



The Fell Document

(Finding Enrichment for Lessons and Learning)

A document for Primary Science teachers; **Helping you to see the wood for the trees**

In every climate, teachers are keen to enrich their units, and are confident in the 'need' to contribute to several of the dimensions of the Science Capital approach in their classrooms; they want the best for the children and their learning, but are often hindered and put off by the overwhelming abundance of ideas and resources that are available to them.

The Fell document has **handpicked** a mixture of local, national and virtual opportunities that can enrich the Science units being taught by each year group.

**“THEY CAN'T SEE
THE WOOD FOR
THE TREES”**

Enrichment isn't necessarily about adding to what we are already doing and planning. Enrichment could be more of a complement to our current lessons; a deepening of what is already going on and enhancing what is going on within the lesson. If we do choose to 'add' to our lessons, we should consider, how do we know if it's the right thing? Is it improving what we want it to improve? If we add things to make our lessons nicer, without thinking of the impact it makes, is there much point in adding it?

Before beginning to enrich your lessons using this document, take the time to consider what it is you are wanting to improve? What are you wanting to see change?

- How will you know if your enrichment activities have had an impact?
- What is the most appropriate opportunity to start adding?
- Does it match what you want to improve and is it manageable?

**“FEWER
THINGS IN
GREATER
DEPTH”**

This **is** a working document for the Science leads of Stoke on Trent; it aims to provide you with handpicked enrichment opportunities in and around our City. Even with current COVID restrictions in place, many of these resources are accessible through virtual opportunities or robust visit risk assessments.

It is **not** complete and it is not perfect; nor do we want it to be. It is not a scheme of work or set of plans but a tool to be used to **enrich and inspire your own planning**. This document is not an exhaustive directory and not everything available will be included. There are simply so many trees in that wood, that, to list them all, would not help to find a route through.

You may also notice that some areas of the document are more underdeveloped than others. Science across the City (A stoke based OA funded project) are currently working to fill these gaps, and the completion of this document has highlighted where some topics may be more difficult to enrich than others.

We at Science across the City welcome feedback from Subject Leaders and Teachers. We want to know how this document is useful, or how it could be even better. We would also love to receive further suggested additions to the document.

YEAR 1

	Animals including humans	Seasonal Change	Plants	Everyday Materials and uses
	Free farm visits (PP criteria involved) https://www.countrytrust.org.uk/services/farm-visits https://leafuk.org/farmertime/home FaceTime a farmer			Floating and sinking. Free canal workshops 'in' school https://canalrivertrust.org.uk/explorers/teachers/school-outreach
Book links	The Gruffalo Tadpole's promise – animal types Do you love bugs? Bird Count	One year with Kipper	The tiny seed Jasper's Beanstalk	Up and down – Oliver Jeffers Little Lumpty
Science Capital/careers/Scientist links				

YEAR 2

	Animals including humans	Living things and their Habitats	Plants	Everyday Materials and uses
		http://www.schoolscience.co.uk/bughunt National survey https://www.buglife.org.uk/get-involved/surveys/ https://bigbutterflycount.butterfly-conservation.org/ STEM AMBASSADOR Rivers/science and art https://www.stem.org.uk/platform/offer/020ea56f-1918-49c4-b228-ccf37e1e7dee https://leafuk.org/farmertime/home FaceTime a farmer		
Book links	Once there were Giants Tadpoles promise Monkey Puzzle book Hungry caterpillar	Lost and found – Oliver Jeffers Meercat Mail		The three little pigs Magic faraway tree – materials for the slipper slip. No-Bot
Science Capital/careers/Scientist links				

YEAR 3

Unit of work	Light	Plants	Rocks	Forces and Magnets	Animals including humans
Links	'Bear Cave' https://www.ogdentrust.com/resources/phizzi-practical-bear-cave		Free museum box from Hanley museum. Email museum.education@stoke.gov.uk Fossil investigation https://bpes.bp.com/resources/list?ageGroup[]=2&topic[]=6	'Forces & Flight' https://www.ogdentrust.com/assets/general/Phizzi Practical -Forces-and-flight.pdf 'Phizzi Magnetometer' https://www.ogdentrust.com/resources/phizzi-practical-magnetometer	
Book links	The firework maker's Daughter The Gruffalo's child (thinking about shadows) The game of shadows (good D&T link)	A seed is sleepy The night flower	The pebble in my pocket The dinosaur expert Gutsy girls go for Science; Palaeontologists Under your feet Mad about dinosaurs	The Iron man	Skulls!
Science Capital/careers/Scientist links	Light Research Cards https://www.ogdentrust.com/resources/research-cards-light				

YEAR 4

Unit of work	Sound	Living things and their habitats	States of matter	Electricity	Animals including humans
Links	<p>How sounds are made https://bpes.bp.com/jungle-book</p> <p>Make a Hydrophone https://www.ogdentrust.com/resources/phizzi-practical-make-a-hydrophone</p>	<p>Free visits to canal. Consider how environments change and protecting wildlife https://canalrivertrust.org.uk/explorers/educational-sites/etruria</p> <p>https://canalrivertrust.org.uk/explorers/teachers/school-outreach Free outreach in schools – habitats and canals.</p> <p>http://www.schoolscience.co.uk/bughunt National survey</p>		'Squishy Circuits' Scott Walker @Ogden trust Keele	Dentist or health professional visitor? Parent?
Book links	<p>Horrid Henry rocks The sound of silence The deaf musicians Moses goes to a concert What the ladybird heard</p>	<p>Kensuke's kingdom Beetle Boy The Vanishing Rainforest Manfish: A Story of Jacques Cousteau by Jennifer Berne Wildlife of the world – DK publishing (also KS1) Joan Proctor, dragon doctor</p>	Charlie and the chocolate factory		
Science Capital/careers/Scientist links	<p>'Sound Research Cards' https://www.ogdentrust.com/resources/research-cards-sound</p>	<p>POLAR EXPLORER https://www.stem.org.uk/polar-explorer/connect-your-school</p> <p>https://curiosity-box.net/champions/blowfish/ Heavy Metal marine Biologist – conservation</p> <p>Curiosity box real life Scientists https://curiosity-box.net/champions/andy-benson/</p> <p>Bumble Bee conservation trust</p>			

YEAR 5

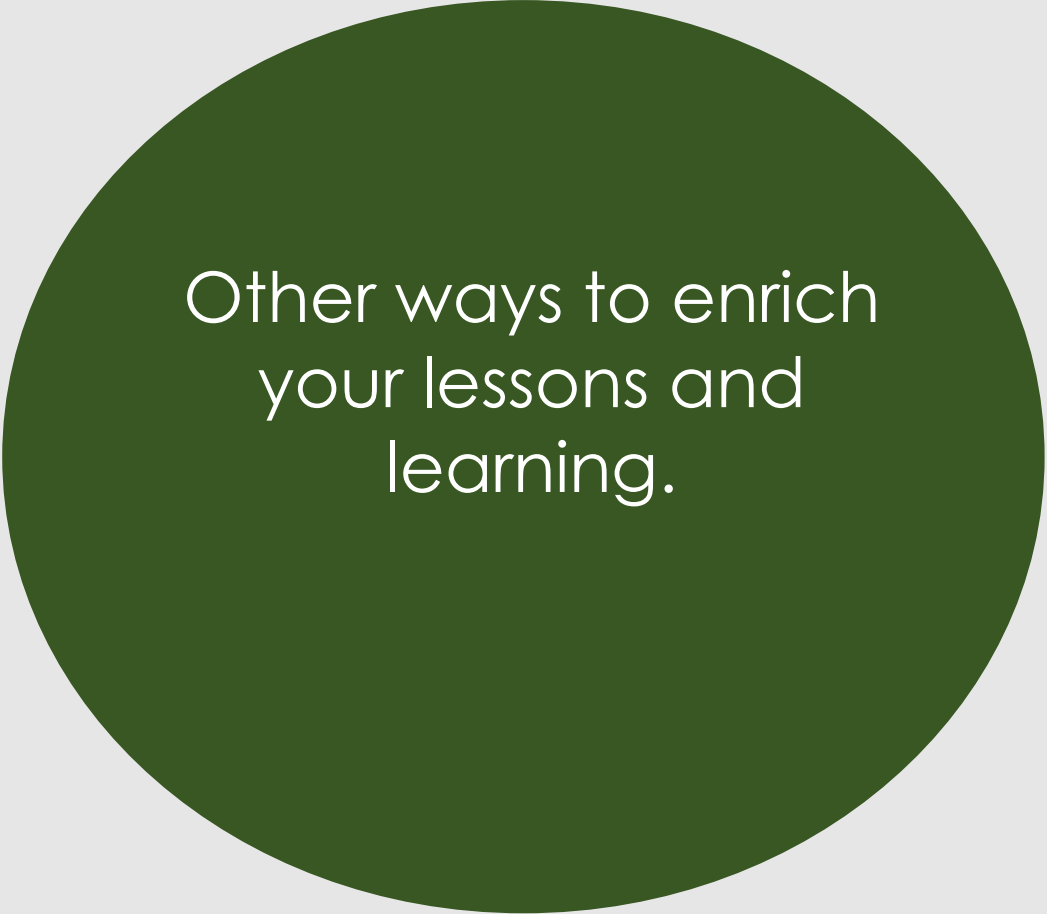
Unit of work	Earth and Space	Living things and their habitats	Forces	Properties and changes of materials	Animals including humans
Links	<p>Keele Observatory – free to visit https://www.keele.ac.uk/observatory/</p> <p>Stardome – (inflatable planetarium) 6 shows https://higherhorizons.co.uk/star-dome/</p> <p>Planetarium on your computer http://stellarium.org/</p> <p>Tech for space. Free classroom video and challenge – Design a space suit https://techwecan.org/tech-for-space/</p> <p>'Borrow the moon' https://stfc.ukri.org/public-engagement/activities-for-schools/borrow-the-moon/ accompanying activities https://www.stem.org.uk/resources/elibrary/resource/33350/stfc-lunar-rocks-and-meteorites-loan-scheme-primary-resources</p> <p>Jodrell Bank https://wonderdome.co.uk/staff-ordshire-mobile-planetarium/</p>	<p>http://www.schoolscience.co.uk/bughunt National survey</p> <p>https://www.buglife.org.uk/get-involved/surveys/</p> <p>https://bigbutterflycount.butterfly-conservation.org/</p> <p>https://encounteredu.com/live-lessons</p>	<p>'Physics Escape room' – Scott Walker shorturl.at/lqGOT</p> <p>'Pulleys levers and gears' Scott Walker shorturl.at/lqGOT</p> <p>Engineers building bridges https://pstt.org.uk/resources/curriculum-materials/Science-at-Work activity 6/video/challenge</p> <p>Floating gardens https://practicalaction.org/schools/</p> <p>Live lesson and investigation https://www.bbc.co.uk/teach/live-lessons/terrific-scientific-forces-live-lesson/z7nbkmn</p>	<p>'The Space Case' Scott Walker Ogden Trust & Keele Uni shorturl.at/lqGOT</p>	<p>School nurse visit?</p> <p>Mum and new baby visit</p>

	World space week https://pstt.org.uk/resources/curriculum-materials/Science-Fun-at-Home				
Book links	George's Secret to the universe Once upon a star The skies above my eyes Look up! The Darkest dark	The ugly five Beetle boy	The Tin Snail How Machines work/zoo break Old Bear – Jane Hissey – Hankie parachute?	Kensuke's kingdom Be a Maker Aliens love underpants	
Science Capital/careers /Scientist links	https://pstt.org.uk/resources/curriculum-materials/city-science-stars a project and resources which links Leicester Football stars and space.	POLAR EXPLORER https://www.stem.org.uk/polar-explorer/connect-your-school	Curiosity box https://curiosity-box.net/champions/sarahcosgriff/ Female physicist case study Engineers building bridges https://pstt.org.uk/resources/curriculum-materials/Science-at-Work-activity-6/video/challenge International Women's Day https://www.ogdentrust.com/assets/general/Phizzi-Focus-Intl-womens-day_for-website.pdf		

YEAR 6

Units	Light and sound	Living things and their habitats	Evolution and Inheritance	Electricity	Animals including humans
<p>Specific links</p>	<p>https://www.bbc.co.uk/teach/terrific-scientific/KS2/zv9af4j</p> <p>Target practise – can the hit targets with their torch light using mirrors etc.</p>	<p>STEM AMBASSADOR Microbiology and Microorganisms https://www.stem.org.uk/platform/offer/b1004b6e-559f-4d10-990a-ce7405ed6731</p> <p>Could I be a Marine Biologist? https://www.stem.org.uk/resources/elibrary/resource/26074/marine-biologist</p> <p>AXA free live videos https://encounteredu.com/live-lessons/axa-coral-live-2020 all November - and a new series in May</p>	<p>Author session for Molliebird https://forms.gle/xNKXk1vJPohgQnEe8 https://www.scienceacrossthecity.co.uk/2020/09/14/year-6-evolution/</p> <p>TTDS Peg/beak activity – log on needed – more info here https://tdts.org.uk/ funding possible for stoke schools</p> <p>Adaptation and evolution explored with an expert https://www.bbc.co.uk/teach/live-lessons/terrific-scientific-feet-live-lesson/z4pv47h</p>	<p>'Solar Scrapheap Challenge Scott Walker Ogden Trust & Keele Uni shorturl.at/lqGOT</p> <p>The Solar challenge https://practicalaction.org/schools/solar-challenge/?dm_i=6NPK_30ZW_1G3GPL,BXJ1,1 Great links with wider world context, PSHE and D&T Could purchase 'solar kit' https://www.tts-group.co.uk/practical-action-solar-kit/1017324.html £114 or just solar panels https://www.tts-group.co.uk/solar-cell-0.45v/1003706.html £7 each</p>	<p>Local fire stations offer 'Safe and sound event' (relates to drugs etc. and effects on the body)</p> <p>Heart rate experiment https://bpes.bp.com/animals-including-humans-topic-starter need to sign up for free.</p> <p>'Health Zone' – I'm a Scientist get me out of here https://imascientist.org.uk/autumn-2020/</p> <p>Heart Dissection (hands on science or do it yourself) https://hands-on-science.co.uk/workshop/circulation-and-heart-dissection/</p>
<p>Book links</p>	<p>How we got to now – Steve Johnson</p>	<p>The boy in the tower</p>	<p>Molliebird One smart Fish</p>	<p>Goodnight Mr Tom The Boy who harnessed the wind (young readers version)</p>	<p>Pig Boy Heart</p>

Science Capital/Scientist links					General Science Zone – I'm a Scientist get me out of here https://imascientist.org.uk/ autumn-2020/ 1. Florence Nightingale Videos, Q&A https://pstt.org.uk/resourc es/curriculum- materials/Science-at-Work 2. Same link – meet 2 doctors
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Other ways to enrich
your lessons and
learning.

Would you like to develop an afterschool club?

<https://pstt.org.uk/resources/curriculum-materials/childrens-university-stem-clubs> - choose one category of club and free downloads with easy to access resources are available to print out

<https://www.stem.org.uk/national-stem-club>

<https://www.stem.org.uk/stem-clubs/activity-sets>

Would you like families more involved?

<https://pstt.org.uk/resources/curriculum-materials/Science-Fun-at-Home>

<https://thatscienceladycom.files.wordpress.com/2020/03/home-discussion-questions.pdf>
questions to prompt Working Scientifically at home

<https://www.stem.org.uk/resources/community/resource/258613/early-yearsreception-science-homeworks>
simple home activities for the EYFS

<https://seerih-innovations.org/science4families/>
Activities for families at home

Would you like your school to be more involved in National events or initiatives?

Great Science Share
<https://www.greatscienceshare.org/>
(A national Science fair – virtual COVID dependant)

<https://pstt.org.uk/resources/curriculum-materials/Science-Fun-at-Home>
(space week)

<https://pstt.org.uk/resources/curriculum-materials/Science-Fun-at-Home>
(Roald Dahl Day)

Bumble bee conservation
<https://www.bumblebeeconservation.org/learning-zone/>

POLAR EXPLORER - <https://www.stem.org.uk/polar-explorer/connect-your-school> (resources still available, but the opportunity to work alongside the project has closed) Research is still relevant and ongoing.

National Young People's book prize - <https://royalsociety.org/grants-schemes-awards/book-prizes/young-peoples-book-prize/judging->

Would you like to strengthen the link between Science and Reading?

National Young People's book prize
<https://royalsociety.org/grants-schemes-awards/book-prizes/young-peoples-book-prize/judging-panels/> opens in spring

<https://pstt.org.uk/resources/curriculum-materials/science-reading-challenge>

<https://www.stem.org.uk/teaching-science-through-stories> - resources to match the units (already mapped above)

<https://www.weareteachers.com/stem-books-classroom-library/> - wide range of STEM books – varied purposes. Many famous scientist and Science Capital opportunities.

https://blackwells.co.uk/bookshop/product/9781138290969?gclid=Cj0KCQiA48j9BRC-ARIsAMQu3WTwcinW-DsMRkClolUOZFRKxj8ncRuI5DAPDwR7vp5EiiLCY5iL5hAaAj3dEALw_wcB a purchasable book which shares Science through stories.

<https://thatscienceladycom.files.wordpress.com/2020/11/diverse-representation-in-science-book-corner-suggestions-1.pdf> a comprehensive list of quality books that promote Science Capital in your classroom; inspiring books.



Would you like your school to try different teaching strategies?

Explorify –

<https://explorify.wellcome.ac.uk/en/activities>

Do you want to develop your outdoor learning?

<https://www.springlearning.co.uk/pupil-workshops/>

<https://pstt.org.uk/resources/resources-available-through-tts/lets-go-stem-trails> paid for publication but some free resources

<https://www.ltl.org.uk/primary-schools-outdoors/> CPD opportunities and project possibilities

Would you like to include real life Scientists in your lessons?

Connect online with Scientists; general or topic based; <https://imascientist.org.uk/how-it-works-teachers/>

<https://pstt.org.uk/resources/curriculum-materials/Science-at-Work>

Stem Ambassadors <https://www.stem.org.uk/stem-ambassadors>

<https://www.skypeascientist.com/>

Curiosity Box champions <https://curiosity-box.net/champions/>

Primary Futures - <https://primaryfutures.org/schools/>

Books about specific Science heroes <https://thatscienceladycom.files.wordpress.com/2020/11/diverse-representation-in-science-book-corner-suggestions-1.pdf>

Would you like to develop your Remote learning?

BBC live lessons created for home learning

ASE - <https://www.ase.org.uk/ase-coronavirus-hub-primary-remote-learning-resources#year4>

PSTT - <https://pstt.org.uk/resources/curriculum-materials/Science-Fun-at-Home> -

STEM at home activities <https://nustem.uk/>

OGDEN Trust <https://www.ogdentrust.com/coronavirus-home-learning-resources-hub> - links to individual activity providers.

<https://thatscienceladycom.files.wordpress.com/2020/03/home-discussion-questions.pdf> - questions to prompt Working Scientifically at home

<https://www.stem.org.uk/resources/community/resource/258613/early-yearsreception-science-homeworks> simple home activities for the EYFS

Would your staff benefit from some CPD?

<https://www.reachoutcpd.com/courses/> online courses for all units and Working scientifically; certificate given afterwards

<https://tdts.org.uk/> developing creative and challenging science lessons

<https://www.scienceacrossthecity.co.uk/events/> CPD for Stoke teachers – national and local links

<https://www.stem.org.uk/stem-clubs>

<https://www.futurelearn.com/partners/stem-learning> a number of free Primary Science courses



Currently miscellaneous but fabulous

<https://practicalaction.org/schools/>

BP - Quality resources for the school curriculum <https://bpes.bp.com/living-things-and-their-habitats-topic-starter>

STEM enrichment <https://www.stem.org.uk/enrichment>

<https://www.stem.org.uk/primary-science>

<https://thatscienceladycom.files.wordpress.com/2019/09/stem-careers-by-topic-1.pdf> careers list matching to UNITS

<https://encounteredu.com/live-lessons> - a set of live lessons once/twice per year based around Living things and habitats