



For Schools

K E E L E
UNIVERSITY



Chemistry

Fireworks & Explosions

This exciting 2 hour workshop offers students the chance to experiment with colourful and explosive chemical reactions in a fun and controlled environment. The science of exothermic reactions is introduced in a practical based session.

Spectroscopy

Students can take advantage of the excellent analytical equipment available in the Lennard-Jones Laboratories. Popular sessions include the analysis of aspirin using infrared & nuclear magnetic resonance spectroscopy. (2 hours long, suitable for AS or A2 students)

TLC Workshop

This 2 hour workshop introduces students to the principles of chromatography for analysis and separating components using TLC. The students are welcome to bring their own samples for analysis.

Contact: Nicola Jervis
n.jervis@chem.keele.ac.uk

Earth Sciences

Earthquakes Don't Kill People

Comparing the consequences of the 2010 Haiti and Chile earthquakes, this session examines how buildings can be designed to withstand earthquakes.

Tsunami!

Investigating the causes of tsunamis and their forecasting. Special reference is made to the Indonesian Boxing Day 2004 and Chile 2010 earthquakes and tsunamis

Glaciers and Ice Ages

This session looks at the effects of glaciers and ice ages on the British landscape and can include hands-on activities.

More Information:

Suitable for students 14-16 years/KS4 with a science / geography background.
Contact: keelelink@keele.ac.uk

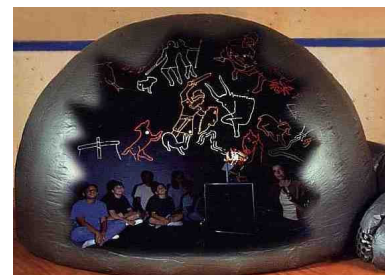
Keele Earth and Space Observatory



The Keele Observatory has been extensively refurbished, with the support of the Wolfson Foundation and Keele Alumni. The new facility, now known as the "Keele Earth and Space Observatory", includes facilities for schools and outreach activities, and offers workshops to school students on various aspects of astronomy, physics and the earth sciences.

Contact: keelelink@keele.ac.uk

Following its refurbishment, the Observatory has resumed its public open sessions, on Tuesday evenings and Saturday afternoons (except from mid-May to mid-July). All are welcome to these sessions without making any prior arrangement. **Contact:** obsvisits@phys.keele.ac.uk



The StarDome is available to schools in conjunction with Keele's Widening Participation and Lifelong Learning Division. It can accommodate up to 20KS3/KS4 students at one time; the minimum length of a show is 20 minutes, to allow for dark adaption. It is available for a half or whole day, or for after-school events, and comes with a trained and knowledgeable astrophysicist from the world-renowned Keele University Astrophysics group. There are space and power requirements. **Contact:** stardome@astro.keele.ac.uk

Physics @ Keele offers a variety of in-school workshops using our solar telescope and the StarDome. Also available are workshops on electricity and magnetism, optics and other topics suitable for KS 1 & 2

Contact: keelelink@keele.ac.uk



is committed to promoting increased awareness and understanding of the issues surrounding climate change & environmental sustainability. Schools have the the opportunity to take part in a range of workshops tailored to support the National Curriculum at all levels from KS1 to Sixth Form.

Workshops are tailored to meet the specific requirements of the schools.

Contact: Nicola Ruston

Psychology @ Keele

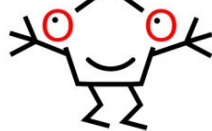
welcomes teachers of psychology to get in touch with the School of Psychology. We offer tailor-made visits to the School for enrichment of the A/S curriculum.

Contact: Dr. John Hegarty
j.r.hegarty@psy.keele.ac.uk

Maths @ Keele

offers tailored visits to Keele campus for KS4 and sixth form students. Activities can include lectures on specific topics, careers talks and campus tours.

Contact: Dr. David Bedford



The **makeitmolecular** team are in the middle of a 3 year EPSRC funded grant called "Molecules Out and About" – with the development of a "Molecules Network" for schools as well as events and exhibitions nationwide. **makeitmolecular** is a fun, hands-on activity based on giving people the opportunity to make a model of a molecule and having their picture taken with it.



The Molecules Network

This is a network of schools equipped to run their own hands-on molecule building activities. Schools in the Molecules Network get a bumper kit of molecular models, instruction cards and guidance in running **makeitmolecular** events. As well as engaging with their target audiences schools also reap the benefits of seeing their own pupils enthused by active involvement in science outreach. Science week events, open days and visits to feeder schools are all popular uses of the kit. There are still some places left on the Molecules Network – if you are interested in hosting a kit and running make-it-molecular outreach activities from your school, do get in touch with us.

Contact: Tess Phillips, t.r.phillips@epsam.keele.ac.uk or visit the **makeitmolecular** website: www.keele.ac.uk/makeitmolecular

Molecules Partnership with KeeleLink

The KeeleLink science mentors have a Molecules Network style kit and can visit schools to deliver individual make-it-molecular events as well as running activities for schools here at Keele. The kit was recently used at Chesterton primary school and feedback from the pupils included: "Excellent", "I really enjoyed it!", "Awesome!".

Contact: keelelink@keele.ac.uk or visit the KeeleLink website: www.keele.ac.uk/keelelink

Finger-Printing

Learn the history and fundamental principles behind fingerprinting techniques. Students will have the chance to take their own fingerprints and the opportunity to enhance latent fingerprints using powdering techniques.

Document Examination

A presentation on the topic will be followed by a practical session on the examination of security features in documents. Using professional document examination equipment, students examine forensic examples such as forged cheques or threatening notes.

Contact: Amy Cowles a.v.cowles@phys.keele.ac.uk or Victoria Cartwright v.cartwright@chem.keele.ac.uk Tel: 01782 737180

Forensic Science

Have you ever wondered what ecstasy actually is or the structure of the active substance in cannabis? In this session you will choose your own molecule of crime to make then have a picture taken with this molecule to take away as a souvenir.

Forensic Microscopy

A practical session which introduces the principles of microscopy. A series of forensic examples are examined to compare and identify matches. Students also learn how to measure the size of observed features.

Molecules of Crime

Electron Microscopy



We allow school visits by special arrangement. If you are interested in showing your pupils an Electron Microscope Unit in action, please arrange a visit with our technician, Karen Walker (k.walker@cns.keele.ac.uk). We can show you working SEM and TEM and also the preparation techniques involved. This is particularly useful to AS and A2 level students.

View your own sample! If you want to bring a sample to view and take pictures of it away with you, please first consult Karen and she will explain what types of sample to bring and how to prepare them.

Microscopy

lecture/demonstrations. If you want a lecture on the role of microscopes in research and/or how they work as part of your school visit to us, please contact Dr Dave Furness (d.n.furness@cns.keele.ac.uk). A presentation on microscopy could also be made **at your school!**

A visit to see the electron microscopes can also be combined with a visit within the School of Life Sciences where you would have the opportunity to use the spirometry equipment or record the electrical activity of the heart and the effect of exercise.

For more information,

cost and bookings please get in touch with the named contact person. For general enquiries regarding KeeleLink and Widening Participation events, please contact: keelelink@keele.ac.uk or visit the KeeleLink website: www.keele.ac.uk/keelelink