

OCR (B) Biology GCSE

B7.4 - How do science and technology impact society?

Flashcards

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Give examples of applications of science that have had a positive impact.



Give examples of applications of science that have had a positive impact on society.

- Vaccines.
- Fertility treatments such as IVF.
- Fertilisers to improve crop yields.
- Genetic engineering e.g. to make plants resistant to pesticides and to produce insulin from bacteria.
- Monoclonal antibodies e.g. used in cancer treatment.



Give examples of scientific applications that have had unintended negative impacts.



Give examples of scientific applications that have had unintended negative impacts.

- Reduced biodiversity resulting from the use of pesticides, insecticides and fertilisers.
- Greenhouse gas emissions from the burning of fossil fuels which contribute to climate change.



How is the size of a risk estimated?



How is the size of a risk estimated?

The size of the risk is estimated based on the chance of it occurring in a large sample over a period of time.



Suggest why an individual may be willing to accept a risk.



Suggest why an individual may be willing to accept a risk.

A person is usually more willing to accept the risk if the effects of it are short-term, rather than long-term.



What is the difference between a
perceived risk and a calculated risk?
(Higher)



What is the difference between a perceived risk and a calculated risk? (**Higher**)

A perceived risk refers to a person's perception of how large the risk is, whereas the calculated risk is the actual / statistically estimated risk. The perceived risk may differ from the calculated risk - for example, a person's perception of the risk of flying in an aeroplane may be higher than the calculated risk.



What does 'ethical implication' mean in terms of science?



What does 'ethical implication' mean in terms of science?

If an area of science has an ethical implication, it means that we have to ask the question of whether the work is morally right or wrong, and consider it from an ethical standpoint.



Give examples of scientific research that may have ethical implications.



Give examples of scientific research that may have ethical implications.

- Gene technology.
- The use of embryonic stem cells for research or medical treatments.
- Using placebos in clinical trials.



Outline the factors that have to be considered when making decisions about scientific work.



Outline the factors that have to be considered when making decisions about scientific work.

- The risks to individuals or groups.
- The benefits to these same individuals or groups.
- The ethical implications of the work.
- The cost.



Give reasons why different decisions may be made on the same issue.



Give reasons why different decisions may be made on the same issue.

The people deciding may have different personal circumstances, social or environmental contexts, or economic positions.

