

Participatory Exploration for Inspiration and Education (12)
Educating the Next Generation (2)

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THE INTERNATIONAL SPACE STATION EDUCATION ACCOMPLISHMENTS AND
OPPORTUNITIES

Abstract

The International Space Station (ISS) has a unique ability to capture the imaginations of both students and teachers worldwide. The presence of humans onboard ISS for the past ten years has provided a foundation for numerous educational activities aimed at capturing that interest and motivating study in the sciences, technology, engineering and mathematics (STEM). Over 31 million students around the world have participated in ISS-related activities. Projects such as the Amateur Radio on International Space Station (ARISS), Earth Knowledge-based Acquired by Middle Schools (EarthKAM) and Take your Classroom into Space events among others have allowed for global student, teacher and public access to space through student image acquisition and radio contacts with crewmembers. Educational activities are not limited to STEM but encompass all aspects of the human condition. This is well illustrated in the Uchu Renshi project, a chain poem initiated by an astronaut while in space and continued and completed by people on Earth. With ISS operations at least until 2020, projects like these and their accompanying educational materials are available to more students around the world.

From very early on in the program's history, it was recognized that students would have a very strong interest in the ISS, and they would be provided a unique opportunity to get involved and participate in science and engineering projects. Ever since the first ISS element was launched, a wide range of student experiments and educational activities have been performed by all the international partner agencies, National Aeronautics and Space Administration (NASA), Canadian Space Agency (CSA), European Space Agency (ESA), Japan Aerospace Exploration Agency (JAXA) and Russian Space Agency (ROSCOMOS), and a number of non-participating countries, some under commercial agreements. Many of these programs still continue, and others are being developed and added to the stations tasks on a regular basis. These diverse student experiments and programs fall into one of the following categories: student-developed experiments; students performing classroom versions of ISS experiments; students participating in ISS investigator experiments; students participating in ISS Engineering Education; Education Demonstrations and Cultural Activities.

This paper summarizes some of the main student experiments and educational activities that have been conducted on the ISS. It also highlights some upcoming projects.