

THE ROCKS FROM SPACE INITIATIVE AND THE SPACE SAFARI. V. Brooks¹, R. C. Greenwood², J. Bridges², J. Watson² and V. K. Pearson². ¹Stockton City Learning Centre, Marsh House Avenue, Billingham, Teesside, UK TS23 3QJ. ²PSSRI, The Open University, Walton Hall, Milton Keynes, UK, MK7 6AA. v.k.pearson@open.ac.uk or val_brooks@stocktonclc.co.uk

Introduction: Rocks From Space (RFS) is a new integrated outreach programme designed to raise awareness of UK planetary science activities. In addition to curriculum and skills development, the initiative intends to provide understanding of the Solar System and emphasises the impact of planetary science on wide reaching social situations. Its target audience is general public, in particular young people. The project is funded by the UK's Particle Physics and Astronomy Research Council and hosted at the Open University.

RFS capitalises on traditional methods of outreach e.g. school talks/workshops/displays. However, these activities are often limited to the local area to fit within budget and time constraints. The RFS team is therefore committed to investigating novel and contemporary approaches to public outreach.

Stockton City Learning Centre (SCLC) has pioneered the use of Moodle-based Virtual Learning Environments (VLE) to assist teaching strategies in the Teesside area of North East England. VLEs regularly used in further education [2] however are becoming increasingly common in primary and secondary education [2]. The online nature of this facility enables students to undertake activities from schools and home, relying only on an internet connection – an “anytime, anywhere resources” [3]. Therefore, SCLC's VLE facility presented an ideal medium for RFS remote outreach.

Space Safari 2006: *The Concept:* The Space Safari is a collaboration between the Open University (OU) and Stockton City Learning Centre (SCLC) on Teesside. Space Safari 2006 was developed as a pilot project to trial the use of electronic media for space scientists to reach geographically diverse audiences. Devised as a collaborative exploration of the Solar System, over 300 students took part in the pilot from 11 primary schools (aged 6-10yrs) in the Teesside area. Space scientists were based at The Open University campus in Milton Keynes. Schools were reached via SCLC's virtual learning environment (VLE) and Elluminate Live! online classroom facility. Open University scientists provide focussed resources for the VLE (images, links to websites, basic information, quizzes etc) and each school was allocated a planet which they then explored via the resources. Each school then produced a piece of work to be shared between all schools and the scientific community.

Project Aims: A major aim of the Space Safari was to engage students in planetary and space science and raise awareness of the UK's involvement in such activities. It also aimed to provide students with the unique opportunity to communicate directly with space scientists and encourage them to consider science as a rewarding and exciting career.

The Theme: Space Safari 2006 was broadly themed around life in the Solar System. Some schools investigated their planet with the aim of determining if life could survive there. Others investigated the planet and then decided what the life would look like based on the planet's conditions. Others “became” the life forms in order to show other students what the planet was like. There was obvious artistic license allowed for younger students to adopt such themes.

e-Exploration: Students accessed the VLE while at school and in their own time (including holidays). Students were encouraged to post their findings, ideas and questions on the VLE to encourage a collaborative learning environment. Wikis, audio and text files were available for use and an “ask the scientist” forum was also available. These asynchronous activities were complemented by synchronous virtual classroom activities using Elluminate Live! e-classroom facilities where students could attend “drop-in” sessions with scientists to discuss their exploration and ask questions.



Figure 1. Students taking part in the live link to Texas during National Science Week.

National Science Week events: Schools were encouraged to focus their work around the UK's National Science Week and live sessions were increased accordingly. This also coincided with LPSC 2006 and one live session was conducted between 100 students in the UK, 3 scientists at The Open University and Dr.

Tim McCoy from the Washington DC Smithsonian Institute who was attending LPSC. This was undoubtedly one of the highlights of the Space Safari.

Skills Development: Despite the limited time given to science in the primary curriculum, teachers identified that the Space Safari also actively developed key skills such as:

- Creativity – literacy, art & design, ICT, music.
- Key skills - working with others, communication, problem solving, improve own learning , IT and numeracy
- Thinking Skills - Reasoning, enquiry, creative thinking, information processing and evaluation.



Figure 2. Screen shot of two outputs from the Space Safari. Top: Whitehouse Primary's "Pluto and the Plutoneans". Bottom: St. John the Baptist's "Our Solar System. Both assisted key skills development outside the science curriculum.

Reflections: Preliminary questionnaires were completed by students and teaching staff alike in order to determine their prior knowledge of space science and their experience with electronic resources. Students and teachers took part in evaluations hosted on the VLE and gave interviews about their experiences. The trial of the Space Safari was deemed to be a huge success with students actively engaging in science outside the school environment. Students and staff were thrilled by the opportunity to speak directly to space scientists. The Space Safari will be rolled out across the UK starting in 2007.

The Future: RFS have several events planned for the coming year, including Space Safari 2007, which will build on the experiences of the pilot study and hopefully extend to a wider geographical area, including several schools linked via the global Moodle network.

References: [1] JISC (2005) <http://www.jisc.ac.uk>
 [2] BECTA (2003) <http://www.becta.org.uk> [3] Jacobson and Kremer (2000) <http://www.ucalgary.ca>