What is the Space Academy?

The Space Academy was launched by the Minister for Science and Innovation Ian Pearson in October 2008. The Space Academy is a partnership between the National Space Centre, the University of Leicester, 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.

What will it deliver?

The Space Academy programme works simultaneously with pupils, educators and industry to:

*Enrich and enhance the learning experiences of students,* with a specific focus on those in the 14-19 age range. This is achieved by a range of curriculum-based programmes that use the contexts of space and climate change to boost learners’ engagement and understanding in STEM subjects (sciences, technology, engineering and mathematics) as well as geography and environmental sciences.
The programme is aimed at both academic and vocational learning routes, encompassing traditional AS/A2 and GCSE programmes as well as the new Diploma pathways. Learners are encouraged to access the various programmes successively as they progress through their educational career thus building continuity and further motivating them.

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. The annual Space Conference for Science Teachers is run by the Science Learning Centre East Midlands.

Show 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 educational backgrounds in these STEM subjects.

Why is this so important?

The uptake of STEM subjects studied through higher education or training is still low compared to 20 years ago. This drop in STEM subject participation is predicted to have detrimental effects on the UK economy and the global competitiveness of UK industry in a rapidly changing world. In a report to the Government in 2007 Lord Sainsbury outlined these concerns and recommended strategies to address the decline including financial incentives and better CPD programmes for STEM teachers, curriculum changes so all students gain sufficient understanding of STEM principles, improved STEM careers advice and better teaching laboratories.

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 in a global market.

www.spacecentre.co.uk/academy
How is Space Academy distinctive from other space education programmes?

There are many excellent space education initiatives already running in the UK. Space Academy is distinctive in several ways:

- It is a sustained, progressive programme of curriculum support in STEM subjects
- It works simultaneously with learners, educators and industry
- The programme is developed in conjunction with internationally recognised experts in space science, education and industry
- Dedicated university researchers are involved in programme development and delivery working alongside teachers who have been assessed as outstanding practitioners
- The programme couples the inspirational contexts of space and climate change to enhance learning and engagement in curriculum subjects
- Focused support for educators is provided through the partnership with the Science Learning Centre East Midlands
How effective is this approach?

Space Academy programmes are built on earlier projects piloted by the National Space Centre, funded by emda, the Science and Technology Facilities Council (STFC) and EADS Astrium.

The Space Academy brings existing well tried educational activities, such as Challenger missions and e-Missions, into a progressive programme covering the extended age range 9-19.

New elements include physics-based masterclasses already successfully piloted with more than 100 students at GCSE (separate programmes for different ability groups) and AS/A2 level. Evaluation of these pilot programmes showed that more than 90% of participants felt that the programme considerably boosted their understanding of curriculum science. Comments included:

“Excellently delivered – the programme really enthused the students in a way that carried over into their lessons”
(David Lomar, Head of Physics, Wyggeston and Queen Elizabeth I College)

“A superb programme that engaged and stretched students of all abilities”
(Professor Paul Delaney, York University, Toronto)

“The programme is a fantastic way for A-level physics students to develop and stretch their skills in the inspirational context of Solar System exploration.”
(Dr James Carpenter, European Space Agency)

Careers events were held for more than 500 14-19 students, supported by industry and University participants including EADS Astrium, Rolls Royce, SSTL, Logica, Infoterra, Magna Parva, Zeeko, the Open University, MSSL and the University of Leicester.
What’s in store for 2008-09

- More than 40 all-day physics masterclasses for students from Key Stages 4 and 5
- “Challenger” and “e-missions” for students from Key Stages 2 and 3
- CareersFest 2008: Post-16 careers event including talks from leading organisations in the UK space industry
- The UK’s first residential Space Conference for Science Teachers in April 2009 at the Science Learning Centre East Midlands
- The development and piloting of masterclasses in Chemistry, Biology, Geography and Applied Science
- Competitions to win 35 fully funded residential places at the annual Space School UK in July-August 2009
- Presentation of Space Academy masterclasses at the largest Space Education conference in the world, NASA’s annual Space Exploration Educators Conference (February 2009, Houston)
• Support for University of Leicester CubeSat student satellite project

• Space Summer Roadshows to visit Nottingham, Lincoln, Northampton and other regional centres

• Financial support, on application, for the East Midlands STEM education sector

For further information on Space Academy contact Dr Sarah Hill, Space Academy Project Manager:
sarahh@spacecentre.co.uk • 0116 258 2125
The Space Academy is a partnership between the National Space Centre, the University of Leicester, University of Nottingham, Science Learning Centre East Midlands, STEMNET and emda.

Also supported by EADS Astrium, Aim Higher and The Ogden Trust