



**Botanic Gardens  
Conservation International  
(U.S.)**

c/o Brooklyn Botanic Garden  
1000 Washington Avenue  
Brooklyn, NY 11225-1099

# Plants for Life Discovery Cart

## The Big Idea

We rely on plants every day for our health and happiness. Plants give us the food we eat, the air we breathe, the water we drink, the materials for our homes, and the medicines that protect us. Yet despite our reliance on plants, nearly one in three is threatened with extinction in the wild.

## Key Concepts

- Plants are important to all life.
- Plants are endangered both locally and globally.
- Individual actions can help save plants.

## Activity #1: *Plants for Life Challenge*

### Overview

Match products made from plants with their real plant sources.

### You Will Need

- Cotton balls
- A small bag of coffee or coffee beans
- A small package of ginger snap cookies
- A small can of pineapple
- Chopsticks
- Aloe vera lotion
- A banana
- Cotton plant (*Note: Photos of each of these plants may be used if real plants are not available.*)
- Coffee plant
- Ginger plant
- Pineapple plant
- Bamboo plant
- Aloe plant
- Banana plant
- *Plants for Life Challenge* Activity Cards (front and back of cards included with this lesson plan)
- Copies of BGCI's *A Plant Conservation Checklist for Gardeners*

### To Prepare

Arrange the products in one area of the cart, and the plants in another. If the plants are large, you may place some of them on the ground next to the cart. Place the corresponding activity card in front of each plant.

### Conduct the Activity

1. Use the plants, the products, or a warm greeting to attract visitor attention to the discovery cart.
2. Explain the object of the *Plants for Life Challenge*: to match the products made from plants with their real plant sources.



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3. As visitors make a match, you may offer additional information about the plant or human reliance on it for food, shelter, clothing, medicine, etc.
4. If more than one visitor is engaged with activities at the cart, you can instruct the visitor to turn over the activity card accompanying each plant to see if they have made a successful match.
5. Distribute copies of BGCI's *A Plant Conservation Checklist for Gardeners* to adults for further information.

## **Activity #2: Threatened Plants Around the World**

### Overview

We depend on plants to support all life on earth. Some plants are in danger of extinction. Explore some of these endangered plants up close.

### You Will Need

- Golden Barrel Cactus (*Echinocactus Grusonii*)
- Queen Victoria's Agave
- Venus Flytrap
- Tennessee Coneflower (*Echinacea Tennesseeensis*)
- Ginkgo Biloba
- Other threatened or endangered plants relevant to your region or collection
- Plant information cards (front and back of cards included with this lesson plan)
- Hand lenses
- Copies of *A Plant Conservation Checklist for Gardeners*

### To Prepare

Place the plants, hand lenses and the accompanying information cards on the cart.

### Conduct the Activity

1. Ask the visitor if she or he has ever seen an endangered species. If so, ask the visitor to describe his or her experience. What did she see and where? (An endangered species is a species that is in danger of extinction in the near future throughout all or most of its range. Endangered, however, also means there is still time! Source: U.S. Fish and Wildlife Service.)
2. Explain to the visitor approximately 100,000 plant species are threatened with extinction around the world. Show the visitor the endangered plants on the Discovery Cart and highlight parts of the plants' conservation stories. Encourage the visitor to use the hand lenses to view the plants up close.
3. Distribute copies of BGCI's *A Plant Conservation Checklist for Gardeners* to adults for further information.

### Further Information

- **Golden Barrel Cactus:** The golden barrel cactus is the most widely cultivated cactus in the world. In its native habitat in Mexico, however, just 50 of these plants remain in the wild! This makes the golden barrel cactus one of the most endangered plants in the world. It is threatened by both habitat destruction and collection from the wild. Much of the plant's original habitat was destroyed during the construction of a major dam in Mexico, and this plant, along with other cacti, remain attractive targets for wild plant poachers.
- **Queen Victoria's Agave:** Agaves are important commercial plants. They are used for fiber, sap and landscaping. The Queen Victoria's Agave is endangered in the wild in its native Mexico, but it is a common garden plant, with millions of plants in cultivation around the world.



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- Venus Flytrap: Carnivorous plants are the vampires of the natural world! The Venus flytrap captures unsuspecting insects to obtain extra nitrogen for survival. The popularity of these plants has led to overcollecting in its native habitat in North Carolina and South Carolina. Habitat loss has also put pressure on this species in the wild. Many people think that carnivorous plants are only found in the tropics, but the Venus flytrap is native to the wet pine savannas and pocosins of coastal North and South Carolina. The word pocosin comes from an Algonquin Native American word that means “swamp on a hill.”
- Echinacea Tennesseeensis: The Tennessee Coneflower was the first plant in the U.S. to be placed on the federal Endangered Species List. The Tennessee coneflower thrives in barren, rocky open areas where many other plants cannot survive. These areas are called *cedar glades* because they are usually surrounded by small Eastern red cedar trees. The soil is extremely thin, and the ground is often covered with natural gravel or larger rocks known as flagstone. Plants in the cedar glades need to be able to survive in bright sun and without a lot of water because the ground dries out quickly. Over the past century, the plant’s native habitat in middle Tennessee has become more and more suburban. Human impacts such as roads, dams, and new houses may have destroyed some populations—making habitat loss a serious threat to its survival. This coneflower is also threatened by overcollection, both for people’s gardens and for making medicines. Fortunately, most of the remaining plants are either on protected land or in places where the landowners cooperate with conservation efforts.
- Ginkgo Biloba: Ginkgo biloba is possibly the most ancient of all living trees. Nearly identical leaves to the Ginkgo have been found in 200 million year old fossils! Today in the wild, the Ginkgo is an endangered tree due to habitat loss in its native China. However, the Ginkgo is a very common street tree in the United States.



## Take the Plants for Life Challenge!

*Can you match each of these  
common household items with the  
plant it is derived from? Turn over  
the Challenge card in front of each  
plant to find out if you are right!*



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## ALOE

Aloe plants are native to Africa, with the greatest concentration of species (150) in the southern part of the continent. Some species of aloe are used for medicinal and cosmetic purposes. Many species have become endangered due to overcollection because of their horticultural appeal.



## BANANA

12 crop plants provide 75 percent of the calories consumed by people. Banana is one of those plants. The others are beans, cassava, corn, millet, potatoes, rice, sorghum, soy beans, sugar cane, sweet potatoes, and wheat.



## BAMBOO

Bamboo is an important source for building materials and food for people around the world. The light, smooth stems are usually hollow, and are used for scaffolding, irrigation pipes, furniture, chopsticks, and even musical instruments. Humans and animals eat bamboo shoots.



## PINEAPPLE

Pineapples are the fruits of bromeliads, a family of plants made up of 2,700 species. Today, more than 10 million tons of pineapples are grown around the world.



## COFFEE

Coffee is one of the most widely consumed beverages made from plants. Originally from Ethiopia, coffee is now grown around the world. Buy shade-grown coffee, which is grown under a canopy of shade trees and provides food and shelter for wildlife.



## COTTON

Four different species of cotton are grown commercially. Most cotton is grown with heavy use of chemical sprays. Choose organic cotton products instead. Every t-shirt made from organic cotton saves one-third of a pound of synthetic fertilizers and farm chemicals.



# GINGER

Ginger is a spice used in many of the world's cuisines. Today, most of the world's ginger is grown in China. In addition to its use in cooking, ginger is also known as an effective treatment for nausea and motion sickness.





What's so special  
about this plant?

Turn me over to find out!



What's so special  
about this plant?

Turn me over to find out!



## Ginkgo Tree

*Ginkgo biloba*

Ginkgo biloba is possibly the most ancient of all living trees. Nearly identical leaves to the Ginkgo have been found in 200 million year old fossils! Today in the wild, the Ginkgo is an endangered tree due to habitat loss in its native China.



## Venus Flytrap

*Dionaea muscipula*

Many people think that carnivorous plants are only found in the tropics, but the Venus flytrap is native to North and South Carolina. The Venus flytrap is endangered because of overcollecting and habitat loss.



## Golden Barrel Cactus

*Echinocactus grusonii*

The golden barrel cactus is the most widely cultivated cactus in the world. In its native habitat in Mexico, however, just 50 of these plants remain in the wild! This makes the golden barrel cactus one of the most endangered plants in the world.



## Queen Victoria's Agave

*Agave victoriae-reginae*

Agaves are important commercial plants. They are used for fiber, sap and landscaping. The Queen Victoria's Agave is endangered in the wild in its native Mexico, but it is a common garden plant, with millions of plants in cultivation around the world.

# Tennessee Coneflower

*Echinacea tennesseensis*



The Tennessee coneflower thrives in barren, rocky open areas called *cedar glades* in—you guessed it—Tennessee! Members of the genus *Echinacea*, including the Tennessee coneflower, have been used for many years as herbal medicines. The Tennessee coneflower was also the first plant to be placed on the U.S. Endangered Species List.

