

# FAIRCHILD TROPICAL BOTANIC GARDEN

Exploring, Explaining and Conserving the World of Tropical Plants

## Plant Adaptations in Pine Rocklands

**Suggested ages:** 8-14

**Materials:** Art materials for drawing, painting, or making a 3-D model: information and resources about Pine Rockland habitats, including visual representations; index cards listing two ecological challenges present in Pine Rockland habitats

**Major concepts:** Adaptations, plant adaptations, Pine Rockland habitat features, ecology, what is “native”

**Skills involved:** Group discussion skills, drawing and/or modeling, oral presentations of finished project

## Activity Description

### Introduction to Pine Rocklands

Characterized by higher elevations; major identifiable plant species including Slash pines and saw palmettos; limestone pinnacle rock

#### **Discussion question: Have you heard of Pine Rocklands?**

Lead discussion on Pine Rockland habitat, including an overview and visual representation of the challenges (e.g. fire, hurricanes, drought, etc; see list below) that organisms living in this habitat might face.

### Discussion of Adaptations

#### **Discussion question:**

*“What are **ADAPTATIONS**?”*

(Give example of an adaptation: butterfly has long tongue (proboscis) for getting nectar from flower; bird has wings for flying to avoid predators; person has hair for protecting head from sun and keeping warm in winter).

#### **Discussion question:**

*“What adaptations do **ANIMALS** have for surviving a challenge like fire?”*  
(Examples: running, flying, going underground)

#### **Discussion question:**

*“What are adaptations that **PLANTS** might have for surviving fire in the Pine Rocklands?”*



(Examples: bark on a pine tree insulates the tree; saw palmetto roots easily and regenerates leaves after fire; dormant seeds need fire to germinate)

**Additional information:** Discussion about how various parts of the plant (root, stems/trunks, leaves, flowers) can display adaptations.

### **Invent a Pine Rockland Plant Activity**

Students may work individually or as a group on their project. If working in groups, divide students into teams of 2-4.

#### **Give the following explanation of the assignment:**

“Your job is to ***invent a Pine Rockland plant*** that is adapted to survive two ecological challenges: Fire and (another one to be assigned)”

“With your team, decide what sorts of adaptations your invented plant will have to meet these challenges. (Individuals in groups can be asked to be responsible for creating an adaptation for a particular plant part – root, stem, leaves.) You will then make a drawing (or model) of the plant.”

“After you are done, each team will present their plant and tell us how it is adapted to meeting the challenges of living in the Pine Rocklands.”

**Give out cards** to each group asking them to invent a Pine Rockland plant that is adapted to survive FIRE and one other challenge. Each card has the word FIRE and one of the following on it:

Wind/Hurricanes  
Rain  
Sun/heat  
Lightning  
Living on a rock

Drought  
Animals that can eat them  
Pollination  
Seed Dispersal  
Crowding from other plants

**After students have completed their work**, ask each group to come to the front of the room to present their plant and how it is adapted for their particular challenges.

#### Concept Building

Emphasizing the words “Native” and “Ecology” may be important not only for enhancing vocabulary but for extending students’ conceptual understanding

#### Extension activities

Discussing issues linked to natives vs. invasive exotics

Writing a short descriptive essay in place of or addition to the art project

