
SYNOPSIS:

In this program you'll learn how computers, robotics and virtual reality are being used to increase mental and physical capabilities. See how innovative design techniques for sports and recreational equipment are allowing us to pursue a variety of activities – whether on the ground, in the sea or in the air.

CURRICULUM UNITS:

Biology
Biophysics
General Science
Health
Physical Education
Physiology
Psychology

CAREER OPPORTUNITIES:

Athlete
Athletic trainer
Biologist
Chemist
Computer Engineer / Software Designer
Exercise Physiologist
Sports Physician
Sport Psychologist

PROGRAM OVERVIEW:

Applying science and technology to sport and recreational activities is becoming more popular throughout the world. Computers make it possible to design lighter, stronger and more efficient fitness and recreation equipment. Technology also allows outdoor activities such as skiing and sailing to be practiced.

ISSUES & CRITICAL THINKING:

- 1) After showing the program, ask your students the following questions:
 - a) Describe the different ways robots are being used for teaching and training purposes.
 - b) What can be learned by studying biomechanics or body motion?
 - c) Give examples of how computer design is improving sports and recreational equipment.
 - d) Describe the different ways science is making it safer to explore our planet's different environments.

GLOSSARY:

BIOMECHANICS- The study of human movement or body motion.

MICROPROCESSOR- Integrated circuit that contains the entire central processing unit of a computer on a single chip.

SENSORS- A device that reacts to physical stimulation or movement.

SIMULATOR- A machine that reproduces conditions likely to occur during actual performance.

THREE-DIMENSIONAL- Existing in three dimensions, having a measure of spatial extent, especially width, height or length.

VISUALIZE- Forming a mental image of something.

VIRTUAL REALITY- A computer simulation of a real or imaginary system that enables a user to perform operations on the simulated system and shows the effects in real time.

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Genetic Engineering,
Biotechnology



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