



### ENVIRONMENTAL SCIENCE CAREERS

# PLANNING A SELF-GUIDED FIELD TRIP

A FIELD TRIP AT THE COLUMBUS ZOO AND AQUARIUM is a great way to extend the walls of your classroom and apply the concepts you are teaching your students. With a little pre-planning, you can make this an experience your students will appreciate for a lifetime. Before diving into the materials on the next few pages, here are some tips to make your field trip experience even more successful.

- **Prepare students for the trip:** This packet contains an activity you can do with your students before your field trip.
- **Prepare chaperones for the trip:** The activities are designed to be led by chaperones with varying experience levels. We recommend you have the chaperones familiarize themselves with the materials before the field trip.
- **Bring it all back together:** After your field trip, reinforce the concepts the students learned by doing the final activity in the packet.

The purpose of this self-guided field trip activity packet is to help students understand how Zoo careers relate to environmental stewardship. In addition, students will recognize how environmental stewardship is linked to environmental issues. We encourage teachers to utilize all five activities chronologically to provide students a complete learning experience centered around a meaningful field trip.

#### 5E Lesson Plan

The self-guided field trip activities are structured around the 5E Lesson Plan model, commonly used in science education:

**Engage** - sparking interest in a topic

**Explore** - student-led investigation of concepts

**Explain** - adult-led clarification of concepts

**Extend** - student-led application of concepts

**Evaluate** - opportunity to demonstrate understanding of concepts







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## Outcome & Objectives

This self-guided field trip is designed to meet the following behavioral outcome: Get involved with and support local and global conservation organizations like the Zoo, The Wilds and other partners. By participating in this program, students will be able to:

- Feel interested in pursuing a job related to wildlife conservation and/or the environment
- Believe every job at the Columbus Zoo and Aquarium contributes to environmental stewardship
- Learn how environmental stewardship manifests itself in many ways through the wide range of careers at the Zoo
- Think about their choices and how they affect the environment before they act
- Identify, clarify and express their own beliefs and values regarding the environment

## Ohio State Science Standards

Each of the activities in this self-guided field trip activity packet addresses certain components of the Ohio State Science Standards. When used in conjunction with other science-based learning experiences, the activities will help classroom teachers achieve the following Ohio State Science Standards with their students:

- EVS.912.5c** Recognize what makes a resource renewable or non-renewable.
- EVS.912.5b** Recognize that some environmental problems are global (e.g., water or air pollution, extinction, deforestation).
- EVS.912.5a** Explain how resources can be preserved to reduce the impact on Earth (e.g., planting new trees after chopping down others).
- EVS.912.6c** Recognize that humans can change their environment.
- EVS.912.6b** Identify ways humans have changed the global environment (e.g., water quality, air quality, waste management).
- EVS.912.6a** Describe a change or preservation in the environment caused by people around the world deforestation and replanting of trees.

*And don't forget to look for Zoo volunteers throughout your field trip! They are a wealth of knowledge and always happy to answer questions and share their love of the Zoo and our animals.*





GRADES  
9-12



ENVIRONMENTAL SCIENCE CAREERS  
SEQUENCE OF ACTIVITIES

Suggested sequence of activities to support a self-guided field trip focused on environmental science careers for 9th through 12th grades. See following pages for detailed descriptions of each activity.

5 STEPS TO A MEANINGFUL FIELD TRIP	DESCRIPTION OF ACTIVITY	ESTIMATED TIME	MATERIALS NEEDED
<p><b>ENGAGE</b> with a pre-visit activity in your classroom</p>	<p><b>Jobs with a Global Impact:</b> Preliminary investigation of Zoo jobs.</p>	<p><b>30-45</b> minutes</p>	<ul style="list-style-type: none"> <li>• Internet access</li> </ul>
<p><b>EXPLORE</b> at the Zoo within a habitat area</p>	<p><b>Who's at the Zoo?:</b> Creation of a comic strip to describe how volunteers are environmental stewards.</p>	<p><b>45-60</b> minutes</p>	<ul style="list-style-type: none"> <li>• Who's at the Zoo? Worksheet</li> <li>• Pen/pencil</li> </ul>
<p><b>EXPLAIN</b> specific concepts</p>	<p><b>Environmental Stewards in Action:</b> Gallery walk to showcase environmental stewardship examples.</p>	<p><b>15-20</b> minutes</p>	<ul style="list-style-type: none"> <li>• Comic strips produced by students in previous activity</li> </ul>
<p><b>EXTEND</b> learning by applying concepts to another habitat element</p>	<p><b>Enviro-Video/Enviro-Skit:</b> Creation of videos or skits highlighting environmental issues.</p>	<p><b>30-45</b> minutes</p>	<ul style="list-style-type: none"> <li>• Video cameras on phones (one per group)</li> <li>• Paper/pens to write skits</li> </ul>
<p><b>EVALUATE</b> during a post-visit activity/discussion back in the classroom</p>	<p><b>Career Challenge:</b> Opportunity to link environmental issues to positive environmental actions.</p>	<p><b>15-30</b> minutes</p>	<ul style="list-style-type: none"> <li>• Videos or skits produced by students in previous activity</li> <li>• A/V equipment to show videos or props for skits</li> </ul>





# JOBS WITH A GLOBAL IMPACT

WHAT?

Preparation for field trip, learning about career options at the Zoo

WHERE?

In your classroom

WHEN?

Prior to the Zoo field trip

WHY?

To introduce the idea that the Zoo is host to many different kinds of jobs, all of which support the environment

HOW?

Direct students to this statement on the Zoo's website:  
**COLUMBUSZOO.ORG/JOB-SEARCH**

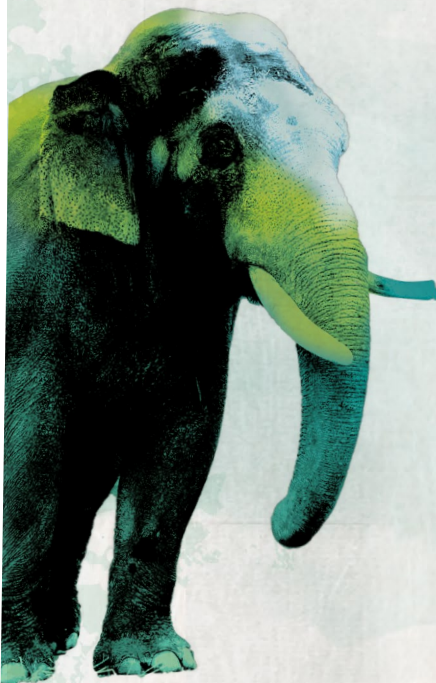
*“At the Columbus Zoo Family of Parks, our mission is to connect people and wildlife. Whether it’s right here in Columbus, Ohio, or in Central Africa, we are committed to educating, entertaining, and engaging communities of all stripes. As part of our team, you’ll play an important role in helping us to achieve our mission.”*

Brainstorm a list of jobs that seem to fit the above statement. Then watch several of the following clips to learn about some jobs and staff from different areas of the Zoo:

- A. Animal Nutrition Center (from 12:46-14:20): [youtu.be/XO-bz\\_A0m4Y](https://youtu.be/XO-bz_A0m4Y)
- B. Zoo educator teaching a virtual class: [youtube.com/watch?v=3Guk8yPZQhE](https://youtube.com/watch?v=3Guk8yPZQhE)
- C. Penguin Training: [youtube.com/watch?v=0nWtYhD0t\\_k](https://youtube.com/watch?v=0nWtYhD0t_k)
- D. Baby Elephant Enrichment: [youtu.be/4pnWwo2kxf8](https://youtu.be/4pnWwo2kxf8)
- E. Animal Dental Care: [youtube.com/watch?v=rj1DEqhb-Bc&t=95s](https://youtube.com/watch?v=rj1DEqhb-Bc&t=95s)
- F. Field Conservation, hellbender release: [youtu.be/IW4AGR-97hQ](https://youtu.be/IW4AGR-97hQ)
- G. Exhibit Design: orangutan habitat: [youtu.be/-uqcErt6BRg](https://youtu.be/-uqcErt6BRg)
- H. Gorilla Heart Health: [youtube.com/watch?v=aMhSYt7OC44](https://youtube.com/watch?v=aMhSYt7OC44)
- I. Becoming a Zoo Vet- Dr. Jimmy Johnson Interview: [youtube.com/watch?v=iG485M7\\_XOU](https://youtube.com/watch?v=iG485M7_XOU)

Discuss how the featured jobs might also fit with the “global impact” statement.

Explain all of the ways employees help meet the Zoo’s mission are examples of “environmental stewardship;” in other words, doing something positive for the environment.







# WHO'S AT THE ZOO?

At Zoo

WHAT?

Discussion on how Zoo careers relate to environmental stewardship

WHERE?

Throughout the Zoo

WHEN?

During the Zoo field trip

WHY?

To collect examples of environmental stewardship from across many different fields

HOW?

Send students to explore the Zoo, looking for examples of ways employees and volunteers might do something positive for the environment while they work. Direct students to find at least one Zoo volunteer and ask them the following question:

**HOW DOES VOLUNTEERING AT THE ZOO MAKE YOU FEEL CONNECTED TO THE ENVIRONMENT?**

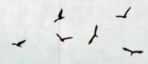
Remind students to be courteous when approaching Zoo volunteers. They should introduce themselves and explain they are working on a class assignment related to environmental science careers. Volunteers are in uniform and have name tags identifying them as Zoo representatives.

Share information about the opportunity to volunteer at the Zoo:

## COLUMBUS ZOO AND AQUARIUM'S ZOOAIDE PROGRAM

The Columbus Zoo and Aquarium's ZooAide program is comprised of teens who demonstrate natural leadership skills, a comprehensive knowledge of animals and a high degree of professionalism and emotional maturity. Designed for teens entering grades 8-12, the ZooAide program offers a unique look at the different aspects available to those interested in pursuing opportunities in a conservation field. Because of health and safety reasons, direct animal contact is minimal. An emphasis is placed upon the customer service side of zoo and aquarium careers. Teens assist with over 20 jobs around the Zoo! ZooAide applications are available in December and must be submitted by the end of February. More info available at:

[COLUMBUSZOO.ORG/HOME/ABOUT/VOLUNTEER](http://COLUMBUSZOO.ORG/HOME/ABOUT/VOLUNTEER)







# WHO'S AT THE ZOO? WORKSHEET

**ENVIRONMENTAL STEWARDSHIP** means doing something positive for the environment. During your visit to the Zoo, think about opportunities employees and volunteers have for environmental stewardship.

Ask at least one volunteer (*in uniform*) the following question: How does volunteering at the Zoo make you feel connected to the environment?



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In the space provided, draw a comic strip that represents the answer.






# ENVIRONMENTAL STEWARDS IN ACTION

At Zoo

WHAT?

Gallery walk activity

WHERE?

Anywhere on Zoo grounds where the class can convene

WHEN?

During the Zoo field trip

WHY?

To share and collect additional ideas on how environmental stewardship is manifested through different Zoo careers

HOW?

Organize a gallery walk where all students share their comic strips and demonstrate how environmental stewardship is represented at the Zoo.

Divide the class into two equal groups. One group stands in a circle holding their cartoon drawings from the previous activity. The other group walks around to view the “gallery.” They may ask questions or make comments related to the drawings. After a few minutes, have the students in each group switch places.

Invite students to share unique examples of environmental stewardship. Facilitate a brief discussion around the following questions:

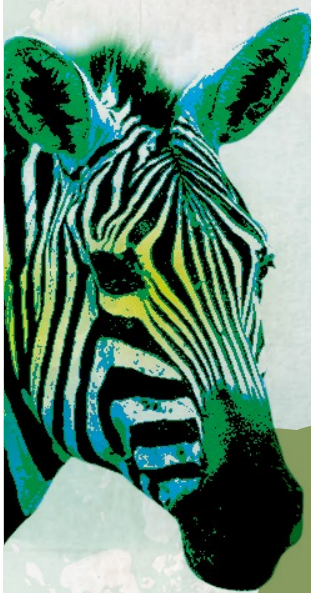
- Do you think certain jobs at the Zoo are more conducive to environmental stewardship? Which ones and why?
- If you could have any of the jobs at the Zoo, what would it be and how would you demonstrate environmental stewardship during your work day?

Want to make a difference?

## CHECK OUT THE TEEN ECO SUMMIT!

The Columbus Zoo and Aquarium is proud to host this FREE two-day event. The Teen Eco Summit combines inspiring guest speakers, DIY sustainability workshops and of course, cool animals. By the end of the Summit, students create a Conservation Action Plan to implement in their school. More info available at:

[WWW.COLUMBUSZOO.ORG](http://WWW.COLUMBUSZOO.ORG)





GRADES  
9-12

## ENVIRO-VIDEO

At Zoo

WHAT?

Creation of short video featuring an environmental issue

WHERE?

Anywhere on Zoo grounds

WHEN?

During the Zoo field trip

WHY?

To link environmental stewardship actions to a specific environmental issue

HOW?

Divide students into groups of 3-5 people; ensure that each group has at least one smartphone with video capability.

Direct students to a habitat area to read the Zoo's informational graphics in search of an environmental issue. Examples include:

- **Asia Quest** - Endangered species trade
- **Australia and the Islands** - Palm oil
- **Congo Expedition** - Bush meat; human-wildlife conflict
- **Heart of Africa** - Human-wildlife conflict
- **North America** - Wildlife-friendly backyards
- **Polar Frontier** - Climate change
- **Shores** - Sustainable seafood; plastics

Using their smartphones, students create short videos in the habitat space to explain the environmental issue and suggest one or more actions to help combat the problem. The videos may tie to a specific species and should address the "so what" of wildlife conservation—why people should care and get engaged as environmental stewards.

## ALTERNATIVE ACTIVITY

Instead of creating videos on site, students can write scripts for a fictional conversation about the environmental issue. For example, imagine a conversation between a primatologist (*primate researcher*) in the Congo and a local family struggling to make ends meet. Perhaps consider an interview between the media and a Zoo employee about how Ohio citizens can make informed choices about the seafood they eat. These scripts can be acted out for the class or filmed at a later time.



GRADES  
9-12

# CAREER CHALLENGE

At  
School

WHAT?

Opportunity to link environmental issues to positive environmental actions

WHERE?

In your classroom

WHEN?

After the Zoo field trip

WHY?

To demonstrate understanding of individuals contributions to environmental stewardship

HOW?

Begin with students writing down the career they hope to have one day, or a few jobs that interest them. *(It does not need to be related to Zoos or the environment.)*

Next, showcase the videos or skits created during the previous activity to be reminded of examples of environmental issues. *(Or use another method to brainstorm environmental issues.)*

Create a series of “human histograms” with students standing in rows to represent which of the environmental issues they feel is:

- Most urgent
- Most easily addressed
- Least easily addressed
- Most relevant to Ohio *(or your state if you live outside Ohio)*

Return to the students’ career choices. Direct students to brainstorm ideas on how people in different jobs can engage in environmental stewardship. Encourage students to discuss their ideas with a classmate. Remind students that being an environmental steward can take the form of both large and small actions.

For example:

*As a politician, I can advocate for environmentally-friendly legislation.*

*As a librarian, I can request books that are printed on recycled paper.*

## EXTENSION ACTIVITY

Have students extend their brainstorming by journaling about how they can have a positive impact on the environment in their future career.