Revitalising specialism through space education: Using space to ensure specialism makes an impact - High Tunstall College of Science

Leading space education programme

Key actions

We applied to become a leading space school because we recognised that using space as a context we could ensure the impact of our specialism would continue to grow. Keen to build upon and extend existing partnerships, science staff worked to develop resources which could be used to support curriculum delivery and develop community links. The theme of space was used to deliver a 'Super learning day' for 230 year 8 students. Staff from our secondary partners were invited and received copies of the resources used and also had the opportunity to see us in practice.

Following this success English, maths and science staff worked in collaboration to produce materials to further develop enrichment activities which would :-

- promote enquiry based learning
- make use of digital media
- improve attitudes to science
- raise awareness of STEM
- involve primary, secondary and community partners

Staff involved in the project were taken on a residential to receive CPD on enquiry based learning, and to provide time for planning and sharing good practice. This helped to further develop their pedagogy and leadership skills.

The Space enrichment activities developed have included workshops on

- rocket design and launch
- solar powered buggies
- astronaut suits
- emergency oxygen supplies
- a murder mystery at our Space Academy
- designing and building a moon habitat

Astronomy has been introduced as part of our community learning programme and some participants are awaiting results for their GCSE in Astronomy. A bank of resources has been developed to deliver the course which will continue again next year. Year 5 and year 6 Primary pupils (400+ pupils) from all of our partner schools have been involved in curriculum enrichment days. Feedback from these days has been positive. As a direct result of this more pupils are choosing to attend our college - after one of the themed space days for year 6, we were told three pupils had changed their choice of secondary school to us.

Investigative approaches to learning have inspired participants and their attitudes to science have improved. Students have also benefited from a raised awareness of the importance of STEM subjects. When we recently asked year 8 students if they would like to work towards a BTEC STEM Leadership qualification, which would involve them in helping to facilitate events we were overwhelmed by the numbers wishing to take part.

Impact on lead and partners schools

Space has revitalised specialism in the school. Being a leading space education school has enabled us to maximise the impact of specialism and work towards becoming an outward facing school. Involvement in the programme has opened doorways for us and given us opportunities to establish and develop partnerships with other schools, businesses and Higher Education institutes. Space enrichment and enhancement events have enabled us to develop community engagement by working with others in, across and beyond our own school. Planning and delivery of these events has provided opportunities for staff development and resulted in changes to pedagogy and improved confidence and leadership skills. We have also used space contexts to sustain delivery of the curriculum in ways which enthuse the students and develop their Personal Learning and Thinking Skills. Involvement in LSEP has helped us with re-designation as a specialist school provided us with opportunities to be involved in other STEM priority activities such as the girls into physics programme and we are working in collaboration with our post 16 providers to develop a rocket design competition for our year 11 students and those from our partner schools.

Impact on specialism

School partnerships have developed further and 2 secondary partners have used materials developed to deliver their own curriculum enrichment days. Community learning has been extended and 38 people, including adults from the local community, have attended our evening Astronomy course, with 20 participants opting to take a GCSE exam at the end. Guides and Brownies have also attended workshops and guides have used their experience to work towards the Centenary badge.

The majority of year 5 and year 6 students from our partner schools have attended themed days run by English, maths and science. Science, maths and English staff have developed closer links with our partner primaries and resources have been shared with secondary partners.

Following successful re-designation in December 2008 we were able to use our involvement in the LSEP school initiative to attract more business partners willing to work with us and as a result **successfully** raised £25000 match funding from existing and new business partners. This meant we received an additional £25000 Capital Grant fund.

Staff involved in the project have explored the use of enquiry based learning and digital media to engage learners and enhance the learning experience.

Top tips

Make sure staff are aware of benefits of being involved. This could include

- opportunity to work collaboratively and share good practice
- opportunity to develop leadership skills and contribute to specialism
- improved pedagogy and ability to engage students

Invest in success

- provide CPD for staff involved in new initiatives
- make use of specialist funding to resource activities and support CPD

Don't just rely on staff in school

- involve business partners and contact local university outreach workers to see if they can offer support
- involve students as they can help to facilitate and plan activities

Celebrate success and recognise achievement

- use newsletters and website to report on work done and its impact
- provide feedback in assemblies and staff briefings

- make sure all those involved receive recognition for their contribution e.g. by awarding them a science college pin

Clearly define success criteria at the planning stage and explain how evidence for evaluation will be collected - consider

- How will pedagogy of staff develop?
- How will collaborative practice improve?
- How will attitudes to STEM subjects change?
- What knowledge, understanding and skills will be developed?
- What are expected outcomes for students and other participants?
- How will community engagement improve?
- How will links with HEI and universities be developed?

Minimise cover implications

- look at school calendar and make use of gained time such as when year 10 are on work experience, year 11 have left
- place themed days or weeks on the calendar so staff know to expect a different timetable then
- use business partners as facilitators and get technicians involved

Bid for money to support activities

- look for opportunities to bid for funds from organisations such as IOP (Institute of Physics) or Royal Partnership grants

The future

Staff involved in developing activities linked to this have improved their pedagogy and practice. Staff from areas other than science are now looking at other ways in which science themes can be used in their curricular areas and the Transforming Learning team which has been set up within school contains a number of staff involved in this project. The college is looking to run a themed week in October for all students in years 7, 8 and 9. The theme being"Is there anybody out there?' Staff from every faculty have shown a great deal of enthusiasm for this week and have come up with a number of ideas for activities to be developed.

Staff confidence in using digital media and enquiry based learning has increased as has their ability to communicate to and manage large audiences. The STEM agenda is now a key priority and from September 2010 we will be offering the STEM Leadership qualification to some of our students. This will enable us to further develop our students as facilitators of learning.

The community Astronomy course will continue next year and early indications suggest there will be a good uptake.

Contact at school

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Images from the programme


Gayle Weathers
Breaking News at Space Academy