CINCINNATI ZOO & BOTANICAL GARDEN

Indiana Academic Standards Addressed By Zoo Program

SLIDE SHOW PRESENTATION — SAVING SPECIES WITH SCIENCE

Program description:
Learn how scientific technology is being used to conserve endangered plant and animal species. Students will experience real-life examples of how CREW scientists apply scientific technologies to local and worldwide projects to promote the health and conservation of diverse wildlife.

Indiana Science Standards addressed by this program:

GRADES 6-8th

Standard 1: The Nature of Science and Technology

Scientific Inquiry

6th Grade

6.1.2	Give examples of different ways scientists investigate natural phenomena and identify processes all scientists use, such as collection of relevant evidence, the use of logical reasoning, and the application of imagination in devising hypotheses and explanations, in order to make sense of the evidence.
6.1.3	Recognize and explain that hypotheses are valuable, even if they turn out not to be true, they lead to fruitful investigations.

The Scientific Enterprise

6th Grade

6.1.4	Give examples of employees who hire scientists, such as colleges and universities, businesses and industries, hospitals, and many government agencies.
6.1.5	Identify places where scientist work, including offices, classrooms, laboratories, farms, factories, and natural field settings ranging from space to the ocean floor.

7th Grade

7.1.5	Identify some important contributions to the advancement of science, mathematics, and technology that have been made by different kinds of people, in difficult cultures, as different times.
7.1.6	Provide examples of people who overcame bias and/or limited opportunities in education and employment to excel in the fields of science.

Technology and Science

6th Grade

6.1.7	Explain that technology is essential to science for such purposes as access to outer space and other remote locations, sample collection and treatment, measurement, data collection and storage, computations, and communication of information.
6.1.9	Explain how technologies can influence all living things

7th Grade

7.1.7 Explain how engineers, architects, and others who engage in design and technology use scientific knowledge to solve practical problems.

8th Grade

8.1.7 Explain why technology issues are rarely simple and one-sided because contending groups may have different values and priorities.

8.1.8 Explain that humans help shape the future by generating knowledge, developing new technologies, and communicating ideas to others.

Standard 4: The Living Environment

Diversity of Life

7th Grade

7.4.3 Explain how, in sexual reproduction, a single specialized cell from a female merges with a specialized cell from a male and this fertilized egg caries genetic information from each parents and multiplies to form the complete organism.

BIOLOGY I

Standard: Principles of Biology

Ecology

B.1.38 Understand and explain the significance of the introduction of species, such as zebra mussels, into American waterways, and describe the consequent harm to native species and the environment in general.

ENVIRONMENTAL SCIENCE, ADVANCED

Standard 1: Principles of Environmental Science

Environmental Systems

Env.1.4 Understand and explain that human beings are part of Earth's ecosystems and give examples of how human activities can, deliberately or inadvertently, alter ecosystems.

ADVANCED LIFE SCIENCE: ANIMALS (L) STANDARDS

Standard 3: Development and Function of Animal Organ Systems

Reproduction

AS.3.20 Discuss the social implications of reproductive and genetic technologies used in animal husbandry (e.g. embryo transfer, artificial insemination, gene transfer, cloning).

Standard 4: Animal Genetics and the Environment

Evolution

AS.4.11 Describe ways that animals prevent inbreeding, and discuss how genetic diversity is preserved among both herds and wild animals. Explain the disadvantages of lack of diversity in the wild and domestic animals.