

Lesson 3: Alzheimer's and Memory Project

AIM	To conduct a research project.
OBJECTIVES	To enable students to gain an understanding of what role research plays in the development of science. To enable students to gain insight and knowledge of the issues surrounding Alzheimer's disease and memory.
NATIONAL CURRICULUM LINKS	<p>How Science Works</p> <ul style="list-style-type: none">- 4b: consider how and why decisions about science and technology are made, including those that raise ethical issues, and about the social, economic and environmental effects of such decisions. <p>AQA</p> <ul style="list-style-type: none">- 10.8: Societal aspects of scientific evidence The uses of science and technology developments can raise ethical, social, economic and environmental issues.;- 10.9: Limitations of scientific evidence. <p>Twenty First Century</p> <ul style="list-style-type: none">- Module B2: Keeping Healthy;- Making decisions about science and technology (Idea about Science). Personal and social decisions require an understanding of the science involved but also knowledge and values beyond science. In this module, students consider particular ethical issues arising in modern medicine, for example the right of individual choice versus social policy, illustrated through vaccination policy. <p>AO1 Knowledge and understanding</p> <ul style="list-style-type: none">- Demonstrate understanding of the power and limitations of scientific ideas and factors affecting how these ideas develop;- Draw on existing knowledge to show understanding of the benefits and drawbacks of applications of science.

Alzheimer's and Memory Project

Project overview:

This project should be run over a week's worth of lessons. Students will need some time with internet access and time in the library. It has been developed to encourage independent learning. The following sheets are as handouts for the student. They explain in student-friendly language exactly what is expected of them. Students will need to work in groups of no more than four.

Brief for students:

You are a group of well-known scientists. You have just developed a drug that will slow down the effects Alzheimer's disease. You must present your findings to the pharmaceutical company who you hope will make and market the drug. You need to hand in a written report and give a verbal presentation to the board of directors (the people in your class and your teacher.) Your report and presentation must include some vital details. These are listed below. The director of the pharmaceutical company will give you a deadline for the report and presentation.

The written report:

Your written report must include your background research on the project and your knowledge on memory.

You should present your research in the following way:

1. What is Alzheimer's disease?
2. What causes Alzheimer's disease and how does it work?
3. How does the memory work?
4. What are possible consequences of this work?

The presentation:

You will be presenting your work to the class and your teacher. You should be in role as a leading scientist, this means that you must be confident and know what you are talking about. It is not appropriate to just read out your report. You should select the important points, your presentation should be no longer than five minutes.

Help, Guidance and Advice

The written project:

What is Alzheimer's? This should include how the disease affects sufferers and their family? How was it discovered? What are the symptoms?

What causes Alzheimer's? How is Alzheimer's passed on? Is there any evidence that it is hereditary? How does it affect the brain?

What are the possible consequences of this work? This is really pre-empting the question that the pharmaceutical company may ask. If we develop drugs that aid the memory, do we allow these drugs to be taken by students just before an exam? How much do we want to remember? If we can develop drugs that aid the memory, can we develop drugs that help people forget? Should war criminals be allowed to take them to help them forget that they killed hundreds of people? What happens if we all have 'selective memory'?

The presentation:

You should summarise the important points from each of the written report sub-headings and use these to form your presentation. You will want to consider the final question in more detail as you will be asked questions about that, and you will need to have a considered point of view and some definite answers.

- Be confident
- Use prompt cards don't just read your report
- Rehearse your presentation
- Make sure you know your facts

Useful Websites:

www.alz.org

www.alzheimers.org.uk

http://ninds.nih.gov/health_and_medical/disorders/alzheimersdisease_doc.htm