

Deforestation

Problems Facing Planet Earth

What do you already know?

- Brainstorm with your partners what you know about deforestation.
- Be ready to report out!

What we know:



What is the issue?

Deforestation:

The loss of large areas of forest.

LAYERS OF A RAINFOREST



EMERGENT LAYER

The tallest trees are the emergents, 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 treefrogs.

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.

FOREST FLOOR

It's very dark down here. Almost no plants grow in this area, as a result. Since hardly any sun reaches the forest floor things begin to decay quickly. A leaf that might take one year to decompose in a regular climate will disappear in 6 weeks. Giant anteaters live in this layer.

What do you already know about healthy rainforest ecosystems?

- Brainstorm with your partners: what do they look like? What are they comprised of? Etc.
- Be ready to report out!



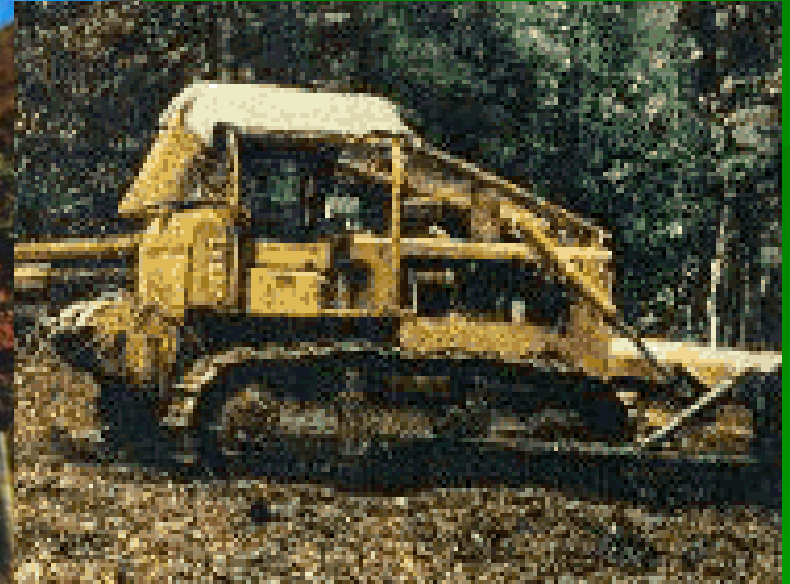
Healthy Rainforests

What do you already know about damaged rainforest ecosystems?

- Brainstorm with your partners: what do they look like? What are they comprised of? What has happened? Etc.
- Be ready to report out!



Rainforest Destruction



**More
Destruction**

Opinions so far?

- Complete the final column of your note sheet for the “What is the Issue?” section.

Who is causing it?

-Predictions??

Who is causing it?

- Agriculture** clear-cuts forest areas to provide room for livestock to eat or farms.
- Miners** clear land to mine for ore and minerals.
- Forests are clear-cut to create **products** made from wood.
- People cut down forests to make room for houses, roads, and other **developments**.
- Pollution** from factories and cars creates smog and acid rain that kills the trees.

MAN!!!

Who is causing it? (cont.)

- 80 acres of forest land is cut down every minute!
- That is 40-50 million acres a year!
- Each week, printing the Sunday edition of America's newspapers requires the equivalent of 500,000 trees.
- Malaria epidemics are occurring from rainforests being cleared

Who is causing it? (cont.)

- Rainforest wood stays in developing countries for fuel wood and charcoal.
- One single steel plant in Brazil making steel for Japanese cars needs millions of tons of wood each year to produce charcoal that can be used in the manufacture of steel.
- 5,600 square miles of Amazon rainforest were burned to the ground and replanted with pulpwood trees to make paper
- The world's biggest pulp mill is the Aracruz Mill in Brazil. Its two units produce 1 million tons of pulp a year, harvesting the rainforest to keep the plant in business and displacing thousands of indigenous tribes.

Opinions so far?

- Complete the final column of your note sheet for the “Who is causing it?” section.
- Be sure to consider how YOU are a part of the problem!

What is affected?

-Predictions?

What is affected?

➤ Species Losing Their habitat

- Pandas in China
- Once roamed through forests in China.
- Deforestation has confined Pandas to continually shrinking areas.
- Hard to find food, shelter, and mates.
- Many species of plants and animals are becoming extinct
- Half of the world's estimated 10 million species of plants, animals, and microorganisms from the rainforest will be destroyed or severely threatened over the next quarter-century (25 years) due to rainforest deforestation.

What is affected?

- **Change in Global Climate**
 - Trees limit the amount of carbon dioxide in the atmosphere
 - Increases of carbon dioxide cause significant increases in world temperatures.
 - Air and water pollution is increased
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What is affected? (cont.)

➤ Increased Erosion and Flooding

- Without the tree roots to hold in the soil, water runs across the land, taking the soil with it.
- Downstream results in severe flooding.
- For example, in Asia, deforestation of the Himalayas results in thousands of deaths from flooding in India and Bangladesh.

What is affected? (cont.)

➤ Land Clearing

- Creates lack of nutrients in the soil
- Overgrazing ruins the land
- The land is abandoned for newly cleared land
- In Brazil alone, more than 63,000 square miles of land has reportedly been abandoned in this way.

More opinions?

- Complete the final column of your note sheet for the “What is being affected?” section.
- Does this elicit any emotion or concern in YOU?

Reflect on your learning:

- Discuss:
 - How are the biotic and abiotic factors on our planet affected by deforestation?
 - Are the causes of deforestation (the reasons we cut down trees) worth the consequences?

What is being done and can be done to help?

- **Protect large areas of forestland**
 - Habitats need to be large enough for animals to roam to find food, shelter, water, and mates.
 - For example, one 660-pound mountain gorilla eats 66 pounds of food per day. They travel in groups of 6-20 members, so one group will travel 30 square miles in a year.
- **Replant Forests**
 - Loggers are required to replant trees
 - Now have restrictions on the age and size of trees that can be cut down

What is being done to help? (cont.)

- **Reduce Waste**

- Recycle

- cardboard, newspaper, office paper

- Use reusable items instead of disposable paper products

- Buy items made from recycled paper

- Reduce your use of paper

- Use a cloth instead of a paper towel
 - Use the backside of your paper

Final opinions?

- Complete the final column of your note sheet for the “What is being done to help?” section.
- What can YOU do?