

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)

Lift Off - Secondary Space Education (2)

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THE USE OF SPACE APPLICATIONS TO ENHANCE LEARNING WITHIN THE INTERNATIONAL
BACCALAUREATE DIPLOMA PROGRAMME

Abstract

The International Baccalaureate (IB) Diploma Programme is a high school programme that prepares pupils aged 16 to 19 for university studies. It is taught at schools throughout the world in English, French and Spanish. It ensures breadth of knowledge and stimulates pupils to develop a coherent approach to learning. Apart from the core curriculum in each subject there are a number of opportunities for space to be introduced into the programme. In the physics course it is necessary for teachers to select two options to be taught from a predefined list. Astrophysics is one of the options. We selected this option and used on-line exercises produced by the European Space Agency and the European Southern Observatory to help the pupils understand how data from telescopes are analysed to further our knowledge of the universe. A visit was also made to a local observatory. Last year at Rudbeck space was the chosen theme for the obligatory science project that the pupils had to perform over 10 hours. Physics and chemistry were highlighted in the project, which consisted of building and launching model rockets. The activity was very popular with the pupils who developed their scientific knowledge, trouble-shooting skills, and ability to work in a team. During the diploma programme pupils are required to carry out an independent research project that is presented in the form of an extended essay. This is another opportunity where space can be introduced, for example one pupil selected a physics topic in which she evaluated the use of data from the Hubble Space Telescope. The use of space applications in several parts of the IB diploma programme gives pupils a sense of continuity and context for what they are learning. It is generally possible to find space applications for many parts of the physics curriculum and pupils have responded positively to it being introduced into the programme. A hinder in the implication of this idea in other schools may be the lack of knowledge about space-related topics among teachers in schools.