

## G634: Applications of Biotechnology – Sample Assignment A1

<b>Unit Name:</b> Applications of Biotechnology	<b>Unit Number:</b> G634
<b>Assignment Title:</b> Public Information Booklet: Science Behind Genetic Engineering	<b>Assignment Number:</b> G634 Sample Assignment A1
<b>Date Set:</b>	<b>Due Date:</b>
<b>Assessment Objective(s):</b> AO2(a)	

### Assignment Brief:

Genetic engineering is the alteration of genetic code by artificial means and is therefore different from traditional selective breeding. Genes, which are made of DNA, contain the instructions according to which cells produce proteins; proteins in turn form the basis for most of a cell's functions. Genetic engineering makes it possible to mix genetic material between organisms that could never breed with each other.

It is a widely discussed and controversial topic and it is therefore important that the science behind genetic engineering is understood.

Your task is to produce information that clearly explains the main biological topics related to the science of genetic engineering.

**Task:**

Carry out your research using several different sources and put together a booklet with the title:

**'Do you understand the science behind genetic engineering?'**

To help you, you could and include the answers to the questions:

- what is genetic engineering?
- how does it work?

You could include topics such as:

- the genetic code
- protein synthesis inside the cells
- use of restriction enzymes to produce sticky ends
- use of DNA ligase to produce recombinant DNA strands
- use of viruses and plasmids
- PCR (polymerase chain reaction) – scientific technique
- electrophoresis.

**In order to gain the higher marks check you have:**

- selected relevant material from a variety of sources
- recorded the research sources you have used
- presented your booklet in a clear and logical way that is easy to understand.

**[ Max marks possible for this task: 5 ]**

**Resources:**

A level biology text books.

[www.biotechnologyonline.gov.au/biotechnologyonline/topitems/resources.html](http://www.biotechnologyonline.gov.au/biotechnologyonline/topitems/resources.html)

[www.beep.ac.uk/content/index.php](http://www.beep.ac.uk/content/index.php)

Genetic engineering is a very controversial topic – use resources found on the Internet with care.