

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 and Middle School 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

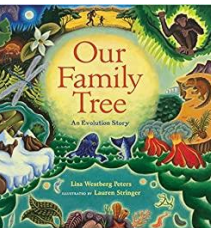
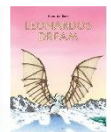
Some books to read...

Y5: George's Secret Key to the Universe (Lucy and Stephen Hawking with Christopher Galfard)

Y5: Leonardo's Dream (Hans de Beer)

Y6: Our Family Tree (Lisa Westberg Peters)

Y6: A Heart Pumping Adventure (Heather Manley)



A Parents' Guide to Upper Key Stage 2 (Y5&6)



SCIENCE

What does my child need to know by the end of Y5 and Y6?



Science is split into two parts:

Working Scientifically (The processes of Science)

Children by the end of Year 6 (KS2) need to be able to:

- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Using test results to make predictions to set up further comparative and fair tests.
- Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.
- Identifying scientific evidence that has been used to support or refute ideas or arguments.

Year 5 Scientific Knowledge (Facts and information)

- **Biology - Living things and their habitats:** Life cycles of plants and animals; Birth, growth, development and reproduction.
- **Biology - Animals including humans:** Changes as humans develop from birth to old age.
- **Chemistry - Properties and changes of materials:** Dissolving, evaporating, filtering, reversible and irreversible changes.
- **Physics - Earth and space:** Earth relative to the Sun; Moon relative to the Earth; Relationship between Sun, Earth and Moon; Earth's rotation; Day and night.
- **Physics - Forces:** Gravity, air resistance, water resistance, friction, simple machines (gears, pulleys, levers and springs).

Year 6 Scientific Knowledge (Facts and information)

- **Biology - Living things and their habitats:** Classification of living things; Vertebrates and invertebrates; Classifying reptiles, amphibians, mammals, insects, etc.
- **Biology - Animals including humans:** Circulatory system; Heart, blood vessels; Diet, exercise and drugs; Transport of nutrients through the body.
- **Biology - Evolution and inheritance:** Fossils tell us about the past; Off spring; Changes to the human skeleton over time; Charles Darwin and the Theory of Evolution.
- **Physics - Light:** How light travels; The eye; Shadows.
- **Physics - Electricity:** Electrical circuits (series); Designing traffic lights.

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)

