

An Adventure in Learning STEM Team Duxford 2012

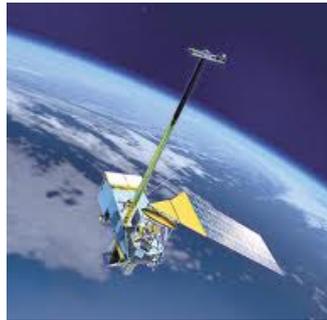
Wednesday 13th June - Imperial War Museum Duxford



Butterflies: The science of their colours.



Acids and Alkalis: Chemistry in the kitchen.



Satellites: IT and Communication.



Aerodynamics and Drag: The streamlined car.



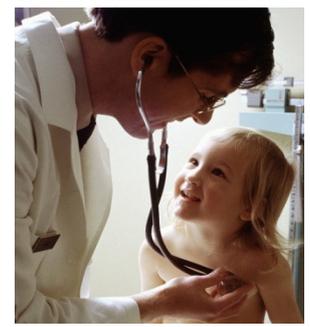
Light: CD's, fibre optics and the world wide web.



Facing Drought: Engineering Water.



3D Solids: Symmetry and tessellations around us.



Meet the Medics: Keeping Healthy.



Strong structures in Engineering: Design.



Incredible Edible Cell: Beginning biology.



Robotics: Systems and Control.



Model Electric Car: Sustainable futures.

STEM Team Duxford is an enrichment day of Science, Technology, Engineering and Maths.

Booking for the above activities is now open, see over for details.

Early Bird Booking before 4th May: £5 per pupil and the opportunity to choose four activities. Price after 4th May: £7 per pupil.

Book by contacting Deborah Mason on 01223 499341.

Email : dmason@iwm.org.uk



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About the Day

STEM TEAM Duxford is an enrichment day of Science, Technology, Engineering and Maths presented as a hands-on STEM Fair. It takes place at Imperial War Museum Duxford within Air Space among aircraft which tell the story of British and Commonwealth aviation. Hosted in this impressive museum of Engineering, the event is a fantastic opportunity for pupils to learn through engagement with today's Scientists, Technologists, Engineers and Mathematicians, who lead the STEM activities. The activities are provided by STEM Team East. Each pupil will do two booked activities, each lasting one hour. See below the STEM topics for which there is a 10min talk and hands-on activity. As well as booked activities we will have drop in sessions and an engaging science talk. The activities are suited to KS2 and KS3 pupils. Further details available in the handbook and on our website

If you book early we aim to reserve 4 activity choices, as available, from the range below

- **Butterflies – The Science of Butterfly Colours and Environmental Science.** A fascinating talk on how butterflies have different coloured wings, their life cycle and importance to plants and the environment.
- **Acids and Alkalis - Chemistry in the Kitchen.** Pupils learn about pH scale and identify acids and alkalis from among a selection of food ingredients.
- **Light – Investigation.** Using light boxes, mirrors and lenses to discover the properties of light and how they are used to understand reading CD's and transmitting information at high speed on the world wide web.
- **Robotics - Systems and Control.** Using hexapod robot models, pupils get to understand 'truth tables' and program an integrated circuit board, PIC, to take the robots along a simple maze.
- **Satellites – Circular motion and projectiles.** Teach us all we need to know to understand the science of the solar system and how we put satellites into orbits. Find how we rely on information from satellites everyday.
- **Facing Drought – Engineering Water.** Join engineers from Mott Mac Donald to learn about the impact of this year's shortage of rain on East Anglia. What do engineers need to do to provide essential water services.
- **3D solids - Symmetry and Tessellations.** Showing images from nature and different cultures we explore symmetry, tessellations and 2D to 3D shapes to make a isosahedron or cubohemioctahedron.
- **K'Nex Engineering Challenge – Strong Structures in Engineering.** Pupils will be given an engineering challenge and are asked to work as a team of engineers to build a working model to a set of specification
- **Cambridge University Engineering Department Crane Build** - Led by a talk from the Engineering Dept, pupils discover the engineering involved in designing strong structures for a paper tube crane jib.
- **The Incredible Edible Cell- Beginning Biology.** This activity introduces pupils to cells, the building blocks of life. They learn about the differences between plant and animal cells to make an edible model cell
- **Aerodynamics in Vehicle Design using a Wind Tunnel** - learn about the friction force drag and how it affects vehicle movement and fuel efficiency by making a model vehicle to test in the wind tunnel.
- **Mini Electric Car - Carbon Footprint and Sustainability**-Electric and Hybrid cars are now with us . Pupils will make their own model electric car with motor and simple circuit and learn about design engineering
- **Plastic Bottle Raft-Plastics Pollution and the Environment**- The problem for wildlife eco systems due to plastic waste in the oceans is highlighted from our use of the ubiquitous plastic bottle-learn about the challenges to science and engineering to resolve the problem.
- **Meet the Medics- Keeping Healthy.** Keeping healthy is important and so it helps to understand how the human body tells us our state of health. Our Medical scientists will show you how to make and record clinical observations.

STEM Team East:

Further details on activities from STEM Team East by phone, email or website

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Website – www.stemteameast.org.uk