

# UK SPACE AGENCY CHALLENGES STUDENTS TO TRAIN AS ASTRONAUTS



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Four Astronauts were on hand at the House of Commons in December 2010 to launch a new space mission – a challenge to young people aged 9-11 to improve their health by training as astronauts. Three of the astronauts are well-known and regular visitors to Parliament: Dr Piers Sellers OBE, Dr Helen Sharman OBE, and Richard Garriott, British born private space participant and son of Dr Owen Garriott.

The fourth visitor would have been spotted by eagle eyed observers as the diminutive mascot of Mission X – Flat Charlie (inspired by NASA Administrator, Major General Charles Bolden), pictured here with Piers Sellers before his adventure to the International Space Station as part of the space doctor Michael Barratt's payload for STS 133 Discovery. Dr Michael Barratt and the STS 133 Discovery Crew visited Parliament on June 29 2011 as guests of the Parliamentary Space Committee.



Dr Piers Sellers with Flat Charlie outside Big Ben



270 students, from 7 Essex schools<sup>(1)</sup>, responded to the challenge and embarked on a unique mission to train like an astronaut and boost their health and fitness.

The international educational outreach pilot led by NASA involved 9 different countries including the USA, Columbia, and European nations. Mission X challenges students to be more physically active; increases awareness of the importance of lifelong health and conditioning; teaches students how fitness plays a vital role in human performance for exploration; and inspires and motivates students to pursue careers in science, technology, engineering and mathematics.

Supported by the UK Space Agency and Venture Thinking The Train Like an Astronaut Competition challenge 'blasted off' in December with a visit from Astronaut Richard Garriott to the lead school Mountfitchet



Mathematics and Computing College. Students took part in a launch day held at the secondary school on January 14th 2011. Input from rocket scientist, Jon London, Astronaut Instructor, Dr Iya Whiteley, and nutritionist Caroline Harper gave students expert insights into health off-world and back on earth. Jeremy Curtis from the UK Space Agency provided insight into the growth and innovation within the UK Space Industry and the exciting range of jobs available for future scientists and engineers.

In a message to the UK students embarking on Mission X, British Astronaut Dr Piers Sellers OBE, said, "Being an astronaut is one of the coolest jobs ever. Keeping fit has been key to me being able to go into space three times ... and walk in space."

Major Tim Peake, the first British ESA astronaut, added, "Exercise and eating right while you are young is so important. Getting fit and staying fit helps you do what you want with your life, even reaching for the stars!"

Richard Garriott, the sixth private citizen to fly in Earth's orbit, and one of the Mission X ambassadors, said, "I had to overcome major medical issues before I could get to space. Being healthy and fit is important to get into space and to enjoy your time off-world."

The Mission X UK team took part in a range of physical activities and science activities during the 6-week mission. Each school organised their own training camps using the high quality resources available on [www.trainlikean astronaut.org](http://www.trainlikean astronaut.org). Teachers and students were invited to submit team points, post blog updates, pictures and videos of their training and download quizzes, games and songs!

Much of the activity was completed in teams within a classroom setting but students were set some interesting extra-

curricular tasks including food diaries, hydration logs, and physical fitness challenges. All the activities were aimed at showing the importance of an active lifestyle, healthy nutrition and also the fun of conducting hands-on science enquiries.

Team challenges in the UK include 19 different physical missions. Examples include:

- Energy of an Astronaut
- Base Station Walkback
- Let's Climb a Martian Mountain
- Crew Assembly
- Do a Spacewalk
- Hydration station
- Space Rock N Roll
- Zero gravity/Low Fat
- Astro-agility
- Speed of Light
- Get on Your Space Bicycle

Students gained skills in scientific reasoning and teamwork while participating in hands-on training missions targeting strength, endurance, coordination, balance, spatial awareness, biology, chemistry and physics.

Students enjoyed the hands-on activities – especially activities that involved simulated urine, testing bone strength using chocolate bars.

The pilot ended with an astronaut graduation event – with students skyping with Major Tim Peake and NASA Houston and with parents learning more about nutrition, exercise and space alongside industry experts including Jeremy Curtis, Head of Education and Outreach at the UK Space Agency.

The Mission has been a highly successful one – for students, parents, and teachers. Catherine Anderson, Headteacher of Mountfitchet Mathematics and Computing College commented:

"It's been a fabulous project on many levels. It has enabled our secondary school to work closely with our feeder primary schools on a great hands-on project that pulls together science, PE, and healthy living

topics. All the students have been excited by the space context and the excellent teaching activities. We are hoping to build this into our curriculum over the coming year and extend to other schools within our local community."

Dr Glenys Jones, from the Medical Research Council Human Nutrition Division, one of the experts who took part in the Astronaut Graduation event noted: "Childhood obesity is a growing problem. This project has been great because it has allowed children to have fun whilst exercising, and has given them an insight into what makes a good diet in an interesting and engaging way."

Heather MacRae, Venture Thinking and the UK Co-ordinator for Mission X explained: "We only had a month to get Mission X off the ground after we were given the 'good to go' by the UK Space Agency. The fact that the schools were so enthusiastic about getting involved, took on the project and extended it is a sign that the project has a really inspirational and aspirational quality. All the schools involved took the materials, adapted them to their students, and extended and enriched the science content with art and music activities. It was great for the students to speak live to Houston, and say Houston, we have a success!"

Jeremy Curtis from the UK Space Agency is optimistic that the UK will be able to take part in the three year multi-year programme proposed by NASA as the next stages Jeremy said: "Mission X has had a huge impact. The UK Space Agency showcased Mission X activities at the Big Bang Fair in March 2011. We could see how exciting the mission challenges were to the general public and how they led into some really exciting discussions about life in space. We were delighted when the Red Arrows team joined in on some of the reaction and teambuilding activities."

A planning meeting is taking place at ESTEC in The Netherlands in July 2011 to identify the next phases in the mission. All being well a new set of young astronauts will be training and getting excited about the world's future in space in the UK from January 2012.

Further information on the project is available from: [Heather@venturethinking.com](mailto:Heather@venturethinking.com) [www.trainlikean astronaut.org](http://www.trainlikean astronaut.org) <http://www.ukspaceagency.bis.gov.uk>

*Heather MacRae as Director of Venture Thinking has been working closely with the UK Space Agency, Queen Mary University of London and Astrium Ltd on a range of education curriculum projects to inspire students in STEM areas. Current projects include Mission X - Train Like an Astronaut, Bridget Surfaces – outreach programme for the Mars Rover, and Media Space – a science communication project with The Metro newspaper. Heather has worked closely with the Parliamentary Space Committee on the education themed Christmas receptions.*

<sup>1</sup> Essex Schools Involved are Mountfitchet Maths and Computing College, Bentfield Primary School, Elsenham Primary School, St. Mary's Primary School, Birchanger Primary School, Henham and Ugley Primary School, Grove Primary School (Redbridge)

