

Concepts for the colonisation of mars: a vehicle for teaching applied interdisciplinary science in a secondary school

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Abstract

Gifted and talented is a national UK programme aimed at stretching and challenging secondary school pupils in all areas of the curriculum, and provides opportunities for pupils to further their abilities outside of school life. As part of the Researchers in Residence scheme in the UK, a collaboration has existed for the past two academic years between a post-doctoral researcher at Mullard Space Science Laboratory and science teachers at a mixed-sex comprehensive secondary school (Willingdon Community School). During this collaboration a gifted and talented day was held at the school and a session focused on astronomy and planetary science was held for 13-14 year old pupils. A number of activities were designed and run during the day and in this poster we describe a session in which pupils were tasked to design a concept for the colonisation of Mars. In their concept they were required to think about how to overcome the demands for electrical power, oxygen, water, food and other resources. It was found that the session provided a useful vehicle for pupils to appreciate the interdisciplinary nature of science and to think creatively. It also provided a setting for the pupils to draw on a wide section of the UK "Key stage 3 and 4" curriculum in order to address the issues posed in the session. This approach also helps to support teachers in addressing the "how science works" part of the UK "Key stage 4" curriculum. In addition the session also enabled them to apply and develop team working, project management and oral presentation skills in a science-based setting.