

Google Earth Classroom Activity : **Understanding Deforestation in the Amazon**



The Amazon forest. Millions of acres untouched; the largest preserve of freshwater on Earth; home to a third of all plant and animal species on the planet; source of 20% of the world's oxygen. However, every year, more of the Amazon rainforest is destroyed. Rainforest land is cleared for cattle ranches, soybean farms or destroyed by logging, mining or road and dam building.

Learn how deforestation of the Amazon impacts the world and how the combination of technology and sustainable consumption can help protect the "lungs of the planet."

Learning Objectives:

- Students will learn about the rapid change of the Amazon rainforest
- Students will discuss how deforestation impacts the entire world
- Students will discuss the challenges of monitoring deforestation and how technology has helped scientists and researchers address these issues.
- Students will learn about sustainable consumption.

Audience: 4th-9th grade

Categories: Geography, Visual Art, Language Arts, Science, Social Studies

Voyager Story: I am CHANGE / Eu sou Mudança

Tools Required: Access to a Chrome Browser, Google Earth, Post-its/Paper and Google Slides or an alternative presentation or drawing application.

Additional Materials: 3 Articles from Mongabay

[Brazil's satellite monitoring reduced Amazon deforestation by 60,000 sq km in 5 years](#)

[Is Brazil's Forest Code failing to reduce deforestation?](#)

[Illegal logging and hunting threaten Yasuní isolated indigenous groups](#)

Time to Complete: 3-4hrs

Recommended Website: [Mongabay](#) (Portuguese)

Classroom Activity Guide:

Chapter A: Research important topics about the Amazon (30m)

Chapter B: I am Change and Google Earth (45m)

Chapter C: Technology and Environmental Policy (1.5hr)

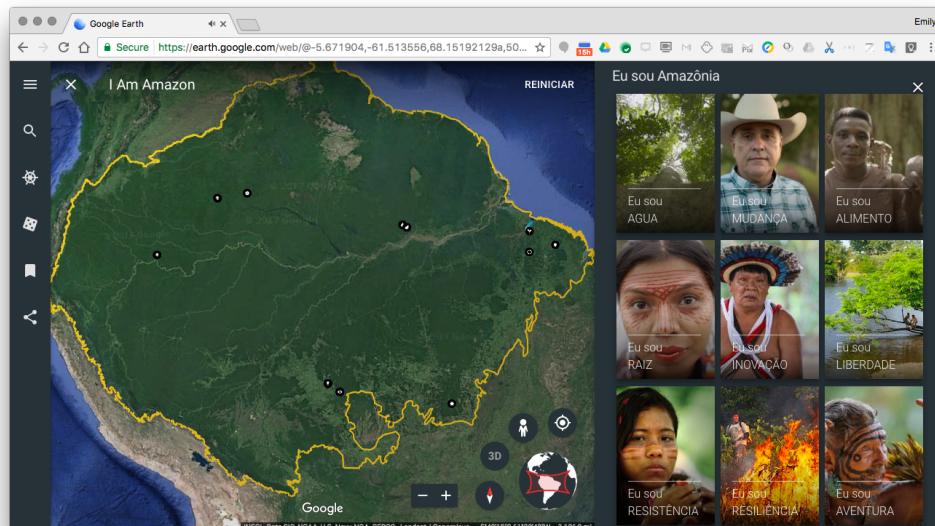
Chapter D: Action Plan (15m)

Chapter A: Research important topics about the Amazon (30m)

1. Have a discussion with the students posing the following questions:
 - a. What do we already know about the Amazon rainforest?
 - b. What would we like to know?
 - c. When you think of places like rainforests, what sort of thoughts come to your mind: beautiful mysteries and magnificent wildlife or scary nightmares full of poisonous snakes and enormous, hairy spiders?
 - d. Break you students up into small groups and assign them to research a topic such as climate change, water, food, oxygen and /or carbon cycles, wood, indigenous people and how these themes relate to the Amazon.

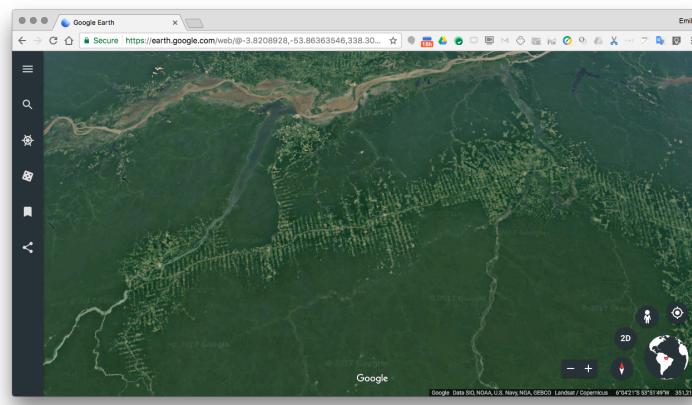
Chapter B: I am Change and Google Earth (45m)

1. Have the small groups read the Voyager Story and watch the videos within the story.
2. Once they have completed the Voyager story, ask them to use Google Earth, to observe patterns of deforestation across Brazil. They should prepare some speaking points that connect their research topic to the Voyager story on a Google slide or doc and take screenshots of where they see evidence of deforestation.
3. Teams spend 5m sharing what they have learned about the Amazon.
4. Have a larger class discussion:
 - a. What did you learn from the Voyager story?
 - b. How did it make you feel?
 - c. Why does the Amazon rainforest experience deforestation?
 - d. What sorts of things connect the fate of the Amazon rainforest with the fate of people in different countries all over the world?
5. Ask students to think about some of the reasons why it's important to conserve the rainforest e.g. to protect the species that live there. Ask them to record their ideas on post-it notes (1 reason per post-it note). These ideas can be explored by asking them to place their post-it notes in the appropriate position on a continuum—the continuum can be created by displaying 2 sheets of paper 'most important reason' and 'least important reason' separated by a real or imaginary line. Student's position their reasons on this line and can then be invited to discuss their reasoning e.g. Is the conservation of species like the river dolphin less important than expanding farmland to feed people? Why?



Chapter C: Technology and Environmental Policy (1.5hr)

1. Students should read 3 articles (you can also have the students read about the Surui and Tembe people in the Google Earth Voyager):
 - a. Brazil's satellite monitoring reduced Amazon deforestation by 60,000 sq km in 5 years.
 - b. Is Brazil's Forest Code failing to reduce deforestation?
 - c. Illegal logging and hunting threaten Yasuní isolated indigenous groups
2. Have a classroom discussion or writing activity:
 - a. How has technology helped reduce deforestation?
 - i. What are other types of technology used for forest monitoring?
 - ii. How do we see deforestation in Google Earth?



- b. Who owns places like the Amazon rainforest?
 - i. Does it belong to the indigenous people whose ancestors have lived there for centuries; the rubber tappers and settlers whose ancestors have lived there for decades or the soy farmers who moved in several years ago?
 - ii. Does the forest belong to the governments of the countries where they grow; do the waters and fish in the rivers belong to the country in which the river begins its course or the country where it enters the ocean?
 - iii. Can these places ever be owned or do they belong to all of the people and species of the planet, both now and in the future?
 - iv. Who should manage the policies of land usage?
 - v. Who should participate in making decisions about the Amazon rainforest?
3. Have students spend time researching sustainable farming practices. Are there ways in which we can still take advantage of all the incredible resources of the Amazon and not destroy the integrity of the environment?
4. Host a debate where the students either represent indigenous people of the Amazon or a large corporation (such as a pharmaceutical company or beef supplier) about the practices of sustainable consumption and why they deserve access to the land.

Chapter D: Action Plan

1. Students create an action plan of how they will help protect the rainforest inside the classroom and at home.