

Vision Staff voice

SL (A) - There is a clear vision for science, created and implemented by teachers and children, through principles for teaching and learning.



parent-involvement
awe
questioning wonder
inspires
memorable
enthusiastic immediate
involvement enquiry
independence progression
child-led real-life cross-curricular
hands-on resourced
enthus testing relevant skills
well-organised attainment
prior curiosity
prepared application
predicting knowledge
practical

There was no shared vision for science in school.

Staff were asked what makes a good science lesson. The responses make up our vision for Science.

Engaging

Practical

Enquiry

Context

Vocabulary



Year 4 testing the strength of their 'boat' designs.



Year 6 identifying fossils.



Children discuss and identify which enquiry type they have used in a lesson.



Investigating the best shape for a floating soap dish as part of the bathroom theme - BSW

Symbol:



Word: Germinate

It starts with: G

It rhymes with: Exterminate

It has 3 syllables.

Word aware strategies combined with Makaton signs are used to embed scientific vocabulary.

Principles Learner voice

SL (A) - There is a clear vision for science, created and implemented by teachers and children, through principles for teaching and learning.

What makes a good Science lesson? (Year 1)

Experiments
Growing plants
Writing
Potions- Chemicals.
Making potions.
Making things.

There was no shared criteria for the principles of a good science lesson

Learners were asked what makes a good science lesson. The responses make up our Principles for Science.

Enjoy

We used a pulse meter when we were doing work on the heart. I have never used one before.. - Year 5



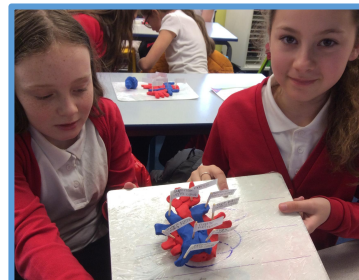
I like learning outside, sometimes we do stuff that doesn't need to be outside. - Year 4

We made models of our hearts from play doh- we had to label them if we could. It was a bit like science plus art! - Year 6

Believe

It is like a contract for science! - Year 5

We had to think of questions to classify the shells - then we went on a local survey to see if we could find animals or plants to classify.- Year 3/4



Achieve

We planted sunflowers and kept a diary, mine is getting really big - Year 1



I loved using the magnifying glasses and pouters. You could see everything so clearly. Year 2

Before PSQM.

Science CPD was for SL only.

Termly attendance to Stockport Subject Leader courses. Feedback was a 10 minute slot in staff meetings.

Limited opportunity to discuss feedback with colleagues on monitoring.

SL (B) - Strategic support for subject leadership is provided and includes:

- Focussed CPD for subject leader
- Regular release time
- Resources to facilitate development in science.

No designated staff meeting time for Science as a core subject.

Allocated time for termly full staff meetings for Science.

Extra meetings arranged specifically for feedback on monitoring to staff

PSQM recommended reading materials focussed SL in improving teaching and learning in Science and shared with staff when appropriate

After PSQM.

Regular meetings with SLT.

SL has engaged with online CPD and become a member of a number of organisations to enhance roll as SL. These include ASE, PSTT and RSC. These resources have been valuable in keeping up to date with best practice in Primary Science teaching and leading staff CPD.

Time out of class allocated to carry out book scrutiny and learner voice.

SL (C) - There is a monitoring cycle, including pupil voice, that informs actions taken and the development of science.

Learner voice, staff voice and book scrutiny indicates the starting points by which we monitor progress.

What are the 5 types of enquiry?

You can experiment where you make stuff but also in our egg experiment we checked it for a week (RW)
 We do experiments, we use our ipads to look up information on renewable electricity like wind energy (HH)
 We do experiments sometimes and we do research (OC)



- ✓ Evident in classrooms on Science Stations (and referred to)
- ✓ Evident in children's' books (stickers – it is important to get the children to discuss which enquiry type they have been involved in – **discussion is key**)
- ✓ Children must be familiar and confident with these terms. (If you want to add these to your planning you can)

Staff CPD delivered on 5 types of enquiry. Planning template and resources highlighted for all staff to access.

Monitoring to ensure evidence of enquiry types.

Week 4
 L.C. I know the function of different parts of flowering plants and trees.
Outdoor Learning:

Do trees with the widest trunks have the biggest leaves?



Discuss how to make our investigation fair (measure trunk a certain distance from the base/ measure 3 leaves from the same tree etc.
 Use interactive planning tool <http://www.ciec.org.uk/interactive-planning-tool.html>
 Teacher support <http://www.ciec.org.uk/pdfs/primary/interactive-planning-tool-guidance.pdf>

Subject leader plan informs next areas for development.

| Actions for this Year (2020/2021) | Outcomes | Next Steps |
|--|---|---|
| PSQM round 20. Highlight strengths in science across the school and identify areas for improvement | https://drive.google.com/file/d/1jqzqwtEva7Dz1tw7LxEGlkDCjmWU-5u/view?usp=sharing PSQM folder | Complete PSQM round 20 |
| Identify gaps in learning due to COVID19 and work on missed learning into future projects - possibly by incorporating aspects of science missed by combining elements in current LCC topics. | Discussion with Assessment Lead regarding recording of summative assessment using the APS tracker Bridging back SODA activities are enabling gaps to be filled | Moderation of work in science to ensure judgements are accurate |
| Continue to monitor differentiation in science activities, ensure evident in science books. | <ul style="list-style-type: none"> As part of PSQM process monitoring showed that SEND pupils were adequately differentiated but more challenge was need for more able pupils Staff meeting- all staff to plan in challenge and highlight in planning | Monitor evident in children's books annotated/highlighted so clearly identified |
| Continue to monitor TAPS assessments and ensure correct format is followed and support staff where necessary. | TAPS assessments completed by all year groups | ongoing monitoring |

Next steps highlighted in Subject lead action plan.

5 Types of Enquiry

What are the 5 types of enquiry?

- Observing over time
- Discover
- Questioning

Where have you seen them?

On Science station

How do you use them?

We did observation over time with Darwin's finches. Logo is usually on sheet. Sometimes discuss it.

Work watch: Evidence of some stickers (Teacher led) **More discussion and input from children needed during lesson so they discuss and choose which type of enquiry they have used will clear up misconceptions.**

Monitoring through learner voice and book scrutiny highlights further work needed- feedback given to staff

T (A) - There is provision and signposting of relevant internal or external professional development and support with which staff engage.

In November the results of the staff survey indicated that staff were in need of support for teaching certain aspects of science and were unsure of where to find this.

Week 1 – Circulation: arteries/veins

LC. I know how to identify and name the main parts of the human circulatory system.

Revisit prior learning about oxygenated/deoxygenated blood.

Watch video:
https://www.youtube.com/watch?v=GVU_zANtroE
<https://www.reachoutcpd.com/courses/upper-primary/body-systems/body-systems-big-questions/objectives/>

Outdoor activity: In small groups, lie on the ground. Use image of heart to show heart placement on the body. Use blue/red wool to show the arteries and veins.

Research activity:

- 1) Is the heart symmetrical?
- 2) Why do you think the network of blood vessels is so extensive?
- 3) Why is the heart muscle thicker on the left-hand side?
- 4) Name the types of blood vessel.
- 5) What type of blood vessel carries blood away from the heart?

EXTRA CHALLENGE: Write and research your own questions

CPD was given by the Subject Lead to highlight resources available.

All staff engaged in Science CPD either through the Subject Lead delivered CPD in staff meetings or engaging in their own through online courses.



We found a science song on one of the websites. It is great for vocabulary. Reception absolutely love it! Reception teacher

I completed the course on circulation. There were some super resources, I have saved the video to share with my class. Year 6 teacher.



The discussions we have when we use explorify are amazing - the children develop their scientific vocabulary and it shows how much they have listened by the depth of the discussions we have. Year 6 teacher

I completed the classification course. I have some great ideas for practical activities to do with my class next term. Year 4 teacher

NEXT STEPS
What has been the impact of the metacognition and self-regulation strategies in Science? (working party)

T (B) - Teachers are supported to use a range of effective strategies for teaching science which challenge and support the learning needs of all children.

Initial book scrutiny showed that staff were differentiating work for SEND children but there was little evidence of challenge for the more able.

Sometimes I am really intrigued by something and push myself to do more.
Year 5

I love a challenge it makes me feel like I am really using my brain.
Year 3

Staff were asked to include challenge activities in their planning (see next slide)

Weekly SODA activities help to clear up misconceptions, plug gaps in learning and develop vocabulary.

Wednesday 5th May 2021.
I know how animals and plants are adapted to suit their environment.
Research the habitat of these different species and explain how they have adapted to survive.

date palm tree cactus plant falcon camel Arabian oryx

Extra challenge: Polar bear

Better. Hence the fact that this Arabian Oryx is still alive now. Adaptation is not a part of living, it is a process. The parts such as the white coat to reflect sunlight, long horns and brown markings on their face, are called the adaptive traits.

Extra Challenge!

The ways that polar bears have adapted is, their wide large paws, their sense of smell and their layer of fat under the skin to make it warmer. The reason the other polar bears didn't survive was because they had different paws and their paws weren't made for their habitat. Or their nostrils might not have been able to close underwater.

Year 6

When Miss sets me a challenge I do more, because that's what I do anyway. I am very determined in Science Year 4

If we are doing well Miss gives us extra. Year 2

What is the same?

What is different?

Monday 19th April 2021
I know the difference between living and dead and never been alive.

Challenge: Write your own facts and include your opinion.

The Stegosaurus

S-t-e-g-o-s-a-u-r-u-s

Reptiles were as as
was as a date

I like it because it is a herbivore

What have you found out?

- The Stegosaurus was alive in the past
- Stegosaurus fossils have been found in western USA and Africa
- The Stegosaurus is a herbivore

Year 2

PLANNING - Following Staff and learner voice activities areas for development were identified, these were knowledge and understanding of Enquiry types, outdoor learning, extended writing opportunities (focus across the school) and challenge for the more able children. The subject leader gave CPD to all staff and a new planning template was agreed on.

Year 1 Science Planning

| | | | | | |
|--|--|---|---|--|---|
| Pupils will have a look at an old coat and cut it open to see what is contained inside the lining. | Pupils will investigate how long a bottle of hot water remains warm when it is covered with different materials. | Consider the materials available in the classroom that would help to construct a house for Beegu to live in. To help with this activity, pupils will pretend that Beegu is exactly the same size as a play person. Pupils will work with a partner to design the house and then explain why they have chosen the materials that they have. Pupils will then evaluate their designs, thinking about the materials they have used - what would they do different next time. | Explore different materials and their uses. The focus will be on Beegu's house. What would glass be used for in Beegu's house? What would wood be used for in Beegu's house? What would plastic be used for in Beegu's house? Work out the advantages and disadvantages that these materials have in respect of building a house. | Children will consider what their beds are made of. They will make a list of the materials used before concentrating on the mattress. They will attempt to create the cosiest blankets and also create a 'springy' mattress. | Discuss what we use to keep dry. Which materials work and which do not? Find at least one material that be used to keep someone dry. Find at least one material that would be used to keep someone dry. |
|--|--|---|---|--|---|

Before PSQM

Staff survey response - Strengths - I found the changed planning format with greater emphasis on 5 types of enquiry really helpful. Children have loved outdoor activities and have really got into their writing.

Staff survey response - Highlighting how scientific the EYFS curriculum is has really made us feel part of the school's bigger science picture.

Challenge evident





Enquiry types clearly evident

Opportunities for outdoor learning identified

Assessment

Extended writing opportunities

Science Year 5/4 Summer 1 Which plants and animals thrive in our local environment?

| Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 and 7 |
|--|---|---|---|---|--|
| <p>L.C. I know how to use and construct food chains to identify producers, predators and prey.</p>  <p>Watch food chains ppt Make own food chains</p> <p>Match food chain vocabulary definition cards. Challenge Use the correct scientific vocab to label the food chains they have made. Challenge cards</p> | <p>L.C. I know the function of different parts of flowering plants and trees.</p> <p>https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-parts-of-a-plant/zvdkpg8</p> <p>Outdoor Learning: Go onto field/ tyre area and pull up grass/ weeds Take a photo. Make a pic collage to identify -root, stem, leaf etc. Challenge Include functions</p> | <p>L.C. I know the function of different parts of flowering plants and trees. Watch the anatomy of flowers</p> <p>https://www.bbc.co.uk/programmes/articles/Mf5rhbTkHLZ3fbJzScyDvC/primary-science-plants</p> <p>complete parts of a flower sheet Observe a flowering plant break it up into component parts, Challenge Identify and label</p> | <p>L.C. I know the function of different parts of flowering plants and trees.</p> <p>Outdoor Learning: Do trees with the widest trunks have the biggest leaves?  Discuss how to make our investigation fair (measure trunk a certain distance from the base/ measure 3 leaves from the same tree etc. Use interactive planning tool http://www.ciec.org.uk/interactive-planning-tool.html Teacher support http://www.ciec.org.uk/pdfs/primary/interactive-planning-tool-guidance.pdf</p> | <p>TAPS assessment</p>  <p>L.C. I know how to gather, record and classify data. L.C. I know that living things can be grouped in a variety of ways.</p> <p>Outdoor Learning: Local survey sorting. Children to gather/photograph/draw plants and animals from their local envt. (field) Classify the living things into groups using correct vocab e.g. vertebrates /invertebrates plants. Create subsets within groups e.g. flowering/ non-flowering plants, birds/ mammals/ invertebrates etc.</p> | <p>L.C. I know how changes to an environment could endanger living things.</p>  <p>Watch ppt 'Environmental changes' Complete environmental changes activity Extended writing: Complete endangered animal report SEND/LA verbal report/pic collage</p> |

After PSQM

SEND pupils are able to record their work in a less demanding format eg pic collage or video.

T (C) - Resources are audited annually, well-organised and accessible, so that children can regularly and safely use appropriate practical and digital resources, information texts and the outdoor environment.

Children in school have access to a variety of spaces for outdoor learning including the playground, the school field and the EYFS Willow garden

We had a scavenger hunt for the parts of the heart. Year 6



Each classroom in school has a Science Station. It is an area where children can locate resources they may need for their current topic as well as key vocabulary and reading/research materials and QR codes leading learners to independent research or challenge activities.



We went in the willow garden and looked for bugs and insects (mini habitats and microhabitats). We put some cool insects in a jar, got magnifying glasses to look at them, took a picture, released them and ticked them off our list. Year 2



We have science books in the reading area, the science station, knowledge mats. In the front of our science books it splits it up into biology, chemistry and physics. Year 6

The subject leader is responsible for the school's science budget. This is used to purchase larger scale equipment and VVE activities. However, the majority of science equipment is purchased from each class/year group's team. This enables staff greater autonomy over the resources they purchase to teach the topics they study.

We used a pulse meter to measure our pulses before and after we did some exercise. Year 6

In addition, the Science Station gives the learners an ideal opportunity to deepen their learning through interactive activities and challenges. These can be accessed as part of a lesson or independently.

Learning outside is super fun. Year 4



We use the school WhatsApp group as a 'shout out' system so that resources can be shared across the school



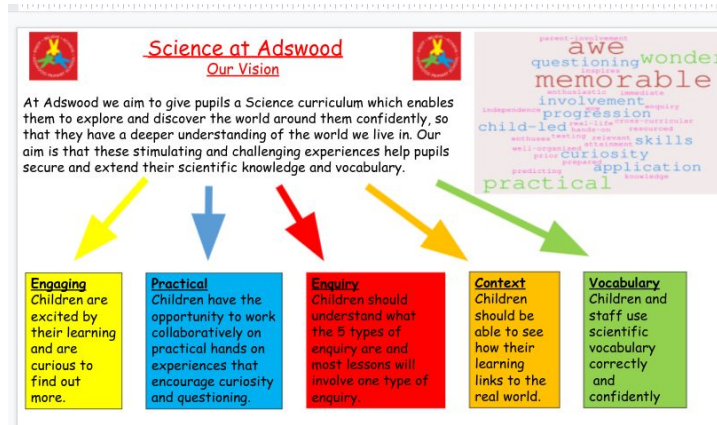
We went on the field and dug up flowers. We took pictures of them and labelled all the parts. Year 3

NEXT STEPS
Secure funding through grants (Learning through Nature, BSW, Tesco etc) to enhance outdoor learning environment of KS2 pupils.

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

Staff use our school vision when planning ensuring that enquiry types are included and context is considered.

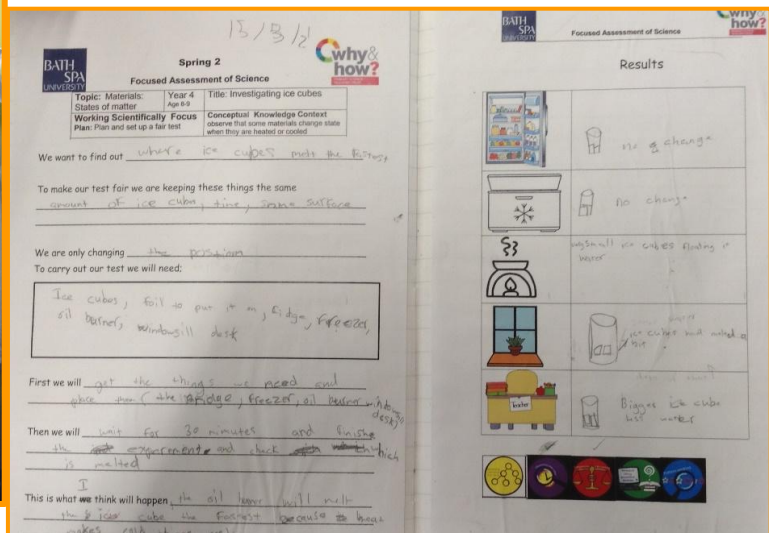
Year 3/4 children were challenged to make a delivery chute for a bath bomb using only paper and sticky tape. The longest functioning chute won!



When we tested our chutes it was so exciting. I didn't think ours would win

The 5 types of enquiry are displayed on the Science Station in all classrooms. Children refer to these when discussing the enquiry types they have used.

The children use the discussion to choose the enquiry type they have used and record it in their books



- How are waterfalls made?
- How does water create sinkholes?
- How fast is our seawater heating up?
- Why can't you dive really deep into the ocean?
- How fast does the water go in the fastest river?
- How many creatures live in the River Mersey?
- How many sea animals can also live in rivers?
- Can any animals live deep in the ocean?
- Why is the end of a river called a mouth?
- What is salt water?
- What else helps rivers flow, not just wind?
- How did the sea get so salty?
- How does water get into the ocean?

At the start of our learning journey each half term, the children are asked 'What do we want to know?' The children come up with questions that they would like to find out. This informs the teachers planning and is also used as a catalyst for independent research or extension activities.

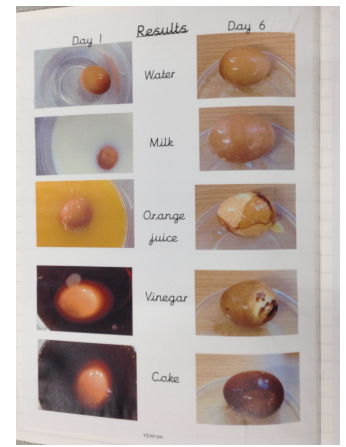
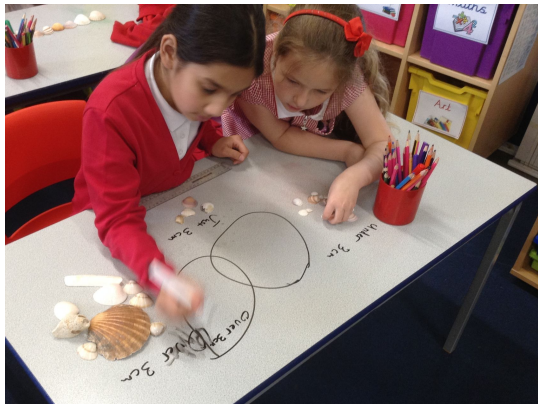
We get to research some of our questions. I have answered 4 so far! Year 5

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

Devising criteria to classify shells in in Year 3/4



Nursery children observing 'dancing raisins'



Why are they doing that? They've got bubbles on them now!

I think we should do it again in summer when the leaves have had more of a chance to grow.

Do trees with the widest trunks have the biggest leaves? Year 3



How different liquids affect our teeth.(eggshell experiment in Year 4

Year 3 children sharing their research on fossils.



Year 6 researched the parts of the heart before making a labelled model from play doh.

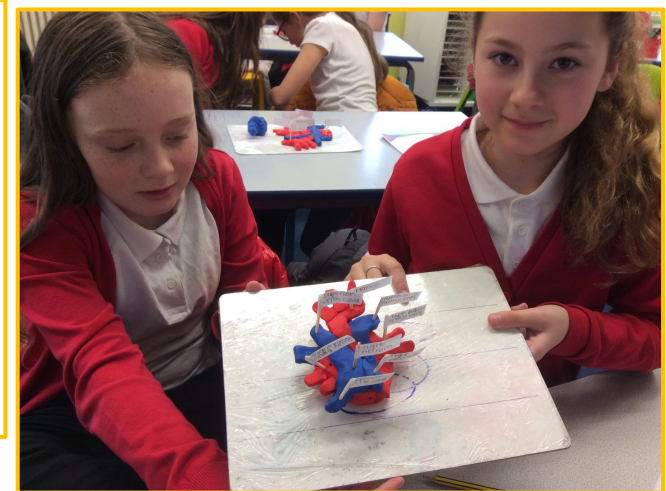


Name: *Naab* Date: *10/10/2020*

LC: I can make predictions and categorise the results of my experiment.

My prediction: *I think the vinegar will damage the shell the most*

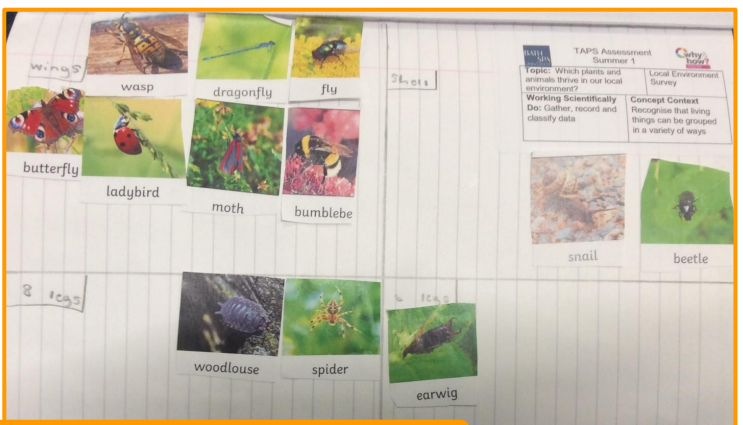
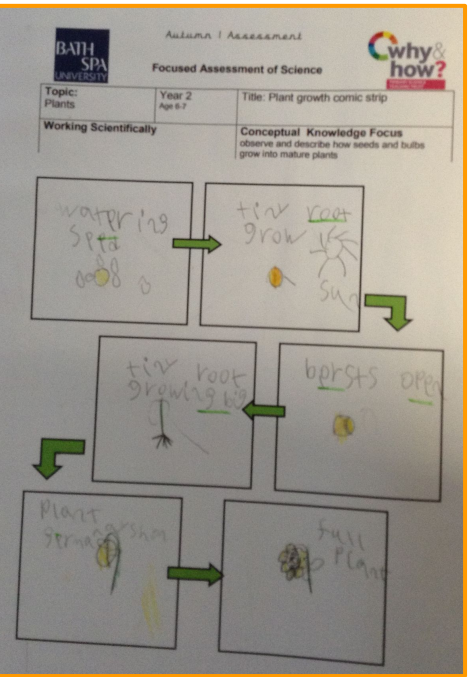
| | Orange juice | Coke | Water | Vinegar | Milk |
|-------|------------------------|--------------|-----------|---------------------|-----------|
| Day 1 | No change | No change | No change | No change | No change |
| Day 2 | Bubbly lumpy | No change | No change | Bubbly seen | No change |
| Day 3 | Whitey puffed lumps | Darker shell | No change | Soft shell peeling | No change |
| Day 4 | More shell on top | Darker shell | No change | Shell removed | No change |
| Day 5 | Less shell and cracked | Darker shell | No change | Soft and spongy | No change |
| Day 6 | Thin shell and string | Darker shell | No change | No shell and spongy | No change |
| Day 7 | | | | | |



L (B) - A range of strategies and processes for formative, summative and statutory assessment are used, which reflect a shared understanding of the purposes of assessment in science and current best practice.

Summative assessment

Staff ensure that all aspects of working scientifically are covered using the school's working scientifically document which is present in the front of all Science books for their relevant year group.



LKS2 Sticky Knowledge: Science Working Scientifically

- I know how to ask relevant questions and use different types of scientific enquiries to answer them.
- I know how to set up simple practical enquiries, comparative and fair tests.
- I know how to make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- I know how to gather, record, classify and present data in a variety of ways to help in answering questions.
- I know how to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.
- I know how to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- I know how to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- I know how to identifying differences, similarities or changes related to simple scientific ideas and processes.
- I know how to use straightforward scientific evidence to answer questions or to support their findings.

Formative assessment

Teacher assessment is used to identify misconceptions and clarify learning outcomes. This is usually done verbally during the lesson. In school we 'mark as you go' as much as possible giving immediate and directed feedback when it is needed.

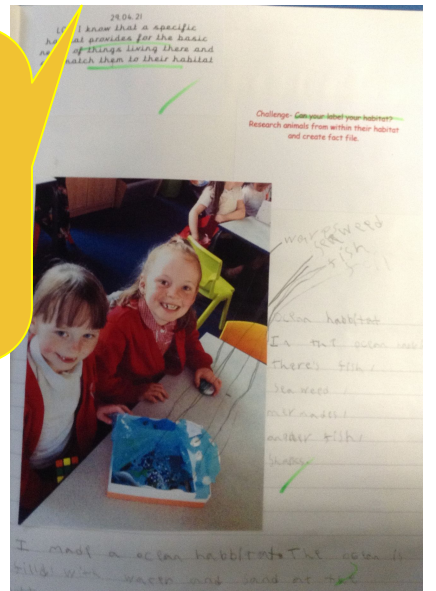
Independence is encouraged through self assessment and peer assessment allowing children to challenge and discuss concepts using their 'Why?' and 'How do you know?' challenge cards.

Staff assess working scientifically targets each half term using TAPS assessments (these can be taken directly from the website but are often adapted by staff to meet the needs of their class). These also include contextual targets.

I like doing the quizzes at the end of a lesson. It helps us remember what we have learned in a fun way. Year 6

Miss 'bridges back' to what we have learned before and 'bridges forward' to what we will be doing next. It helps me. Year 4

I know when it is right because Miss uses green highlighter. If I am not sure I ask. Year 2



LC - 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.

- Why is science important?**
- There is COVID now, and Science is helping to make a cure (Y4)
 - You can make new creations that might save the world (Y2)
 - Without science we would not have most of the things we use today (Y5)
 - It teaches us about what is around us like electricity (Y5)
 - It is important for the future, it helps us understand and answer questions (Y6)
 - You need science for hearing aids (Y3)
 - So we can see how things work (Nursery)


- Who do you know?**
Parents/extended family included;
- Construction worker
 - Mechanic
 - Gardener
 - Cleaner
 - Hairdresser
 - Theoretical physicist
 - Engineer
 - A range of NHS and healthcare workers were given including carer, nurse, pharmacist, paramedic and doctor

Initial staff survey showed that staff were unaware of what science capital was, their own and that of their pupils.

The subject leader led CPD where staff assessed their own level of Science capital. The gap task was to find the science capital of their class.

Why is Science important?

- We learn about interesting things
- When you grow up you know more things
- You need science for your job
- It helps you to do things



Who do you know?

- Hairdresser
- Builder
- Doctor
- Nurse
- Fitness instructor
- Chef
- Vet

What do you do?

- Cooking
- Baking
- Gardening
- Exercise
- Eating healthily

What do you do?
Responses included:
Plant seeds, nature walks, baking, recycle, I try out tricks and experiments off YouTube, 'My dad gives me a topic to research each week, this week I am doing gravitational force.'

Staff survey response - I didn't know what science capital was at all. I found the staff meeting really interesting. I found out a lot about the children in my class after the activity.

Children thought about how science was relevant in their lives and went home and asked their parents. Children were surprised at how science was intertwined in their everyday lives.

We don't have people in charge of the science station in our class. Everyone is a scientist in different ways. Year 6

NEXT STEPS
Collate information and compile a list of parents who we can involve in school (cross reference with curriculum map.

WO (A) - Curriculum planning links science to other areas of learning.

Our curriculum map has been devised to link between core subjects and humanities and VVE. We utilise resources and high quality, age appropriate stories and texts recommended by Focus Education that directly link to LCC Science drivers for each year group.

| VVE | Visitor | Horrible histories | cities and counties |
|-------------------|---|--|--|
| English | The Lorax-Dr Seuss | Journey to Jo'burg- Beverly Naidoo | Lady of Shalott |
| Science | Do all animals and plants start life as an egg? Animals including humans | Could you be the next CSI investigator? Properties and changes of materials | Can you feel the force? Forces |
| History/Geography | Why should the rainforest be important to us all? | Could you find your way to Jo'burg? | Were the Anglo-Saxons really smashing? Anglo-Saxons |
| VVE | Chester Zoo | Black history month | Tatton Park |




LKS2 Sticky Knowledge: Scientific Concepts

| Biology | Chemistry | Physics |
|--|--|--|
| I know how to identify and name parts of the human digestive system and know the functions of the organs involved. | I know the temperature at which materials change state. | I know about how to identify and name appliances that need electricity to function. |
| I know and can identify the different types and functions of human teeth | I know about and can explore how some materials can change state. | I know how to construct a series circuit and can identify and name it's components (including cells, wires, bulbs, switches and buzzers). |
| I know how to use and construct food chains to identify producers, predators and prey. | I know the part played by evaporation and condensation in the water cycle. | I know how to predict and test whether a lamp will light within a circuit and understand the function of a switch. |
| I know the function of different parts of flowering plants and trees. | I know how to group materials based on their state of matter (solid, liquid, gas). | I know how sound is made, associating some of them with vibrating and how sound travels from a source to our ears. |
| I know how to use classification keys to group, identify and name living things. | | I know the correlation between pitch and the object producing the sound and the correlation between the volume of the sound and the strength of the vibrations that produced it. |
| I know how changes to an environment could endanger living things. | | I know what happens to a sound as it travels away from it's source. |

As part of our focus on outdoor learning staff took the overview from their year group and included opportunities for outdoor learning. This will be added to the whole school overview,

| | | | | | |
|--|---|---|--|---|--|
| The Rabbit Problem - Emily Gravett | Lost and Found- Oliver Jeffers | Beegu - Alexis Deacon | The Bog Baby - Jeanne Willis | Dogger - Shirley Hughes | The Naughty Bus - Jan & Jerry Oak |
| Why does it get darker earlier in Autumn? Seasonal change | Why are humans not like penguins? Animals including humans | What does Beegu think of life on planet Earth? Everyday materials | British Science Week | Are all plants green? Plants | Why are there so many leaves on the tree? Seasons |
| Autumn Walk- signs of Autumn | Go bird watching- make bird feeders and observe and record number of birds that visit | Order of the planets/Earth orbiting the soon- role play in playground | Awaiting theme | Go on a wild/garden flower hunt around school with Ipad- take photos. | Tree Trail- go on a tree trail around school looking at different types of trees. Compare to trees in Autumn |
| Fieldwork | Black history month Visitor from Chester Zoo | Space landing in quad | Grandparents visit and bring examples of childhood toys Science week visitors | Lyme Park/Dunham Massey Trip linked to local heritage | Local walk-Adders Park |

To reinforce scientific knowledge and skills each child has an age appropriate 'sticky knowledge' checklist in the front of their science books. This is an at a glance document which covers conceptual knowledge and working scientifically targets for their age group or key stage.

WO (A) - Curriculum planning links science to other areas of learning.

ENGLISH

As a result of book scrutiny it was clear that there was not enough evidence of writing in science (this was particularly important as this is a key focus in our school). Staff were encouraged to include opportunities for extended writing in their planning. Further scrutiny showed more evidence of writing in science.

We learned about science in our literacy lessons because our story was about a girl who was taken from her natural habitat. Year 2

We have written autobiographies about Darwin and the guy with the apple - Isaac Newton. Year 6

MATHS

We went in the willow garden and measured trunks and leaves. It was like science maths. Year 3

We measured our pulse before and after exercise. We made a graph of our results. Year 5

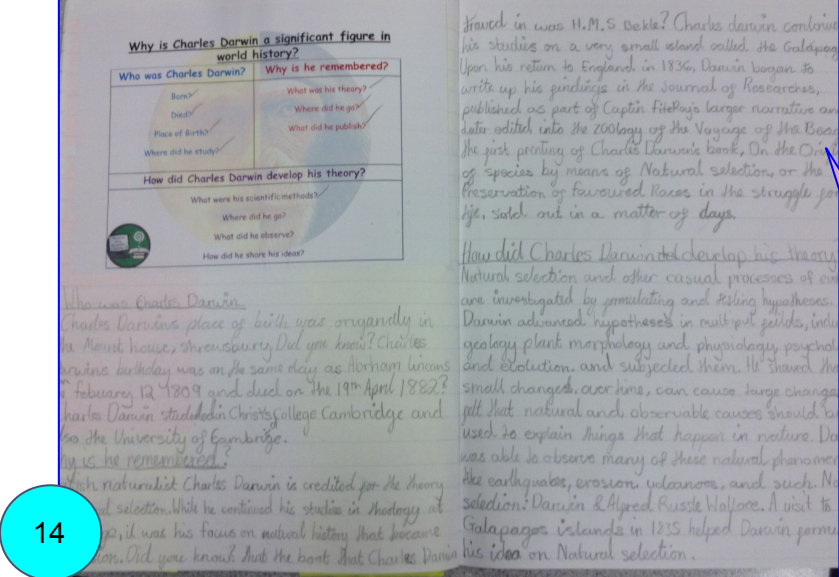
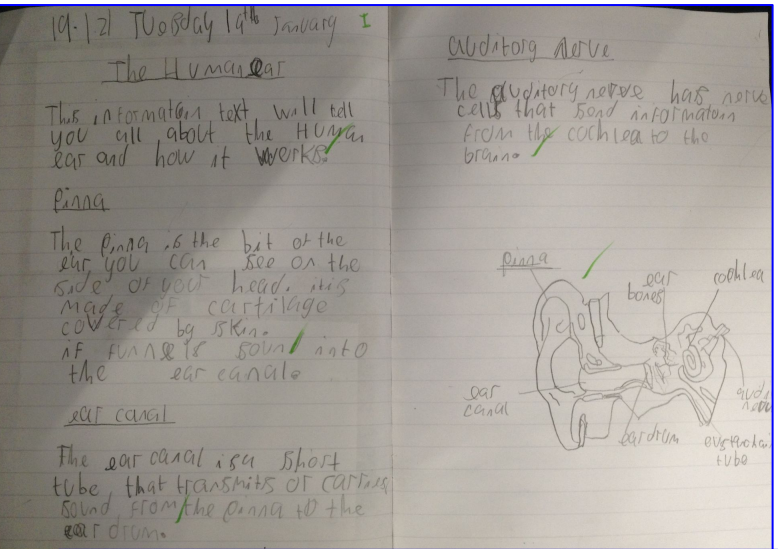
We used the book 'Equal Shmequal' for maths day. While sorting the animals into predators and prey, points were given to each animal, an extra challenge was to make the food chain with the most points. Year 4



I would like to do more pattern seeking - it's more like maths because we do measuring. Year 4



NEXT STEPS
Make stronger links with other core subjects so that literacy and numeracy strategies are embedded in science lessons.



WO B - There is participation in some external initiatives, topical science events and family learning.

Pre-COVID School engaged in many external initiative enhancing Science through VVE, these will be reinstated when restrictions allow.

Post-COVID because we were unable to engage with outside agencies we focussed on family learning during lockdown. School has been involved in National science competitions as well as registering for online initiatives.

L.C. I know how to find patterns between the pitch of a sound and features of the object that produced it.



<https://www.bbc.co.uk/bitesize/topics/zgffr82/articles/z3j3jty>

Make your own junk model musical instrument
<https://www.activityvillage.co.uk/musical-instruments>
 Use this website or google search different types of junk model instruments you can make. There are some examples on the next slide.

Challenge - Can you change the pitch of the sound it makes?
 Top tip tight surfaces vibrate more quickly and make higher pitch. Loose surfaces make slower vibrations to make a lower pitch.

The science lessons were really fun and easy to do. We could just use stuff that was around the house. Year 2 Parent

I think competitions are fun. I have entered every one this year. Year 5

Handwritten text from a child's drawing:
 YOU WERE AN ENGINEER - WHAT WOULD YOU DO?
 you can get any good and drink is you work.
 this spring takes away games and small.
 games - duster
 mover - mop
 Money Maker
 aka water and stobby water.
 Robot Roo it needs batteries and noise is down it clears gets good and water it gives you a free bit of how you equal maths it teaches you gives you free games and walk your pets this is £59£ it gives you a free had spray too.



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CHESTER ZOO


SCIENCE + INDUSTRY MUSEUM

UV light and sun safety

Although we need light to see, it is difficult to 'see' light! Light is made up of lots of different colours, which when mixed up together is known as white light (or the visible spectrum). When white light is split, we can see that it is made up of the colours of the rainbow:



Another type of light that the sun emits is called UV light. UV light can be very strong and harmful to us. It can cause sun burn, wrinkles and skin cancer, It can also damage the eyes.



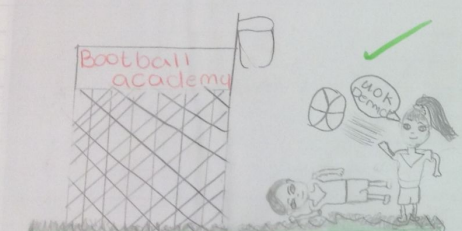
Challenges

1. Design a poster to inform people of what they can do to keep safe in the sun.
2. Design your own pair of cool shades.
3. Take a photo of yourself showing that you know how to keep safe in the sun.

Challenge #1 - A new Olympic sport 10 points

Using the space below create a brand-new Olympic sport. The heart is your theme, so make sure that this new sport gets your heart pumping!
 On your marks, get set, GO!

Insert your picture here:



Using the text box below, write a short description of your sport and explain how this new sport helps keep your heart healthy:

Football is an appropriate game for ages 6-100. It is soccer ball combined with basket ball. All you need is an open area to play.

Teacher challenge

Heart, blood and circulatory system workshop quiz

1. True or False, the blood cells travel to the lungs to receive oxygen. True False
2. True or False, the heart pumps red blood cells in 1st of blood. True False
3. True or False, red blood cells are made in the bone marrow and take about 120 days. True False
4. True or False, if you sneeze all the blood vessels in your body stop one long time they would match out to a length of 6,000 miles. True False
5. True or False, red blood cells are made in the bone marrow and take about 120 days. True False
6. True or False, the heart pumps blood to your heart by reducing inflammation. True False
7. True or False, the heart pumps blood to your body by forcing it in the blood. True False
8. True or False, the heart pumps blood to your body by forcing it in the blood. True False
9. True or False, the heart pumps blood to your body by forcing it in the blood. True False
10. True or False, the heart pumps blood to your body by forcing it in the blood. True False