



SPACE ACADEMY

Enriching | Advancing | Inspiring



funded by  east midlands
development agency



What is the Space Academy?

The Space Academy was launched by the Minister of State for Science and Innovation Ian Pearson in October 2008.

The Space Academy is a partnership between the National Space Centre, the University of Leicester, the University of Nottingham, Science Learning Centre East Midlands, STEMNET and East Midlands Development Agency (*emda*). The National Space Centre is the lead organisation and many of the educational activities are held at the Centre itself. Other elements of the programme are held at the partner universities, with industry organisations in the aerospace/space sector and with student participation in national and international events.

Other supporting organisations include the Royal Air Force (RAF), Specialist Schools and Academies Trust (SSAT), the Science and Technologies Facilities Council (STFC), EADS Astrium, Space Center Houston (the official visitor centre for Johnson Space Center in Texas) and several UK university-based space research centres including the Planetary and Space Science Research Institute (PSSRI), the Mullard Space Science Laboratory (MSSL) and the Surrey Space Centre.

Why is this so important?

The study of STEM (science, technology, engineering and mathematics) subjects in higher education or training is still low compared to 20 years ago. This drop in STEM subject participation may have detrimental effects on the UK economy and the global competitiveness of UK industry in a rapidly changing world as outlined in several reports to Government.

The UK has a thriving space industry and world-leading expertise in space science and climate change modelling. Information gleaned from space satellite systems has been key to fully understanding the effects that climate change has already had on the environment and in trying to model future consequences regionally, nationally and internationally. The UK has proven areas of excellence at the cutting edge of space technology and innovation. Space is a subject that so often provokes inspiration and wonder in young people.

The Space Academy couples these in a programme that addresses the pressing needs of business, industry and the country's future competitiveness

Masterclasses:

"Excellently delivered – the programme really enthused the students in a way that carried over into their lessons"

David Lomar, Head of Physics Wyggeston & Queen Elizabeth I College

"A fantastic way for A-level physics students to develop and stretch their skills in the inspirational context of Martian exploration"

Dr James Carpenter, European Space Agency

Space Academy Teachers Conference

"The space-related activities covered have been written into new Key Stage 3 schemes of work. It's had a positive impact on student motivation.

All the students enthused - Key Stage 3 results are expected to improve"

Conference delegate 2009



Space Academy – the first year

Space Academy for Students

Space Academy student programmes have been created by outstanding teachers working with space science researchers. They have been designed to enrich and enhance the understanding of students with a specific focus on the 14-19 age range.

These intensive day-long curriculum-focused programmes use the contexts of space and climate change to boost learners' engagement and understanding in STEM subjects as well as geography and environmental sciences.

Nearly a thousand students have already taken part in these programmes – including A Level, GCSE and Vocational support sessions.

An externally-commissioned study in 2008-09 focusing on the effectiveness of the Physics programmes (GCSE and A Level) found that the sessions appeared to have immediate positive effects on student confidence in both the understanding and use of physics – and that this effect was largely sustained even after the intervention. In addition, many student attitudes became more positive about physics as a career option.

Space Academy for Teachers

One of the goals of the Space Academy is to enhance the subject understanding and teaching of classroom teachers through masterclasses, workshops, seminars, and conferences conducted by internationally recognised experts in the fields of space sciences, climate change and education.

In April 2009 the UK's first Space Conference for Science Teachers was held at the Science Learning Centre East Midlands and National Space Centre. This three-day event included lectures from UK space scientists, teacher masterclasses and a space-focused careers fair supported by many of the UK's leading space companies. Over 60 teachers attended and the post-conference evaluation conducted by the Science Learning Centre network as part of the Department for Children, Schools and Families (DCSF) STEM Cohesion Strategy showed that the event had tangible impacts on student motivation, teacher effectiveness and a wider effect with colleagues in the participants' school science departments.

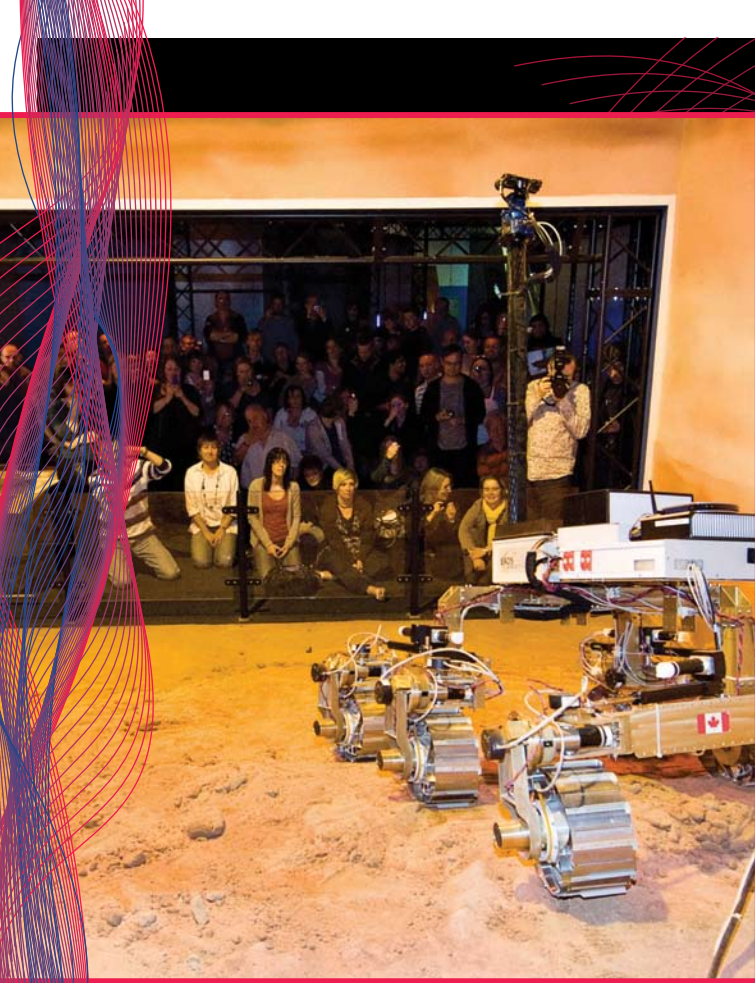
The April 2010 conference has been expanded to 100 places including 25 available for participants from around the UK.

Space Academy for Industry

The Space Academy shows learners how they can map out careers using science, technology, engineering and mathematics by hosting careers fairs and industry visits to put them in direct contact with the industries that most need STEM educational qualifications and experience.

The three Space Academy careers events in 2008-09 drew nearly 500 students in the 14-19 age range and were supported by leading UK space, aerospace and engineering companies as well as Universities, Research Councils and professional institutions such as the Institute of Physics, Royal Society of Chemistry and the Institute of Engineering and Technology (IET).

In addition, more than 35 students won fully-funded places at the annual Space School UK – an eight-day residential space summer camp at the University of Leicester supported by EADS Astrium, the Ogden Trust and the British National Space Centre (BNSC). The curriculum-based competition to select the winners drew nearly 100 high-quality entries and the 2010 competition will offer 20 UK places and one place at the ESA/Norwegian Space Centre European Space Camp held at the Andoya Rocket Range (the world's most northerly rocket launch site).



Space Academy beyond the region – National and International

Although a regional initiative funded by *emda* and focused on the East Midlands, Space Academy programmes have drawn national and International interest.

- A national series of Space Academy teacher masterclasses has been developed in partnership with the Surrey Space Centre and Tribal PLC on behalf of the Learning and Skills Improvement Service (LSIS). These are being piloted at Science Learning Centres across the country.
- Space Academy student masterclasses have been held for more than 250 students from across the UK as well as at Space Center Houston and as part of the Hong Kong Science Festival (in conjunction with the British Council)
- The Space Academy partnership produced the space industry careers resources for DCSF's STEM resource pack for Information, Advice and Guidance (IAG) practitioners across the UK.

- Space Academy teacher masterclasses were highlighted at the world's largest space education conference- the annual Space Exploration Educators Conference (SEEC) held at NASA's Johnson Space Center in February 2009 and attended by over 600 teachers. The UK session evaluations from Space Center Houston yielded the highest scores of any conference session and the 2010 presentations shall be on behalf of BNSC as well as the Space Academy partnership.
- NASA's largest teacher support programme (the Aerospace Education Services Project led by Pennsylvania State University and delivered through NASA centres across the United States) is working with the Space Academy partnership to develop new teaching methodologies and international education resources.

For further details on The Space Academy please visit our website www.ukspaceacademy.org or contact Dr Sarah Hill, Space Academy Project Manager, via email sarahh@spacecentre.co.uk or telephone 0116 258 2125

Space Exploration Educators Conference 2009

"Energetic, fun, exciting. Best session at the conference – what I was hoping to find! Totally inspirational – the UK rocks!"

Space Academy Teacher Conference:

"The best training course I've been on in 27 years! Fantastic, wonderful mix of fun, theory, knowledge, advice etc. Challenging, thought provoking, inspiring! Every aspect was first rate"

Conference Delegate 2009

"Has made me genuinely excited to teach! Have used so much of this stuff!"

Conference Delegate 2009

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The University of
Nottingham



University of
Leicester



Science
LEARNING CENTRES



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