

Science at home... how can I help?



- Reading, in particular non-fiction / fact based books (see 'Recommended Books').
- Take a walk in the park or garden – practice identifying the types of tree, plants and animals observed (download a plant identification app to help).
- 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.
- Link science to real life. How have scientific advances have brought change?
- If they have access to Technic Lego / Mechano – Investigate gears, cams and levers.
- Visit Science and STEM-themed museums (see 'Science Capital' section)
- Pets – Research their life-cycles, diets, natural habitats, features etc.
- Check the news for the latest science and environmental stories.
- YouTube – search 'Kids Science' for great experiments that can be done at home.
- Watch BBC documentary programmes through BBC iPlayer, including: Planet Earth I-III, Blue Planet I-II, Frozen Planet, Dynasties I-II. Watch Steve Backshall's 'Deadly 60' and 'Expedition'



Tag your Science experiences: **@stpetersfarn**

Websites and Apps:



Circulatory System 3D



LeafSnap – Plant Identification



LightMeter (LUX)



Birda – Bird ID



Dr Jo Science Solutions



Science Kids



The School Run - Science



BBC Bitesize KS2 Science

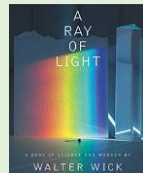
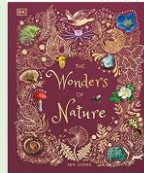
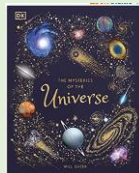


Bored Teachers: 40 Links



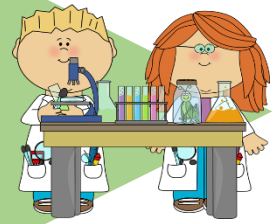
The Science Museum

Recommended Books:



- **Mysteries of the Universe, Will Gater**
- **Wilderness: Earth's Amazing Habitats, Mia Cassany**
- **Charles Darwin's On the Origin of Species, Sabina Radeva**
- **The Wonders of Nature, Ben Hoare**
- **A Ray of Light, Walter Wick**

SCIENCE



A Parents' Guide to Upper Key Stage 2



“Learn, Sparkle & Shine...”

What does my child need to know?



The National Curriculum for Science in Upper Key Stage 2 (Years 5 and 6)

Science is split into two parts: working scientifically and science knowledge.

Working Scientifically (Disciplinary knowledge - the processes of scientific investigation)

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

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Use test results to make predictions to set up further comparative and fair tests.
- Report and present 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.
- Identify scientific evidence that has been used to support or refute ideas or arguments.

Year 5 Scientific Knowledge (Substantive knowledge – science facts and information)

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

Year 6 Scientific Knowledge (Substantive knowledge – science facts and information)

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

What is Science Capital?



A person's 'science capital' is how much they are exposed to the knowledge and understanding of STEM subjects (Science, Technology, Engineering and Mathematics), both through education and in the wider world around them.

Science Capital is important, as it helps create linked scientific understanding, thus providing them with a broader, increasingly balanced view of the Science's key role in the wider world and importantly, why it is important to their own lives.

Below are some science and STEM related attractions which can help increase your child's Science Capital (and they're fun too!):

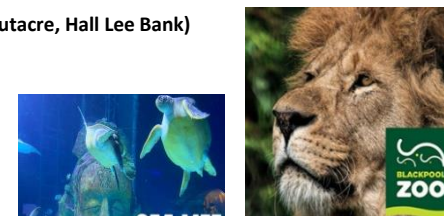
Free admission:

- Bolton Museum (Aquarium)** (Bolton [BL1 1SE](#))
- Manchester Museum** (Manchester [M13 9PL](#))
- Museum of Science and Industry** (Manchester [M3 4JP](#))
- National Science and Media Museum** (Bradford [BD1 1NQ](#))
- National Railway Museum** (York [YO26 4XJ](#))
- Brockholes Nature Reserve** (Preston [PR5 0AG](#))
- Bolton's various country parks** ([Seven Acres](#), [Moses Gate](#), [Jumbles](#), [Cutacre](#), [Hall Lee Bank](#))
- Local reservoirs:** [Anglezarke](#), [Wayoh](#), [Entwistle](#), [Lower Rivington](#) etc.



Charged entrance fee:

- Catalyst Science Discovery Centre and Museum** (Widnes [WA8 0DF](#))
- Imagine That!** (Liverpool [L13 1EH](#))
- Xplore! Science Discovery Centre** (Wrexham [LL13 8AE](#))
- Jodrell Bank Centre For Engagement** (Cheshire [SK11 9DW](#))
- Eureka! The National Children's Museum** (Halifax [HX1 2NE](#))
- Eureka! Science and Discovery** (Wallasey [CH44 6NR](#))
- Magna Science Adventure Centre** (Rotherham [S60 1FD](#))
- Sealife Centre** (Blackpool [FY1 5AA](#))
- Sealife Centre** (Manchester [M17 8AS](#))
- The Deep** (Kingston-Upon-Hull [HU1 4DP](#))
- Lakes Aquarium** (Ulverston [LA12 8AS](#))
- Blackpool Zoo** (Blackpool [FY3 8PP](#))
- Chester Zoo** (Chester [CH2 1LE](#))
- Knowsley Safari Park** (Knowsley [L34 4AN](#))
- South Lakes Safari Zoo** (Dalton-in-Furness [LA12 0LU](#))
- Smithills Farm** (Bolton [BL1 7NS](#))
- Bowland Wild Boar Park** (Lancashire [PR3 2HB](#))
- Martin Mere Wetland Centre** (Burscough [L40 0TA](#))
- Tropical World** (Leeds [LS8 2ER](#))



Science Capital – An Introduction (Video Clip)