



PARSEL teaching –learning materials compiled by the consortium
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Shall we create new organisms? (Students)

Instructions

With the aim of evaluating the impact of different applications of genetic engineering on our society, a committee was constituted, formed by several citizens: 1) a doctor; 2) a veterinarian; 3) a farmer; 4) a member of an environmental group; and 5) an animal rights advocate.

This committee must decide on the attribution, or not, of a large funding from our community to research in this field. Should it decide positively, it must then define the terms, or conditions, of this funding.

Procedure

1. Compose groups of 5 persons.
2. Each element of the group will represent one of the roles with the aim of writing up a report (maximum 3 A4 pages) that summarizes his/her informed expert opinion as to attributing the funding or not.
3. Use the given websites to gather information.
4. After discussing the arguments presented by the different members, the group must: a) write up a joint report that justifies the final decision regarding the attribution of funding; b) choose the way of presenting the outcome (PowerPoint presentation, poster, etc.).
5. The conclusions drawn by the different groups will be presented and discussed with the whole class.

Role-playing

As mentioned above, each element of the group must take on a different role. Following are some issues that must be discussed:

- Doctor – What is the potential of genetic engineering in treating and preventing human diseases? What are the long-term effects of the intake of genetically altered products?

- Veterinarian – What is the impact of these technological innovations on livestock (animal production)? How about on animal species? Is modifying the genetic patrimony of animals permissible?
- Farmer – What is the impact of these technological innovations on agriculture? How about on vegetal species? Is modifying the genetic patrimony of plants permissible?
- Member of an environmental group – What are the consequences of releasing into the environment genetically modified organisms? Which criteria should be adopted in order to avoid serious environmental imbalance?
- Animal rights advocate – Is the genetic manipulation of animals morally acceptable? Is transferring genes between different animals permissible? Is it permissible to introduce in animals genes that are responsible for human diseases?

List of useful Websites

Ifgene, the International Forum for Genetic Engineering - <http://www.ifgene.org/>

HUM-MOLGEN - Communication Forum in Human Genetics - <http://hum-molgen.org/>

European Initiative for Biotechnology Education - <http://www.eibe.info/>

European Society for Agricultural and Food Ethics (EurSafe) - <http://www.eursafe.org/>

Genetics for a New Generation - <http://www.ansci.cornell.edu/usdagen/usdamain.html>

Genetic engineering on Wikipedia - http://en.wikipedia.org/wiki/Genetic_engineering

For assessment, see tables presented in the genetic engineering_assessment.doc