

# THE TROPICAL HOUSE

## RAINFOREST

### TEACHER'S NOTES



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## THE TROPICAL HOUSE (Area 3 on map)

### INTRODUCTION to the RAINFOREST.

There are three main rainforest areas: -

1. Central and South America
2. West Africa
3. Asia and Australia

They are distributed between the The Tropics of Cancer and Capricorn.

The rainforest covers 6-7% of the Earth's land surface.

There are two types of rainforest, temperate and tropical.

Temperate rainforests lie in the temperate zones (between the tropics and the polar circles) of the globe. They are found in a few regions scattered around the world such as western North America, south-eastern Australia and New Zealand.

Tropical rainforests lie in the tropics (around 28 degrees north or south of the equator). They are found in many areas near the equator such as Asia, Africa, Central America and the Pacific Islands.

**Climate:** hot and humid throughout the year without distinct seasons.

**Annual rainfall:** typically between 2metres and 4 metres but can reach 20metres.

**Temperature:** between 20-28 degrees C. (fairly constant)

**Humidity:** approximately 80 %.

### **Plants of the Rain Forest**

Competition at ground level for light and food has led to evolution of plants to live on the branches of other plants, or even strangle large trees to fight for survival.

The aerial plants often gather nourishment from the air itself using so-called 'air roots'. The humidity of the rainforest encourages such adaptations which would be impossible in most temperate forests with their much drier conditions.

### **LAYERS OF A RAINFOREST**

#### **EMERGENT LAYER**

The tallest trees are the Emergent , towering as much as 200 feet above the forest floor with

trunks that measure up to 16 feet around. Most of these trees are broad-leaved, hardwood evergreens. Sunlight is plentiful up here. Animals found are eagles, monkeys, bats and butterflies.

### CANOPY LAYER

This is the primary layer of the forest and forms a roof over the two remaining layers. Most canopy trees have smooth, oval leaves that come to a point. It's a maze of leaves and branches. Many animals live in this area since food is abundant. Those animals include: snakes, toucans and tree frogs.

### UNDERSTORY LAYER

Little sunshine reaches this area so the plants have to grow larger leaves to reach the sunlight. The plants in this area seldom grow to 12 feet. Many animals live here including jaguars, red-eyed tree frogs and leopards. There is a large concentration of insects here.

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Suggest: For further information look at these following websites

[www.greenpeace.org.uk/forests/palm-oil](http://www.greenpeace.org.uk/forests/palm-oil)

[www.kew.org/ksheets/epiphytes.html](http://www.kew.org/ksheets/epiphytes.html)

[www.kew.org/ksheets/pineapple.html](http://www.kew.org/ksheets/pineapple.html)

### THE TROPICAL HOUSE

In 2002 the Tropical House was re-landscaped and re-planted to portray a story of nature's triumph over the worst excesses of mankind. The humid environment allows the most luxuriant growth of plants from the tropical regions of the world.

The Tropical House first opened in 1987. It was designed to reflect the curvilinear conservatories of the Victorian era. The use of twin skinned polycarbonate sheeting removes the problem of glazing a curved surface and adds the additional bonus of energy efficiency having less heat loss than glass.



During the past 15 years the opacity of the polycarbonate has increased and therefore light transmission has been much reduced. Energy is now provided from the recently installed solar panels that can be viewed at the rear of the Tropical House.

## Strelitzia regina

Commonly known as 'The Bird of Paradise'. The hard, beak like sheath from which the flower emerges, gives the appearance of a birds head.



## Giant Water Lilies

Water lily plants in the Amazon produce giant flowers and leaves that stretch out six feet across the water, absorbing light from the sun and making it difficult for other plants to live below the surface. Their edges are turned up to fight for position and they feature nasty spines on the underside to prevent fish from eating them. As well as having giant leaves, these plants also have giant flowers which grow to around a foot in length.



Watch this amazing video presented by David Attenborough  
<http://www.sciencekids.co.nz/videos/nature/waterlilies.html>

Look at height levels



### Philodendron scandens

Guess the common name of this plant.

*Heart Leaf. Shape of leaf.*



### Colocasia

(common name Potato of the tropics).

Young leaves can be eaten like spinach. The corm can be roasted, fried, boiled or mashed.



### Monstera deliciosa

(Swiss cheese plant)

A fairly common ornamental plant in U.K. Has an edible fruit that is grown commercially. In Mexico it is used as a medicinal tea to relieve arthritis.



### Tetrastigma voinierianum

Note the hairy upper leaf.

Fast growing, up to 9ft in a year.

Climbs with the use of tendrils.



Compare leaf shapes



Look at climbing plants what do they use for support?



Check the temperature



Musa  
What fruit does this produce?  
Huge umbrella like leaves  
Banana



**Alocasia**

Look at the texture and strength of these leaves.

