

The Biology 30 Curriculum

In Science students learn about the physical world, ecology and technology. Studying science also helps develop an understanding of the many applications of science in daily life. The major ideas developed in this course are change, diversity, equilibrium and systems. Biology 30 consists of four units of study that include Systems Regulation and Development, Reproduction and Development, Cells, Chromosomes and DNA, as well as Change in Populations and Communities.

The systems and regulations unit focuses on chemical and electrical systems that control body processes to maintain balance. This unit uses the human organism as a model for studying the equilibrium between an organism's internal and external environment can be sustained by metabolic or behavioral means. These human systems maintain a level of balance through hormone production. Studying the relationship between the neural and endocrine systems helps student to understand the way in which the central and peripheral nervous systems work and how they are able to sense the environment and respond to it. They will learn that this ability is essential in maintaining equilibrium.

The reproductions and development systems unit focuses on the processes of reproduction and development. This unit studies the concept that species must reproduce themselves to ensure their survival. The processes associated with reproduction and development such as sexual and asexual reproduction are reviewed here. Humans will be used as an example. Students will learn that change can occur in the reproduction by different hormones, gamete production and the fusing of the zygote.

The cells, chromosomes and DNA unit focuses on the mechanisms for passing on genetic information and causing variation. In this unit, students examine the cell and molecular biology of mitosis and how it has limits on producing variety. They will also study meiosis; a way which organisms can have diversity in their offspring. The timing and location of meiosis is discussed. The studies of classical genetics are reviewed to show how phenotypes can change from generation to generation. DNA, RNA, and protein productions is reviewed.

The change in populations and communities looks at change as illustrated by the genetics of populations, equilibrium in populations, and at the community systems in which populations exist. This unit introduces students to genetic principles that are used to analyze population systems. As an example, students will study the Hardy-Weinberg equilibrium chart. Population growth and growth strategies are talked about. Populations of different organisms exist in communities that change over time as a result of natural or artificial events.

These are the four basic topics that will be covered in Biology 30. The student will be expected to fully understand and be able to demonstrate their understanding through a series of labs, tests and projects. A diploma exam will be completed at the end of the course.

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About the Author

Author Barney Garcia is a proud contributing author and enjoys writing about many different topics. Please visit my web sites @ <http://www.online-science-education.info> and <http://www.health-education-station.info>