

Activity
DEVELOP

Captive Breeding and Species Survival

What are the pros and cons of captive-breeding programs and species-survival plans?

Activity Overview

Students research captive-breeding programs and species-survival plans and explore the pros and cons of each.



40 minutes

Grades 9-12

Ages 14-18

VIEW THE RESOURCES FOR THIS ACTIVITY

Photograph by Gary Uhler, My Shot



Activity
Overview



Smithsonian
Natio...



Association of
Zo...



Venn Diagram

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Directions

1. Have students research captive breeding programs and species-survival plans.

Have small groups use the Smithsonian and Association of Zoos and Aquarium websites to research and answer the following questions:

- What is a **captive-breeding program**, and what are the goals of this type of program? (Captive breeding programs **breed** endangered species in zoos and other facilities to build a healthy population of the animals and, sometimes, to reintroduce endangered species back into the wild.)
- What is a **species-survival plan**, and what are the goals of this type of plan? (Species-survival plans coordinate with zoos around the world to bring species together for breeding that ensures **genetic diversity**.)
- How can **captive-breeding programs and species-survival plans contribute to biodiversity and the health of ecosystems**? (They ensure large, healthy, and genetically diverse populations that otherwise would not exist.)

2. Have students list positive and negative aspects of each in a worksheet.

Explain to students that the use of captive breeding programs and species-survival plans is controversial and they will explore both sides of the issue. Distribute the Venn Diagram worksheet and ask students to list pros, cons, and specific examples of each as they explore the following questions:

- What are some difficulties with captive breeding?
- What are the arguments against captive breeding programs?
- In what situations are artificial habitats beneficial?
- In what situations might they be harmful?

3. Discuss students' findings as a class.

Have a whole-class discussion about students' findings. Ask: *What is your opinion about whether these programs and plans are good or bad? Do the positives outweigh the negatives, or vice versa?*

Informal Assessment

Have students summarize both scientific and moral arguments on the topic of captive breeding.

Extending the Learning

Have students research and report on the genetic and behavioral difficulties that zoos often face when trying to breed animals in captivity. Students can explore these questions: *Why do zoos often transport their animals to other zoos that are hundreds or even thousands of miles away in order to breed? Why might two healthy animals of opposite sexes fail to reproduce?*

Objectives

Subjects & Disciplines

Geography

- Human Geography
- Physical Geography

Science

- Biological and life sciences

Learning Objectives

Students will be able to:

- explain how captive-breeding programs and species-survival plans contribute to biodiversity and the health of ecosystems
- list the positive and negative aspects of each

Teaching Approach

- Learning-for-use

Teaching Methods

- Discussions
- Research

Skills Summary

This activity targets the following skills:

Critical Thinking Skills

- Remembering
- Understanding

Geographic Skills

- Asking Geographic Questions

Connections to National Standards

National Geography Standards

- Standard 14:
How Human Actions Modify the Physical Environment

National Science Education Standards

- (9-12) Standard C-4:
Interdependence of organisms

Preparation

What You'll Need

Materials You Provide

- Pencils
- Pens

Resources Provided

The resources are also available at the top of the page.

Supporting Resources

- Venn Diagram

Websites

- Smithsonian National Zoological Park: Endangered Species Science
- Association of Zoos and Aquariums: Species Survival Plan Program

Required Technology

- Internet Access: Required

- Tech Setup: 1 computer per small group

Physical Space

- Classroom

Grouping

- Small-group instruction

Background & Vocabulary

Background Information

Captive-breeding programs breed endangered species in zoos and other facilities to build a healthy population of the animals. Species-survival plans coordinate with zoos around the world to bring species together for breeding that ensures genetic diversity.

Prior Knowledge

- None

Recommended Prior Activities

- Captive Breeding Case Studies
- Introduction to Captive Breeding

Vocabulary

Term ▼	Part of Speech ▼	Definition ▼	Encyclopedic Entry ▼
biodiversity	<i>noun</i>	all the different kinds of living organisms within a given area.	
breed	<i>verb</i>	to produce offspring.	
captive-breeding program	<i>noun</i>	plans, research, and work done by an organization, such as a zoo, to control reproduction of rare species in that organization's facilities (not in the wild).	
ecosystem	<i>noun</i>	community and interactions of living and nonliving things in an area.	
genetic diversity	<i>noun</i>	difference or variety of units of inheritance (genes) in a species.	
species-survival plan	<i>noun</i>	wildlife management and conservation program run by zoos and aquariums.	

For Further Exploration

Websites

- IUCN: Red List of Threatened Species
- U.S. Fish & Wildlife Service: Endangered Species Program

Credits

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