

Lesson one: Welcome to Planet Plant!

Objectives: To introduce the module. To explain the rationale for learning about plant diversity and conservation, and what you hope students will gain from the lessons. To survey students to find out how much they care about plant diversity.

Introduction to Activity: To help the material in this module be meaningful and relevant to your students, it is important to provide them with a context for learning about plant diversity and conservation. This larger context is biodiversity loss. As you probably know, plants and animals are becoming extinct at an alarming pace. This topic is of interest and concern to most students. In this activity, you will introduce students to what they will be learning during this module and why. They will also consider what they feel about the importance of plant diversity and conservation, before the module begins.

Materials Needed:

- a copy of the Student Survey for each student

Activity:

Part One: Introduce the unit to your students. You might want to make the following points:

- Biodiversity loss is a major global problem.
- There have been five great extinctions or mass extinctions in Earth's long history. These were times in which most living things became extinct. (See insert.) Your students may actually be living in a sixth major extinction of species.
- Extinction is a natural process and has occurred throughout the time life has been found on Earth. This natural rate of extinction is known as the "background rate." Scientists estimate that the current rate of extinction is about 1000 times greater than the background rate, and that this rate is increasing. The current rate also rivals the rate of extinction that occurred in past mass extinctions.
- The five great extinctions had "natural" causes. This current rise in extinction is different; it is caused by one species—humans.
- Current estimates are that 12% of all bird species may be extinct by the end of this century, and that one-third to two-thirds of all plant and animal species (including 25% of mammals) may be lost during the second half of this century, particularly those species in the tropics.

The Five Great Extinctions

Cretaceous (65 million years ago)

Triassic (208 million years ago)

Permian (245 million years ago)

Devonian (360 million years ago)

Ordovician (438 million years ago)

- Roughly 1.6 million different organisms have been identified by science and given a name. There are thought to be 7-10 million species (and some scientists predict even more) in existence. This means that species can go extinct before we even know they exist! Does it matter? This will be an important question the module will address.
- Extinction is permanent. Once species are gone, we cannot get them back.
- For most people, the idea that certain species may no longer exist is unsettling. This tends to be especially true for large, charismatic mammals such as pandas, tigers, elephants, and whales. But what about smaller animals? And what about plants? Do they deserve our attention as well?

Part Two: Student Survey

Pass out a copy of the Student Survey to each student. Give your students a few minutes to complete it. Then, lead a class discussion about their answers to the questions. It is likely that most of your students will rate the charismatic mammals such as gorillas, cheetahs, and whales higher than plants and insects, as well as fish and reptiles. You can conclude the discussion by pointing out that the purpose of this module is to concentrate on plants because many people don't know much about them and tend not to realize just how important they are to us, as well as to all life on the planet. In fact, it is plants that provide the habitat that their favorite larger mammals need to exist.

Then, take a moment to explain to your students what they will be doing during the curriculum module and what you hope they'll learn. They will:

- Focus on plants.
- Dissect flowers during a lab.
- Participate in group activities and make a poster.
- Learn how and why plants are vital to all living things and how we humans truly rely upon them.
- Learn why protecting the diversity of plants is important, and what people are doing to conserve plants.
- Wrap-up the unit by taking a field trip to a local botanic garden. (If you have coordinated the field trip with your local botanical garden, you may be able to say a few things about the focus of the trip.)

Student Survey

Student name: _____

Class/section: _____

1. On a scale of 1-5, please rate how concerned you would be if the following species went extinct. (1 = you wouldn't care at all and 5 = you would be extremely concerned)

Michigan Monkey Flower	_____
African Elephant	_____
Whooping Crane	_____
American Crocodile	_____
Arizona Hedgehog Cactus	_____
Giant Panda	_____
Bald Eagle	_____
Blackburn's Sphinx Moth	_____
Running Buffalo Clover	_____
Blue Whale	_____
Ivory-billed Woodpecker	_____
Gopher Tortoise	_____
Hawaiian Gardenia	_____
Atlantic Salmon	_____
Cheetah	_____
Tennessee Yellow-eyed Grass	_____
Hungerford's Crawling Water Beetle	_____
Minnesota Dwarf Trout Lily	_____
Mountain Gorilla	_____
Furbish Lousewort	_____

2. Can you explain your rankings? Did you rank some organisms higher than others? Why?