

Humanities I.

Mrs. Van Zant

Re-designing Man: Science + Human ValuesUnit 1. Corrections and Carbon Copies.

Content Summary:

Excerpts from Aldous Huxley's Brave New World introduce the idea of man's being able to alter himself anatomically to be able to perform specific tasks. This is followed by a brief description of the normal process of human development, including the role of A. N.A., cell fertilization and division, and the genetic code. Parthenogenesis is explained - or reproduction from a single female egg cell; cloning, or exact animal and human duplication. Social and ethical questions relating to cloning and parthenogenesis, are explored.

What should be the status of human clones?
 Why should they be created?
 How might asexual reproduction affect male-female/ family relationships?

Modern genetic engineering, including the use of viruses to repair defective genes, is described. The unit concludes with a speculation about re-designing man for space travel, and probing questions about the possible future uses of genetic engineering with respect to the nature of man.

Objectives:

Students should be able to list and discuss values that will be affected by cloning, parthenogenesis, and other forms of genetic manipulation.

Students should be acutely aware of the immediate and potential impact of advances in genetics and related areas on their own lives.

Students should be aware that developments in genetics are forcing highly significant decisions on individuals and society.

Students should be able to explain, compare and contrast three forms of reproduction: sexual, parthenogenic; clonal.

Social/Humanistic Questions:

1. Many scientists hold that there should be no limits on scientific inquiry, but others argue that there is such a thing as dangerous knowledge. An example of something debated this way in the past was the atomic bomb. Does the scientist have an unlimited right to inquiry? Does "it can be done" automatically translate into "it should be done?" or into "it will be done?" Are cloning and parthenogenesis examples of "dangerous" knowledge?
2. If we are able to construct any kind of man we wish through genetic engineering, what kind of man will we construct? Will we match man to environment? To function?
3. Our ethics and values are related to our concept of human nature. Will that concept change? Will our values change? What are some of the concepts of human nature that might be threatened or enhanced by new scientific developments? How important, for example, is the idea of individuality, or the fact of sexual reproduction to the nature of man?
4. If the techniques described in this filmstrip were used, what might be the effects upon social institutions, such as the family, religion, government, education, and the economy?
5. This filmstrip describes several scientific techniques that can be applied to individual human beings. Whose interests should be considered paramount in deciding to apply these techniques? The individual? or society's? Are these techniques more or less acceptable if used only to benefit the individual? If used to benefit society?
6. Cloning, parthenogenesis, and certain forms of genetic engineering have thus far been tried in experiments with animals. But if they are to have human implications, they must eventually be tried on people. What rules should govern the giving of consent for such experiments?
7. If genetic techniques described in this filmstrip prove very expensive and difficult to perform, how will their use be regulated? Will government control their use? The private sector? Will wealth determine who participates? Would your answers change if the word "should" were substituted for "will" (i.e. "Should government control") Should these questions be answered before research goes ahead?
8. Can you list any reasons why cloning and parthenogenesis might be necessary?

Scientific Questions:

1. Genetic surgery represents the most extreme form of artificial selection. What is the role of natural selection in evolution, and what might be the evolutionary effects of widespread use of artificial selection?
2. If men and women did not procreate, the species would become extinct. Thus mating is necessary for survival. If asexual reproduction is ever widely accepted and the biological necessity for such procreation is removed, will the sexes still choose to live together and have families?

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