

assembly theme:

# forensic science

## introduction

An assembly can raise the profile of science in your school, and help pupils recognise the roles of science in society. The aim of the Future Morph assembly series is to help pupils become more aware of the role of science in their lives and their need for scientific understanding in the world outside school.

This assembly focuses on forensic science as a career choice. It explains that in the UK forensic science grew in importance with the discovery in 1985 of DNA profiling, and further technical and scientific developments continue to have an impact on the nature of the profession. There are a number of specialisms within the profession, and a number of different entry points for candidates. A more general point is raised – should students apply for degree courses that focus on a single profession or is it more sensible to get a broader education? It is most appropriate for use with post 16 students.

A basic speech is provided that describes the first forensic use of DNA profiling. It also explains that forensic science is an extremely popular career choice with many more forensic science graduates being trained than there are posts available. Should students apply for specialist forensic science degrees or would they be better advised to apply for more general science degrees to keep their career choices more open? A series of slides are provided to prompt discussion around different aspects of a career in forensic science.

There are three ways in which this resource could be used:

- A head teacher, head of year or science teacher could present the assembly speech.
- Pupils could use the speech as a stimulus to present their own views on the roles and responsibilities of scientists supporting the legal process, and whether the use of a DNA database has achieved the correct balance between the rights of the individual and the benefits to society.
- The presentation could be used to stimulate discussion either in a year assembly or with a form group or class.

## assembly speech

In 1986 Dawn Ashworth, 15, was found strangled and sexually assaulted in Narborough Leicestershire. A local boy was questioned over the murder and later confessed.

Three years earlier, a similar murder occurred in the same town. Police were convinced that the two incidents were linked, but their suspect denied all knowledge of the first attack. Evidence on both of the victim's bodies showed that their attacker had type A blood group, but this blood group matched about 10% of the adult male population. The police therefore needed further evidence to link their suspect to the first murder.

Leicestershire police approached Alec Jeffreys at Leicester University who in 1985 had created a technique for producing DNA profiles. In association with scientists at the Forensic Science Service a technique was developed for separating cells from the victims' tissues and was used to show that both murders had been committed by the same person. A blood sample from the suspect was used for further DNA analysis by Jeffreys and showed that the suspect was in fact innocent of both crimes. As this was the first time the DNA fingerprinting technique had been used in criminal casework, the forensic scientists were asked to confirm the results. The suspect was the first in the world to be cleared of murder through the use of DNA profiling. Without this evidence the suspect would almost certainly have been found guilty.

The police then decided to screen all of the men in the area with blood group A. 5000 men had their saliva or blood analysed to see if their DNA matched the traces found on the victims. The murderer nearly escaped by asking a friend to give blood in his name. The friend was later heard talking about the switch and eventually the murderer was arrested and sentenced to life for the two murders. His DNA profile matched that found on the two victims.

DNA is deoxyribonucleic acid. It is found in virtually all human cells and is the chemical which carries genetic information that controls all life processes. The first DNA profiling system developed by Jeffreys in 1985 needed large amounts of biological material, and used information from several different genes. Further developments have refined the technique to increase the accuracy and speed of analysis. Today, the technique is fully automated, can use a very few small cell fragments, and can discriminate to give a profile of one in a billion. The results of DNA analyses today are stored in a National DNA Database.

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In the UK employment in forensic science has grown at an unprecedented rate over the last ten years, due in part to developments like the National DNA Database, and also because the police now use forensic science to help solve more minor crimes. The 5000 forensic scientists in the UK are mostly employed by the Forensic Science Service, a branch of the Government Home Office. A smaller number are employed by commercial organisations including those who are used for testing athletes for drug use.

Recently UK universities have been providing degree courses in various branches of forensic science, and are producing about 1500 forensic science graduates each year. It has been estimated that there will be 430 graduates recruited in the next two years.

### Questions

When competition for a particular job is fierce, as in forensic science when there can be as many as 1000 applicants for a post, how do you ensure that you stand out from the crowd?

When competition for particular jobs is fierce how wise is it to choose a university course that is tailor made for one particular career?

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### Web links for careers in forensics

University of Kent offer several courses related to forensics. This is their general careers advice page for the subject:

<http://www.kent.ac.uk/careers/forensicsci.htm>

The Forensic Science Service is the main employer of forensic scientists in the UK:

[http://www.forensic.gov.uk/forensic\\_t/inside/career/c\\_faq.htm](http://www.forensic.gov.uk/forensic_t/inside/career/c_faq.htm)

The Forensic Science Society is an international professional body representing the interests of forensic scientists:

<http://www.forensic-science-society.org.uk/information/careers.html>