectives - key knowledge to learn	<ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.
Enquiry Types	Identifying and classifying types of plants and trees Observing the growth of plants and trees over time Identifying and classifying different habitats and food chains

Medium term planning documents that are for internal school use and for parent / carers as part of our curriculum webpage now include enquiry types information and guide the new class teacher.



Class teacher detailed the impact of her training directly into the school development log including her next steps.

Science leader and School Governor lead able to review impact of expenditure (time / invoices) against pupil outcomes / teacher knowledge development

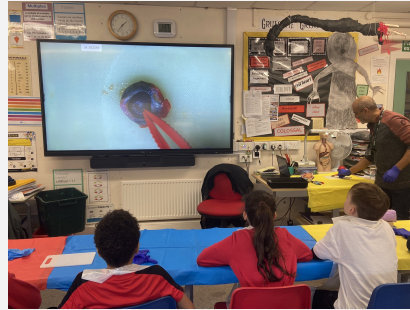
Date	Activity	Who was involved	A sentence or two to explain the IMPACT	What will you do as a result?
7/3/24	PSQM - Working Scientifically Remote Session led by Clare Warren (Science Specialist)	CT	Very useful course for the C2 Teacher (C2T) who is new to the school. Excellent sign posting to the resources from RSC, including demonstration videos. Course included getting participants to undertake experiments with simple resources to explore the elements of working scientifically. Recap about the 5 Enquiry Types (already well embedded at GAPS), PLAN / TAPS / PSTT resources. Good references made to latest research, including EEF Improving Primary Science - 6 Key Recommendations and Ofsted findings. Recommended 10 Key Issues Report on https://www.scienceacrossthecity.co.uk/	C2T to share useful links / resources with staff. C2T to explore Royal Society of Chemistry Steps into Science resources further and read ASE Primary Science Skills & How to Teach them, plus PSTT Enquiry Skills Guide. C2T to reflect on Science Types of Enquiry taught over the year in C2 and make adjustments as necessary. C2T to watch demonstration videos and ensure that there is an appropriate balance of pupil and teacher questions, to avoid what the course

Our next steps: To develop a shared document / associated resources that enable self study for new staff around enquiry types. Module developed for support staff and parents by Year 6 pupils demonstrating their knowledge on enquiry types with exemplars

SLC Key Need:

Ensure our updated Medium Term Planning is effective and informative for teachers, parents and community

Progress: Worked with subject association specialists, School Improvement Partner, Curriculum Consultant to develop bespoke medium term plans for each class across our two year cycle.



Planning now extends pupils learning and experiences from inside learning to outside and vice-versa. Parents engage with planning and offer their expertise (eyeball dissection!)



Focus area in Nat Curriculum	Electricity - Physics	
NC objectives - key knowledge to learn	<ul style="list-style-type: none"> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit; Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches; Use recognised symbols when representing a simple circuit in a diagram. 	
Enquiry Types	Carry out a range of pulse rate investigations: <ul style="list-style-type: none"> Fair test – identifying variables and collecting and using data to justify ideas Pattern seeking – how the brightness of a lamp changes if you add extra lamps in a series; does the number of batteries affect how the motor spins? Identifying & classifying; reasoning - which engineer is making mistakes in his circuit drawings? 	
Relevant prior learning	Prior learning	Teaching points/notes
Y4	identify common appliances - that run on electricity; construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers; identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery; recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit; recognise some common conductors and insulators, and associate metals with being good conductors.	
Y6		Initial lesson as assessment opportunity for all children. Address any misconceptions regarding prior learning
Enrichment opportunities	Design, create and test a game that involves a circuit to go on a stand at the Summer Fair - cross curricular D&T Write a letter to a toy company complaining about identified faults in an engineer's circuit designs for a toy Persuasive text extolling the virtues of a particular game the children have designed for the Summer Fair	
Outdoor learning	Design a circuit using natural elements - devise a key that represents inputs and outputs. Can the buzzer volume be heard at a school fair? How do we change?	
Equalities, diversity and inclusion	Consider career pathways linked to this area of physics - Ogden Trust resources Women in Science - 50 fearless pioneers who changed the world - Rachel Ignatofsky The Speed of Starlight - a visual exploration of Physics, Sound, Light and Space - Colin Stuart/Ximo Abadia	

Impact: 5 terms of refined medium term planning by class which now includes outdoor learning, enrichment, equalities and diversity and sustainability, climate change. Teachers report the focus on these areas has improved engagement.

Each class publishes on the school website their termly Medium Term Plans. Parents / Carers report these enhanced details support discussion at home, reinforcing key vocabulary and signposting any opportunities they may be able to help with in school.



Class 5 Key info for teachers_ Science Year B Summer Term 2024.pdf



Class 4 Key info for teachers_ Science Year B Summer Term 2024.pdf



Class 3 Key info for teachers_ Science Year B Summer Term 2024.pdf



Class 2 Key info for teachers_ Science Year B Summer Term 2024.pdf



Class 1 Key info for teachers_ Science Year B Summer Term 2024.pdf

Our next steps: Integrate the climate change / sustainability theme across the relevant medium term plans and work with industry partners within our locality. Further develop links with Year 7 provision at our feeder school.