

GLOBIO-created Learning Activity Guides are designed to simplify integration of Glossopedia based learning into classroom and extra-curricular activities and curriculum. Each activity is designed around the use of Glossopedia articles and subjects, incorporating technology into interdisciplinary instruction. Learning Activities are intended to be fun, inquiry-driven, and interesting; exciting for students and helpful to teachers.

During the reading

Worksheet:

Environments are Everywhere ~~~~~ Page 3

Discussion Questions ~~~~~ Page 2

Activity

Micro-tropics Terrarium ~~~~~ Page 4

Extensions

Micro-tropics Terrarium Extension ~~~~~ Page 5

Hazardous Substance Substitute ~~~~~ Page 6

Precycling Pros ~~~~~ Page 7

Concepts

- An environment is a collection of all the animals and plants in a specific landscape and climate.
- Environments are always changing.
- People's activities have a huge and long-lasting impact on the global environment.

Related Topics

- Animals
- Plants
- Earth
- Hurricanes
- Species
- Tropical Rainforests
- Borneo
- Orangutans
- Conservation

Standards



Standards Key
available at
[www.globio.org/
standards](http://www.globio.org/standards)

Recommended Outside Links

- **Hearts & Minds: Information for Change:** <http://www.heartsandminds.org/links/greenkids.htm>
- **Earth911:** <http://www.earth911.org/master.asp?s=kids&a=kids/kids.asp>
- **PBS Kids ZOOM:** <http://pbskids.org/zoom/activities/action/way04.html>

Vocabulary

- Climate
- Atmosphere
- Diversity
- Natural Resource
- Overfishing
- Resource
- Endangered
- Extinct
- Recycle

Environments: During the Reading

Directions:

- Give each student a copy of the worksheet *Environments are Everywhere*
- Go to the Glossopedia article on *Environments*.
- Ask students to complete the sheet as they read the *Environments* article in Glossopedia. Remind them to check photo captions, gallery images, and Fast Facts for information.

Discussion Questions:

- What is an environment?
- What are some elements of an environment?
- What kinds of environmental change do you think you might see during your life?
- What can humans do to reduce their impact on the environment?
- Name something you own that came directly from the environment. Was the environment changed in any way by taking or making it? How?
- How important is it to prevent plants and animals from becoming extinct?
- Tell of an environment you have visited and what was most interesting about it?
- Compare two environments and tell how they are different and alike.
- Why are plants and animals in one environment different from those in another?
- What are some ways you can teach others about the importance of protecting the environment?

Time:

- 20-30 minutes

Materials:

- Glossopedia
- Worksheet: *Environments are Everywhere*
- Pencils
- Discussion Questions

Glossopedia:

- www.globio.org/glossopedia/environments



Worksheet:

Environments are Everywhere

Name 5 different kinds of environments.

- 1.
- 2.
- 3.
- 4.
- 5.

Name an environmental change that seems small to us and one that seems very large.



How many people live on the earth today?



List 5 things that humans do that impact the environment.

- 1.
- 2.
- 3.
- 4.
- 5.

Choose a type of environment and list 3 types of animals that might live there.

- 1.
- 2.
- 3.

Write a fact about the environment that is most like your home.



Micro-tropics Terrarium

Create a miniature tropical rainforest environment in your classroom.

Directions for students:

Part I

- Go to the Glossopedia article on *Tropical Rainforests*.
- Read the first five paragraphs of the article. Think about what your miniature rainforest should look like.

Part II

- Place a layer of gravel, then charcoal on the bottom of the aquarium.
- Add the compost or garden soil.
- Use rocks and wood to make it look like a real rainforest with hills, valleys, cliffs, canyons, rivers, etc.
- Crumble the dried vegetation and leaves in a thin layer over the soil.
- Sprinkle with water until the soil is damp.
- Add plants carefully, leaving some space around them for growth.
- Cover the terrarium with the piece of glass or plastic and place it in a warm spot out of direct sunlight and away from direct heat.

Part III

You have created a tropical micro-environment that can take care of itself quite well. When it begins to look dry, give it a small shower of "rain," but not too much or your plants may get moldy. If this happens, remove the top for a while each day until the mold disappears, but don't let it get too dry.

- Watch your terrarium for several months.
- Keep a data journal and make daily or weekly entries, depending on the type of information you are recording.

Data:

- Date and time of your entries
- Any noticeable or visible changes
- Plant growth measurements
- Quantity of water added
- Temperature
- Soil pH

Observation Questions:

- Why doesn't your terrarium rainforest need more water?
- What natural cycles are occurring inside?
- Do you think that you have a balanced ecosystem?
- What other micro-environments do you think you could make?

Time:

- One or two class sessions
- Several months observation

Glossopedia:

- www.globio.org/environments

Materials:

- Large aquarium or glass bowl
- Gravel
- Charcoal
- Compost or good garden soil
- Dried vegetation and leaves
- Small rocks and pieces of wood
- Small plants such as ferns, orchids, moss, bromeliads etc. If you can't get these, use other small plants that like a damp environment.
- A piece of glass or rigid plastic to make a lid for the aquarium or bowl. [note: the lid should allow for air exchange]
- Thermometer
- pH paper
- Water

Extension:

Micro-tropics Terrarium Extension

Directions:

- Introduce a frog, toad, or insects and other small invertebrates to the terrarium. Be sure they have enough of the right food to eat.
- Photograph your terrarium every day for a month. Post your photographs and journal data on your school or classroom web site or blog.
- Go to the Glossopedia article on the *Tropical Rainforest*. Find the interactive photo titled *Rainforest Layers* and click on it. Run the mouse over the picture to find text boxes describing the forest layers. Can you find similar layers in your terrarium? Draw a picture of your terrarium and label the layers.
- Using your computer, make a graph of one plant's growth over one month; three months; six months. Do this for three plants and chart and compare their progress.
- Make a desert or temperate forest terrarium, using appropriate soil and plants and compare it to the tropical rainforest terrarium.
- Write a story as if you were very small and living inside your terrarium. What creatures might come to live with you? Write a poem about life inside the terrarium, looking out at your classmates.
- Make your own terrarium in a 2 liter bottle.
- Make a terrarium at home with your family.



Extension:

Hazardous Substance Substitute

Directions:

- Have students write a list of things they have at home that might not be good for the environment. These can be things like cleaning solutions, plastic bags, automotive fluids, and garden pesticides.
- Help students research alternatives to use instead of these materials, such as vinegar, baking soda, cloth bags, animal safe antifreeze, and diatomaceous earth.
- They can create a list of alternatives to take home, post on a school website or blog, and give to others in the school and community.



Extension:

Precycling Pros

Directions:

- Brainstorm with students ways that people can help the environment by choosing reusable or recyclable alternatives, or by buying things in containers that can be used again for new purposes instead of thrown away. This is called “precycling.”

Examples:

- use cloth napkins instead of paper
 - use cloth bags for shopping
 - use cloth bags or lunch boxes instead of paper or plastic bags
 - reuse egg cartons for organizers
 - reuse empty jars for pencils and small tools
-
- Ask the class to make precycling choices for a week.
 - At the end of the week, make a chart together to record student’s findings and ideas.



Discussion Questions:

- Did you find that there were things you could give away instead of throw away?
- How many new uses did you find for one item that might have been thrown away?
- Did you use something in a new way?
- Is there something you decided not to buy because you couldn’t reuse or recycle the packaging?
 - If so, will you or your family make a similar decision again in the future?
- How did you help to conserve resources and the environment by precycling?
- Do you have precycling suggestions for others?

More Possibilities:

- Students may make a public service announcement flier of their findings and suggestions about precycling to distribute to the school and community, or post on a school web site or blog.