

Grade Level: 4th-8th

Subject Area: Social Studies Science

WI Model Academic Standards: Social Studies: A.4.1, A.4.2; B.4.4 A.8.1; B.8.1

Science: B.4.1; C.4.1; D.4.4, F.4.1, F.4.4

Rain Forest Overview Lesson Guide

Overview:

The Rain Forest Gallery provides an opportunity to explore the dependence of life between living (biotic) and non-living (abiotic) factors. Students will observe and discuss physical, chemical, biological and behavioral adaptations adopted/adapted by plants and animals that are on exhibit in this immersive setting.

Background:

The Museum's biology hall was developed to model a Costa Rica tropical rain forest in which Museum researchers maintained active research programs. This model for the biology hall enables a visitor to access a vast resource to reveal the interconnection of both the biotic (plants, animals, fungi, bacteria) and abiotic (sun, water, chemical) factors. The great diversity of life sets the stage for learning about the weather, epiphytes and the cocoa tree, the jaguar and the leaf cutter ants, to name a few. Also included are connections to human impacts and interdependence on this rich ecosystem.

Student Objectives:

- 1. Learn about the biodiversity of the rainforest through an examination of the plants and animals it supports.
- 2. Understand the interdependency of the plants and animals
- 3. Identify abiotic factors that contribute to species found in the distinct layers of a rain forest.
- 4. Learn about the broader impact that rainforest ecosystems have on the world's climate and culture.

Assessment:

- 1. Students are able to list key abiotic factors that contribute to the biodiversity of an ecosystem.
- 2. Students provide multiple examples of interdependence of animals to one another's survival.
- 3. Students can list the impacts of light, temperature and precipitation in the development of the layers of a rain forest.
- 4. Students list one or more ways in which the rain forests contribute to global climate conditions.

Program Vocabulary:

<u>Abiotic</u>: The non-living parts of an ecosystem – sunlight, humidity, temperature, water supply, soil type, and minerals.

Biotic: The living parts of an ecosystem: animals, plants, and microorganisms.

Website www.mpm.edu

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Biodiversity: The number of different species.

<u>Canopy</u>: layer that comprises most of the trees of the rain forest, typically about 100 feet in height; serves as a porous "umbrella" shelter the forest below from sun and light rains; area of highest animal activity in a rain forest

<u>Consumers</u>: The part of an ecosystem that uses producers (food makers) for its food.

<u>Decomposers</u>: The organisms that convert dead organic materials into inorganic materials.

Emergent Layer: The tallest layer of the rain forest.

Forest Floor: the ground level of the rain forest that does not get much sun or rainfall.

<u>Producers</u>: A green plant or bacterium that uses photosynthesis or chemosynthesis; the first level in the food chain.

<u>Understory Layer</u>: the layer of small tress and bushes below the level of the canopy.

Enrichment Vocabulary:

Biome	Camouflage	Condensation	Deforestation
Energy	Erosion	Evaporation	Humidity
Life Cycle	Mimicry	Mutualism	Nocturnal
Photosynthesis	Symbiotic	Research	

Procedure:

Meet Museum educator in front of the elevator on the first floor five minutes before your scheduled program start time.

