

How can I help develop my child's understanding of science at home?

- Reading – non-fiction / fact-based books about animals.
- Walk in the park or garden – practice identifying the types of tree (identify using Leaf Snap), plants and animals observed.
- Cook with them! Look at changes – some are reversible (melted / solidification of chocolate); some are irreversible (fried egg).
- Helping with DIY – Look at materials and their uses, looking at properties such as rough, smooth, shiny, dull, malleable, etc. Distinguish between object, material and their properties (Object = Pen; Material = plastic; Properties = transparent / hard / smooth etc.).
- Look at inventions around the home and how they work.
- Visit STEM-themed museums (see list).
- Pets – Research their life-cycles, diets, natural habitats etc.
- Check the news for science and environmental stories.
- Link science to real life. Talk about how things were in the past and how scientific advances have brought changes.
- If they have access to Technic Lego / Mechano – Investigate gears, cams and levers.
- Watch TV programmes including Steve Backshall's 'Deadly 60' and 'Expedition'.
- Watch BBC documentary programmes such as: Seven Worlds, One Planet; The Hunt; Planet Earth I, II & III; Dynasties; Africa; Blue Planet I & II etc., many of which can be accessed through BBC iPlayer (www.bbc.co.uk/iplayer)



Websites and Apps:

The School Run: <http://www.theschoolrun.com/what-your-child-learns-key-stage-1-science>

Science Kids: <http://www.sciencekids.co.nz/experiments.html>

BBC Bitesize: <http://www.bbc.co.uk/bitesize/ks2/science/>

Crickweb: <http://www.crickweb.co.uk/ks2science.html>

Met Office: <http://www.metoffice.gov.uk/learning/weather-for-kids/>

Science Museum: <https://www.sciencemuseum.org.uk/learning>

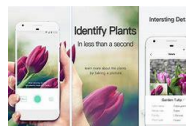
Making Slime: <http://www.csiro.au/en/Education/DIY-science/Chemistry/Cornflour-slime>

Bored Teachers – 40 Science Websites for Teachers and Parents (Use Elementary Sites):

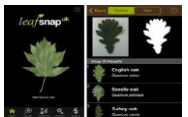
<https://www.boredteachers.com/resources/40-science-websites-to-keep-kids-engaged-and-entertained-at-home>



Birds of Britain Pro:
Lite Edition



PictureThis – Plant Identifier



Leaf Snap

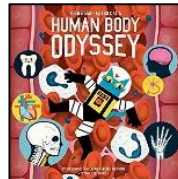
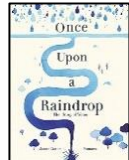
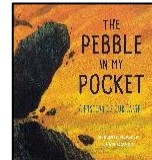
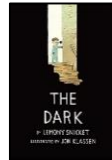
Some books to read...

Y3: A Pebble in My Pocket (Meredith Hooper)

Y3: The Dark (Lemony Snicket)

Y4: Once Upon a Raindrop: The Story of Water (James Carter)

Y4: Human Body Odyssey (Werner Holzwarth)



A Parents' Guide to Lower Key Stage 2 (Y3&4)



SCIENCE

What does my child need to know by the end of Y3 and Y4?



Science is split into two parts:

Working Scientifically (The processes of Science)

Children by the end of Year 4 need to be able to:

- 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 Scientific Knowledge (Facts and information)

- **Biology - Animals including humans:** Nutrition linked to what we eat; Skeletons and muscles.
- **Biology - Plants:** Functions of different parts of plants; What different plants need to flourish; Journey of water through a plant; Life-cycle of a plant.
- **Physics - Light:** Sources, including the Sun; Protecting eyes from the Sun; Shadows; Reflection / mirrors.
- **Physics - Forces and magnets:** How magnets attract / repel some materials; Magnetic poles; Friction.
- **Chemistry - Rocks:** How rocks are formed; Different kinds of rocks; Fossils; Soil.

Year 4 Scientific Knowledge (Facts and information)

- **Biology - Animals including humans:** Digestive system; Teeth; Food chains; Predator and prey.
- **Biology - Living things and their habitats:** Identify and name a variety of living things (plants and animals) in the local and wider environment and group them; Recognise that environments can change and pose dangers.
- **Chemistry - States of matter:** Solids, liquids and gases; Heating and cooling (no baking etc.); Evaporation and condensation.
- **Physics - Electricity:** Identify common appliances; Construct simple circuits including switches; Common conductors and insulators; Alternative sources of energy.
- **Physics - Sound:** Sources; Vibration; Loud and faint; Pitch; Volume; Sound travelling.

Science capital – what is it?

Science capital is how much a person is exposed to the knowledge and understanding of STEM (Science-Technology-Engineering-Mathematics), both academically and in the wider world around us. It helps children reason scientifically, linking ideas and providing them with a broader, increasingly balanced view of Science's key role in the wider world. Below are some STEM-related attractions which can help increase your child's Science capital (and they're fun too!):

Free Admission:

- Bolton Museum (Aquarium) - Bolton
- Museum of Science and Industry – Manchester
- National Science and Media Museum – Bradford
- National Railway Museum - York
- Brockholes Nature Reserve – Preston (Off M6)
- Local country parks (Seven Acres, Doffcocker Lodge, Moses Gate, Jumbles, Cutacre, Borsdane Woods)
- Bolton's reservoirs, including: Anglezarke, Wayoh, Rivington etc.
- The World Museum - Liverpool

Entrance Fee Charged:

- Space Port - Ellesmere Port
- Jodrell Bank - Cheshire
- Eureka - Halifax
- Magna - Rotherham
- Sealife Centre - Blackpool
- Sealife Centre - Manchester
- The Deep - Kingston-Upon-Hull
- Lakes Aquarium (Southern tip of Lake Windermere)
- Blackpool Zoo - Blackpool
- Chester Zoo - Chester
- Knowsley Safari Park - Knowsley
- South Lakes Wildlife Park – Dalton-in-Furness
- Smithills Farm – Bolton
- Bowland Wild Boar Park – Lancashire
- Martin Mere Wetland Centre – Burscough, Lancashire
- Tropical World - Leeds

The Lancashire Wildlife Trust:

- Events at The Hive at Moss Bank Park:
- www.lancswt.org.uk/hive-moss-bank-park
- Lancashire Wildlife Trust at Seven Acres (Bury Road)

Red Lane Facebook:

<https://m.facebook.com/redlaneprimaryschool/>



School Website:

www.red-lane.bolton.sch.uk

<https://www.red-lane.bolton.sch.uk/parents/virtual-school/> (Virtual School)

