Cincinnati Museum Center

# Teacher's Pre- and Post-Program Visit Guide

| | |
|---|---|
| **Program** | **STEMing It!** |
| **Grade Level** | **4 - 8** |
| **Time** | **50 minutes** |
| **Location** | **Museum of Natural History & Science Classrooms and *Pathways to Change* exhibit** |

## Program Objectives

- Students will learn about four different time periods in Cincinnati history and will discover the evolution of society and its impact on the environment.
- Students will discover a direct relation between the population, technological advances, the time period and the environmental impact.
- Students will learn about different ways they can impact the environment.
- Students will learn about solar cars and other ways that we might help to conserve natural resources.

## Program Description

The relationship between humans and the environment has changed through the past 300 years. Students will learn about how we have impacted the environment from Native Americans to the present concluding with an exploration of modern technology and conservation methods. This program includes a guided experience in the Museum of Natural History & Science's *Pathways to Change* exhibit.

## Major Vocabulary and Concepts

| | | |
|---|---|---|
| STEM | natural resources | Industrial Revolution |
| solar energy | early settlers | Fort Ancient Native Americans |
| renewable resources | | nonrenewable resources |

## Suggested things to do in your classroom before the program

- Ask your students if they impact their environment. What do they do to make this impact? Can they do something to change, reduce or eliminate this impact? Discuss as a class.
- Review terms and concepts listed above.
- List the time it would take for everyday items to decompose, such as Styrofoam, cardboard, cigarettes and plastic.
- Discuss renewable and nonrenewable resources and their impact on the environment.

**Suggested things to do after the program**

- In your classroom, create an archaeological excavation using everyday non-biodegradable items like Styrofoam, plastic utensils, packaging, etc. Have your students pretend that they are archaeologists from the year 3000 AD, and have them excavate and study the artifacts. How can they determine what these objects were originally used for? What can they infer about the people who left these objects behind? What kind of impact do they think these objects had on their environment?
- Create a "biology bottle" or class terrarium with plants, small fish or insects, soil, rocks, etc. Make decisions as a class about how to care for the terrarium (whether or not to use fertilizer, how often to water, etc). Make observations about this mini-habitat and hypothesize about how different things would affect the balance of the habitat.
- Research what happens when something is thrown away and follow the process from its purpose to being recycled or put into a landfill.
- Create a story, poem, rap, or song to educate other students about what you have learned concerning ecology and recycling.
- Discuss how students can "go green" at home with rain gardens, solar panels, green roofs, or simply lifestyle changes such as recycling, turning off the water while brushing teeth, turning off lights, computers and electronics when not in use or even asking parents to buy and use green products.

**Curriculum and Standards Addressed**

Ohio – Earth & Space Science, Life Sciences, Science & Technology, Scientific Inquiry, Scientific Ways of Knowing

Kentucky – Earth & Space Science, Life Science, Scientific Inquiry, Applications & Connections

Indiana – The Physical Setting, The Living Environment, The Mathematical World, The Nature of Science & Technology, Scientific Thinking, Common Themes, Historical Perspectives

**Related Exhibits and Features**

- The Museum of Natural History & Science's *Pathways to Change* exhibit
- The Cincinnati History Museum's *Settlement to 1860's* exhibit
- Omnimax® films: *Baja's Ocean Oasis* or *Blue Planet*

**Resources**

- The Bicentennial Guide to Cincinnati by Geoffrey Giglerano & Deborah Overmeyer
- The Mill Creek: An Unnatural History of an Urban Stream by Stanely Hadeen
- Life in the Balance: Humanity and the Biodiversity Crisis by Niles Eldrige
- Discover the Past: A Tale of Cincinnati Living History by Cynthia Kuhn Beischel
- Under a Lucky Star: The Story of Fredrick A. Hauck by Priscilla Petty