

Discussion points and research activities for Science students (Upper Secondary/Post 16)

These activities are linked with the Victims of T4 case study.

<http://education.hmd.org.uk/case-studies/the-victims-of-t4/read>

Please note that the tasks are only suitable for students over the age of 14. Teachers of younger students will find suitable resources on our website:

<http://education.hmd.org.uk/age-range>

Introduce the **Untold Stories** of the Victims of T4. <http://education.hmd.org.uk/case-studies/the-victims-of-t4/read> **Present** the stories in your own words then **give** students a copy of the case study and **ask** them to refer to it during the discussion. **Explain** that scientists work to find ways to help humanity. They try to use their skills to make life easier for everyone, to find ways to cure or prevent illness, to help us communicate with each other and they conduct research and experiments which make discoveries which allow us to understand the world. On rare occasions the use of science has been abused. The way the Nazis treated disabled people is an example of such misuse. The fate of the victims of T4 serves as a reminder to all students of science that their subject is a powerful discipline. It should also generate the need to understand that all scientists should use their skills in positive ways to serve humanity and protect our planet.

Ask students to think about developments in scientific knowledge and to suggest the positive contributions these have made or have the potential to make to our lives. **List** these on the board and **allow** time for students to discuss their views on each one. It is important to stress the value of science and its positive contribution to our knowledge base before shifting from the positive to any negative views.

Return to the case study and **ask** students to consider the work of the scientific and medical staff who contributed to the T4 programme. **Discuss** how and why they may have been drawn into the programme. Would T4 have been able to operate if enough medical staff had refused to take part? Some of those who worked in institutions like Hadamar claimed that they could not be held responsible for the programme because they did not participate in the actual murders. Some may argue that they are as guilty as the killers because they knew what was happening and did nothing to stop the murders. Do students agree with either argument? **Draw out** reasons for each answer.

Encourage students to examine how the Nazis manipulated scientific theories to achieve their goals. How did they use Social Darwinism to help them present their arguments? **Talk** about the development of eugenics within academic institutions during the 1930s. **Point out** that eugenics programmes were not invented in Germany. In the early part of the 20th century there was a growing interest in the 'science' of eugenics in many parts of the world including the UK and the USA. It was studied as a science in universities. There was even a eugenics society at the University of Cambridge between 1930 and 1933.

Hitler and the Nazis were able to use eugenics to claim there was scientific evidence to support their arguments for forced sterilisation and euthanasia. They also used similar 'evidence' to create race hygiene programmes which were aimed at developing a 'pure' Aryan race and wiping out those they saw as inferior. **Ask** how modern scientists could make sure that their own theories are not misused or misappropriated by different groups in order to discriminate against others? What safeguards could be put in place or are already in place?

Explain that after the war the evidence given at a trial of Nazi doctors at Nuremberg led to the development of universal ethical guidelines for any scientific research which used humans as subjects. It stressed that the needs of the individual patient or volunteer were more important than the aims of the scientists carrying out the experiment. This was called the Nuremberg Code and is one of the most important developments in scientific ethics. <http://www.who.int/bulletin/volumes/85/8/07-045443/en/index.html>

Challenge students to suggest three reasons why it is important for modern scientists to follow a code of ethics.

Point out that 66 years have passed since the defeat of the Nazis and during that time there have been huge advances in science, medicine and technology. Sometimes scientific discoveries make headlines and give rise to ethical debates. **Ask** whether students have heard of any recent scientific work which has faced ethical challenges in the media. Today some people have concerns about scientific work for the Human Genome Project. Are their worries justified? **Ask** students to consider that as scientists make new discoveries about human genes and their connection to specific conditions is there a danger that a new form of eugenics could appear? Could people use scientific research to make judgements about the worth of individual human lives? Examples to **discuss** could include whether science could influence insurance companies and the rate they apply to premiums ie should insurers be given the results of any genetic tests which show that a person might develop an illness later in life and use that to determine the cost of issuing a policy? As work on the

Human Genome Project continues to develop and our knowledge grows how can scientists and society as a whole protect individuals from discrimination?

Based on what students have heard in the **Untold Stories** of the Stolen Lives of the Victims of T4 and what they know about the Human Genome project **find** out what students think would be an essential inclusion in ethical guidelines for 21st century science?

Suggestions for joint projects with other subject areas

Students in Citizenship and Religious Education/Studies may also be working on the Untold Stories of the victims of T4. <http://education.hmd.org.uk/case-studies/the-victims-of-t4>

Students in all these disciplines could work through their own discussion questions and then come together to share their findings or they could exchange activities and discover whether they approach and answer the questions in similar ways.