

Introduction

Science is a compulsory subject for most of the UK up to the age of 16. This might suggest that we do not need to promote it until then. However, there is evidence to show that pupils start to form their ideas about careers much earlier than this; therefore it is important that they are encouraged to appreciate the opportunities available in science and technology from an early age. Also making links to the world of work may help pupils to see that science is relevant to their lives.

The resources in this section are designed to help science departments promote science to their pupils and also to make links between science and the world of work.

In particular, the intention is to provide case studies of people from a variety of backgrounds who have studied science, who work in science or who use science in their work. It is important to point out to pupils that whilst studying science opens up a wide range of careers in science, technology and engineering, it does not mean that they are prevented from entering other non-scientific careers.

You might also find some of the text from the leaflet or the PowerPoint useful if you have to write an entry for an options booklet.

Careers in Science Lessons

Careers could and perhaps should be made part of normal science teaching by drawing attention to the real life applications of science and the people involved. Indeed the Ideas and Evidence strand of the English National Curriculum states that pupils should be taught about *the ways in which scientists work today and how they worked in the past...*

Another way of making the link would be through the use of scientists in the classroom. The Science and Engineering Ambassadors (SEAs) programme uses current science/technology professionals to inspire young people about science and technology. Visit the SETNET website www.setnet.org.uk for more details.

You might also have an area dedicated to careers somewhere within the Science Department. This could be where pupils access the material sent to schools by scientific companies and organisations. See the further contacts resource for suggestions of organisations. You could also decorate this area with the careers files produced for each of the Science Year CDs.

A Dedicated Careers Lesson

You may wish to consider dedicating a science lesson to careers when pupils are making option choices. At present this is likely to be a particular issue for schools where pupils can opt to study single or double science. In the longer term moves towards a 14-19 curriculum will make it more important to ensure that pupils can access up to date and accurate advice about careers in science and technology.

Finding out about Careers

A good starter activity would be to use the *Top Science* careers cards from this CD to get pupils thinking about how science might be useful to them in the future. If pupils can access the Internet there are a number of sites that pupils could use to find out more about specific careers or to help them think about careers. The *Next Steps* section of the Planet Science website www.planet-science.com has a number of activities which provides pupils with a fun way of finding out more about a variety of careers.

You might also use the *How Scientists Make Money* series of assignments that were on the *Can We Should We?* CD ROM. Although these were designed for the GCSE in Applied Science, some sections could be undertaken by younger students to develop their understanding of science in the workplace.

Video

A number of organisations have produced videos that could be useful for example, Science Year produced *Where's the Science in That?* to show some of the applications of science.

Role Models

Older or ex-students could be invited to the lesson to talk about their experiences and answer pupils' questions.

Follow Up

Pupils could be given a copy of the *Choosing Science* leaflet to take home. You can add the school logo to the front of this leaflet before photocopying.

Presentation

The PowerPoint presentation on *Choosing Science* is a way of explaining to pupils what the science options in the school are. This will work most effectively if it is adapted to suit your school (see text box).

Good practice guidelines for selling science to girls

'Humanise' science as much as possible:

- Bridge the gap between science as theory and SET in the real world.

Science is relevant to and good for people and society!

- Highlight the co-operative, collaborative aspects of SET jobs to dissipate the idea of a lonely scientist tinkering away in a lab.
- Emphasise that women are scientists too, and that they have lives outside science! If putting a face to the material, make it a young face that girls can identify with.
- Make it clear that jobs in SET offer opportunities for meeting people, travelling, having fun and making money!

Address issues of confidence:

- Be imaginative in choice of careers – address a spectrum of skill levels from craft and technicians, to more academic, high-flying jobs. You don't have to be exceptionally brainy to be a contributor!
- Distinguish between knowledge and skills, and stress that on-the-job training is an integral part of many SET jobs.
- Highlight the fact that jobs in SET can offer secure and supportive working environments.
- Make the link between school qualifications and the career ladder: these jobs are there for girls like you.

Make material appealing:

- Use bright, attractive colours and modern fonts
- Tap in to youth culture and speak its language
- Use short, clear pieces of text, strong headlines and up-to-date images.

Taken from DTI Promoting SET for Women's report Get with It. Available from http://www.set4women.gov.uk/set4women/projects/get_with_it.htm

Altering the PowerPoint

1. Deleting slides you don't want

For example, if your school does not offer GCSE Applied Science you may want to delete the slides that refer to it

- Click *View* from the top menu bar.
- Click *Slide Sorter*.
- Click on any slide you don't want. Click *Edit* from the top menu bar and click *Delete Slide*.

2. Changing the order of your slides

- Click *View* from the top menu bar.
- Click *Slide Sorter*.
- Click on the slide you want to move and drag it in between the slides where you want it to be.

3. Inserting new slides

For example, you might want to insert slides that explain any additional information such as the specification used, modules, test dates and timetabling.

- Add new slides to type your information onto.
- Choose the slide that you want your new one to come after.
- Click on this slide.
- Click on *Insert* from the top menu bar.
- Click *New Slide*.
- You can choose a particular layout. The layouts give you spaces to put text or pictures.

Options Evenings

Many schools will have options evenings where parents can find out more about the choices that their children can make. As well as putting on a number of hands on experiments for parents and children to explore, you could have the *Choosing Science* PowerPoint presentation running and the leaflets available.

In addition to providing compelling literature and reasoned arguments it could be useful to give them a tangible, physical object that they can interact with and remember. This should help keep the science option at the forefront of their minds. *Apples* is an imaginative way that you might attempt this.

Further Reading and Sources of Information

Choosing Science at 16: The Influences of Science Teachers and Careers Advisors on Students' Decisions about Science Subjects and Science and Technology Careers. Munro, M., & Elsom, D. (2000). Cambridge: Careers Research and Advisory Centre (CRAC).

<http://www.sciencenet.org.uk/careers/index.html>

Part of the Sciencenet website 'Not just a lab coat' gives an insight into working in the world of science. You can read interviews with famous scientists or find out more information about particular areas of science.

<http://www.connexions.gov.uk/>

Connexions offers a range of guidance and support, including careers, for 13 to 19 year olds to help make the transition to adult life a smooth one. This site is for those involved in delivering Connexions but will enable you to find your local Connexions service.

http://www.learndirect-futures.co.uk/job_profiles/jf_frameset.htm

This part of the learndirect website will enable you to access information about a wide range of careers in science and technology.

<http://www.vega.org.uk/home.html>

The main highlight of this sight is an extensive range of videos of famous scientists talking about their work.

http://www.set4women.gov.uk/set4women/careers_training/for_schools.htm

Part of the DTI website designed to encourage more women to go into science and engineering. You can order the Go for It role model posters and the Spark magazine from here.

<http://www.noisenet.ws>

NOISE aims to raise awareness of science & engineering among 16-19 year olds by making these subjects more relevant and accessible.

Apples

At any school open-days where the relevant students or their parents are likely to be present we should provide a barrel of apples. Written upon the barrel should be the words -

'Take a fresh look at the world. Tuck-in to science.'

On every one of the apples in the barrel should be a sticky label. However, instead of the usual description of the apple's variety or country of origin on the labels we see written one of the following phrases, each representing a different aspect of the science curriculum.

'Member of the rose family'

'40% hydrogen, 40% oxygen, 20% carbon'

'Newton's inspiration'

'Symbol of the information revolution'

This is intended to make the students and their parents understand that even something as mundane as an apple can be looked at and understood in a variety of ways; and that it is science that allows this breadth of outlook.