

# **Plants of the Tropical Rainforest**

By Jane Saxer

## **Objective**

The students will learn how sunlight affects plants in the tropical rainforest.

## **Introductory Information**

Philodendron is a popular houseplant that grows quickly, and the trailers can easily be coaxed along door frames and walls. Many students are familiar with it, but they may not know that it's a tropical rainforest plant. This activity lets students explore how light affects growth in plants.

## **Materials**

1. one philodendron plant for each group
2. water
3. one notebook and pencil for each group

## **Preparation**

Label an equal number of plants: shade, full sun, or some sun. Each group will work with only one plant.

## **Procedure**

1. Divide students into gardening groups. Each group will be responsible for keeping his/her plant watered and recording the growth in a notebook.
2. Give one plant to each group and ask each group member to write their name on the plant container. The plants should already be labeled: sun, full sun, or some sun. Help the students find an appropriate place for their plant's light conditions.
3. Help students set up a chart in their notebooks or on a piece of paper for recording information about their plant. Have each team record the following starting information:
  - a. How many shoots are there from the base?
  - b. How many leaves?
  - c. How long are the leaves?
  - d. How long are the trailers?
4. Ask each group to sketch the plant and predict in their notebooks how much their plant will have grown in a month (or at the end of the unit).
5. Groups should record their plant's growth every week (or other appropriate time increment) in their chart.
6. At the end of the unit, the groups can make a simple line graph showing how much or how little their plant grew over time. Were their predictions right?

### **Assessment for Philodendron Science Experiment**

Using a scale of 1—4 (poor to excellent), rate each group's science notebook using the following rubric:

Sets up experiment	1	2	3	4
Makes and records observations	1	2	3	4
Compares and discusses findings with group	1	2	3	4
Makes science journal entry describing experience	1	2	3	4
Draws a final conclusion	1	2	3	4

### **Culminating Activity**

As a whole class, make a bar graph to compare the different amounts of growth for different light conditions.

### **Extension Activity**

Challenge groups with the same light conditions to average their data.

## **Products Harvested from the Tropical Rainforest**

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### **Objective**

Students will learn about products harvested from the tropical rainforest.

### **Motivating Activity**

1. Ask students to individually brainstorm on a piece of paper all of the rainforest products that they can think of.
2. After five minutes of brainstorming, ask each student to share one or two ideas with the class.
3. After the students have had a chance to share their ideas, discuss some of the products that they may have left out. The following is a list of various rainforest products:
  - a. Fruits and vegetables: avocado, cucumber, orange, plantain, banana, lemon, papaya, grapefruit, lime, passion fruit, tangerine, coconut, guava, mango, pineapple, yam
  - b. Spices: allspice, chili pepper, vanilla, black pepper, cinnamon, nutmeg, cloves, paprika, cayenne, ginger
  - c. Other foods: Brazil nuts, chocolate, sesame seed, cane sugar, coffee, tapioca, cashew nuts, cola, peanuts, tea
  - d. Plants: African violets, begonia, philodendron, orchids, Christmas cactus, rubber tree plant
  - e. Other products: chicle (chewing gum), rubber, balsa wood, mahogany wood, eucalyptus oil, patchouli oil
4. After discussing rainforest products, show the students several examples of rainforest products. Refer to the list above for any products you may already have at home. Many of the food items can easily be obtained at the local grocery store.
5. Allow the students to taste samples of rainforest foods. Refer to the list above.

### **Rainforest Recipes Activity**

#### *Introductory Information:*

The purpose of this activity is to further familiarize the students with products that are harvested from the rainforest, specifically food products. The students will be asked to create their own recipe for a tropical treat using their knowledge about foods from the rainforest. Included in this lesson plan are some recipes to share with the students and to help spark their imagination for their own recipes.

#### *Preparation*

Before presenting this lesson, prepare one or more of the following recipes to share with your class.

### Fruity Rainforest Fantasy

- Oranges, pineapple, mangos, grapes, bananas

### Fruit Dip

- One 8 oz package cream cheese (softened)
- 6 oz marshmallow crème
- 1 Tbsp orange juice
- 1 pinch ground ginger

### Directions

- Peel, slice, and divide oranges, pineapple, bananas and mangos. Arrange the grapes and other fruit on a plate.
- To make the dip, use an electric mixer (at medium speed). Beat together all of the dip ingredients until well blended.
- Use toothpicks to hold the fruit while dipping.

### Choco-Nut Treat

- ½ cup cashews
- ½ cup Brazil nuts
- ½ cup peanuts
- ½ cup macadamia nuts
- 1 cup broken banana chips
- 1 cup chocolate chips
- 1 cup dried pineapple chunks
- ½ cup coconut flakes

### Directions

- Combine all the ingredients into a large mixing bowl.

### Jungle Juice

- 1 banana (ripe)
- 1 cup strawberries
- 1 cup orange juice
- 1 cup pineapple juice
- 1 pint vanilla ice cream
- 1 can lemon-lime soda

#### Directions

- Place the ripe banana and strawberries in a blender to puree.
- Add the orange and pineapple juice and blend together.
- Put ice cream into a punch bowl.
- Pour juice mixture into punch bowl on top of the ice cream
- Add the lemon-lime soda to the punch bowl

#### Monkey Bread

- 4 tubes refrigerated biscuits
- 4 tsp cinnamon
- $\frac{3}{4}$  cup sugar
- $\frac{1}{2}$  cup melted butter
- $\frac{1}{2}$  cup brown sugar and  $\frac{1}{2}$  cup white granulated sugar combined
- raisins
- your choice of nuts
- 2 bunt pans

#### Directions

- Preheat the oven to 350° F
- Combine  $\frac{3}{4}$  cup of sugar and cinnamon
- Cut or tear each individual biscuit into fourths
- Roll each biscuit quarter into cinnamon sugar mixture
- Place biscuits equally in 2 greased bunt pans
- Pour brown sugar/white sugar mixture over the top of biscuits
- Pour melted butter over top
- Add raisins and nuts
- Bake at 350° F for 30 minutes

Recipes from Rain Forest: Lessons Towards a Global Understanding, Teacher Created Materials, 1995.

#### *Materials for Lesson*

- Samples of food, from recipes, for students to taste
- Paper copies of example recipes

#### *Procedure*

1. Pass out food samples and paper copies of example recipes to students
2. Allow students to eat samples while you chat with them about rainforest products
3. Instruct students to create an original recipe, using as many rainforest foods as they can.

They should remember to include a specific ingredients list as well as detailed step-by-step directions. Students should also include a colored drawing of their recipe on a separate piece of paper.

*Culminating Activity*

When all students are done creating their recipes, each student will share their written recipes and illustrations with the class. Some students may even wish to create their recipe at home and bring in samples the following day.

*Assessment for Rainforest Recipes*

Score 6: exemplary achievement

Score 5: commendable achievement

Score 4: adequate achievement

Score 3: some evidence of achievement

Score 2: limited evidence of achievement

Score 1: minimal evidence of achievement

Score 0: no work completed

## Recipe Self-Evaluation for Students

Name \_\_\_\_\_ Date \_\_\_\_\_

My recipe was \_\_\_\_\_

I decided to make this recipe because \_\_\_\_\_

\_\_\_\_\_

The hardest part about this project was \_\_\_\_\_

\_\_\_\_\_

The thing I liked best about my finished project is \_\_\_\_\_

\_\_\_\_\_

If I had more time, I would have \_\_\_\_\_

\_\_\_\_\_

Something else you should know is \_\_\_\_\_

\_\_\_\_\_

Here's how I would rate my project:

Yucky

Just Fair

Okay

Pretty Good

Great