



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
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Genes...The Nature of Human Development

Guide for Curriculum Unit 82.07.04
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This curriculum unit is designed to provide, in part at least, some insights of the role of genes in the developing human. It is for those students who have had a basic introduction to genetics and a fair amount of information about the male and female reproductive systems. The data contained here are for students in courses of Health, Human Physiology and Human Biology and others who may wish to increase their knowledge about the factors, particularly genetic, that influence the development of a human. The unit will present first a review of the process of gametogenesis, the preparation of egg and sperm. It is important to know how during meiosis the genes can be separated, scrambled and perhaps become disordered and finally passed on in the egg or sperm. A new view of meiosis is shown in oogenesis. Having established the "What and How" of the genes, the next step will be to discuss the chemical nature and arrangement of the DNA that makes up the genes. Then two basic and general types of patterns of inheritance involving autosomal and X-linked genes will be presented. With a background then of the mechanism by which genes are sorted, made up and paired up, the student will explore some of the disorders and defects that can occur when nature's plan becomes imperfect. It would be most despairing however, to conclude on such a note. Therefore, methods of preventions (prenatal screening) and treatment for the disorders will be noted. Objectives for lessons, activities for each part as well as review and test items will be included. It is hoped that this presentation will provide a good basis for sound and informed choices that students may elect in the future. With new advances in technology, a pregnancy may not be a question of doing what comes naturally. Nature may receive an assist in the way of amniocentesis and ultra-sound and karyotyping and more. These procedures may require some heavy decision-making,

(Recommended for 11th and 12th grades Human Physiology, Health, and Laboratory Technology I, 10th grade Biology (some parts) and 9th grade Freshman Science (some parts))

Key Words

History Genetics Biology Human

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