

The University of York

The York Enrichment of Science in Initial Teacher Training (YESITT) Project

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Introduction

The project at York involved a number of partners: KS3 consultants (Zoe Crompton, Tim Greenway), education staff from the Department of Educational Studies at the University of York (Martin Braund, Bob Campbell), six teacher-mentors involved in the York ITT partnership, and their trainees on the science PGCE course. The schools, mentors and trainees were as follows:

School	Trainee	Mentor/teacher
Huntington School, York	Gareth Stott	Joanne Ladds
Canon Lee School, York	Neil Roupee	Holly Cook Andy Carruthers
Easingwold School, North Yorkshire	Justine Bailey	Anna Dugdale Graham Smith
Joseph Rowntree School, York	Rachel Hurton	Florian Gleisner
Malton School, North Yorkshire	Claire Taylor	Anne Rowntree
Graham School, North Yorkshire	Elizabeth Newbury	Trainee withdrew

Aims

The project's aims were to:

- develop teachers' and trainees' knowledge base and repertoires of techniques and skills needed for teaching *Ideas and Evidence in Science* and the nature of science at Key Stage 3;
- develop and evaluate teaching materials in this area of science teaching;
- enhance co-working of mentors/teachers/trainees and enrich training;
- communicate best practice within the University's ITT partnership' and contribute to developments nationally.

The project began with a day workshop attended by trainees and teachers. The workshop focussed on exploring the nature of science and ideas and evidence, as well as on strategies that challenge pupils to think about the validity and reliability of claims and evidence.

Following the workshop, trainees developed one or more lessons on a topic agreed with their mentor, and taught and evaluated this lesson. In most cases the lessons were original creations

rather than adaptations of existing ones. Trainees were issued with a project report framework so that they could report evaluations of the lessons. Most trainees received visits from a Key Stage 3 consultant who either watched and commented on the trainee's teaching, helped develop ideas discussed at the workshop into lessons, or discussed outcomes and difficulties, advising them appropriately.

After the completion of this first round of teaching, trainees and partner teachers attended a second workshop day at the University at which each set of lessons was presented, discussed and further evaluated. This collaboration led to modifications and trainees then taught these modified versions to different classes. Trainees then submitted a final version of their lesson using a common format that included a detailed lesson plan, teachers' notes, background science, answers to any questions and the pupils' materials.

Overview of the lesson materials

Activity D: History of ideas about space

Developed by Joanne Ladds

Joanne Ladds worked with a class of Y7 pupils and devised five lessons, taught over a two-week period, to illustrate the historical development of ideas about the Solar System. Joanne and her mentor developed original material encouraging and supporting pupils to research the work of selected scientists and explorations of space. The lessons involve pupils using this information to script and enact interviews with the scientists and to construct a timeline showing the development of ideas about the Solar System.

Activity E: GM foods

Developed by Holly Cook

Holly Cook's lesson is based on newspaper articles about genetically modified foods. Holly has produced some articles to provide scenarios that would generate interesting discussion about the reliability of the claims being made. Pupils read each article and discuss which ones might be legitimate. One article, in which scientists claimed to have developed a blue variety of strawberry, was bogus.

Activity F: Rainbows

Developed by Anne Rowntree

Anne Rowntree reviewed the school's scheme of work for a topic on light with the class teacher. They decided to teach a lesson to encourage pupils to link their previous knowledge and evidence from a series of demonstrations to theories explaining the formation of rainbows. The lesson includes, an elicitation of pupils' knowledge about rainbows and colour, a series of practical demonstrations of dispersion and a plenary in which pupils choose between conflicting theories (by *Theodoric* or *Aristotle*) saying how they think these relate to the evidence available.

Activity G: Planet X

Developed by Florian Gleisner

Florian Gleisner's lesson involves examining various features of a fictitious planet, Planet X, to establish how similar it might be to Earth. The lesson includes a circus of ten stations at which pupils consider different pieces of evidence about planet X (*e.g.* its atmosphere, gravity, and length of day and year).

Further information and details of the lessons developed by the other trainee teachers can be found in the case study describing this project as part of the KS3 National Strategy website.
