



## A Question of Inheritance

Guide for Curriculum Unit 90.06.05  
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The field of human molecular genetics obviously has great potential for research into the human genome and for application to prevention of disease. This curriculum unit stresses the nature of genes and how they can influence human development. Emphasis is placed on the structure and chemical nature of a gene. With such background knowledge of genes and how they operate, an introduction to the mutation theory is discussed. In so doing, the nature of chromosomes and abnormalities is examined. A further view of how the differences in the chromosomes and hormones of both male and female can influence the pattern of expression of many genes is also explored. To be considered are two basic types of patterns of inheritance involving autosomal and X-linked genes. Very important to be explored are the effects of genetic and environmental factors that can cause a large number of abnormalities or disorders. Three main types of disorders will be recognized: a) single-gene disorders, b) chromosome disorders, and c) multifactorial disorders.

Techniques for preventing such diseases, pre-natal screening and treatment for the disorders, are discussed. It is with hope that the human genome will be completely mapped, more and better methods of prevention will be developed, and the replacement of some defective genes will become possible.

(Recommended for Life Science and Introductory Biology, grade 7)

### **Key Words**

*Mitosis Meiosis Cells Biology Human Genetics Reproduction*

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