

Lesson Five:

The Future Tropical Rainforest

Objectives

- To gain a greater appreciation of the level and rate of deforestation in tropical rainforest areas
- To be able to produce a map of spatial data using a GIS package
- To describe and explain the relationship between deforestation and other variables

Context and Rationale

In this lesson students are introduced to the concept of deforestation and ongoing threats to the tropical rainforest biome through data relating to human disturbance. The use of spatial data and GIS will help students to find a possible connection between deforestation and a variety of other variables. Students will be able to experiment with different spatial data presentation styles and even add to the data set to explore new variables.

It is very likely that there will be the need for foundation work on human impacts (such as primary and secondary causes of deforestation) to be covered before all students will be able to fully appreciate the way that data can inform and contextualise the issue. Therefore, this lesson offers additional learning opportunities rather than giving teachers the chance to cover core course content.

This lesson is also presented as a walk-through PowerPoint presentation ‘Lesson Five Walkthrough’.

Starter

The lesson can begin with a data estimation puzzle. Showing ‘**Deforestation Rate Guess**’, students can try to guess what size of tropical rainforest is lost each year in different contexts. The data will give students the chance to visualise the size of the issue. It will test students’ ability to use simple mathematics and ratios.

Body

Using *ArcGIS Online* (www.arcgis.com), students can map the amount of deforestation against a number of variables. Students can open *ArcGIS Online* and drag ‘**Brazilian Amazon State Statistics**’ onto it. By manipulating the presentation of the data (for further guidance, please use ‘**ArcGIS Data Presentation Guide**’ or ‘**ArcGIS Data Presentation Guide Presentation**’) students can compare the Brazilian states with the highest deforestation rates with a variety of other variables. Observations from maps that they produce can be recorded and a simple describe and explain style examination question can be used by a teacher to test their observation skills.

Students can also research their own state data and include it in the ‘**Brazilian Amazon State Statistics**’ CSV file for further investigation. Students might like to investigate whether there is a relationship between deforestation and FDI, protected land area or literacy rate.

Plenary

Students can be presented with an untidy form of data presentation through *'Evaluating Pie Charts'*. Students should comment on which it does not necessarily 'work' as a good form of data presentation and what they would change to make it more useable.

Homework or Extension / Enrichment Tasks

With *'Country Deforestation Data'*, students appreciate the different ways of measuring change for the countries highlighted. Students can comment on which country has the better or worse state of deforestation based on these figures. Higher level students might like to comment on how statistics can mask the true problem a country is witnessing.

Differentiation Possibilities

Alternative resources are available for students with SEND, EAL, and those with less confidence in the subject matter:

'Alternative Lesson Five Walkthrough'

'Alternative Deforestation Rate Guess'

'Alternative Evaluating Pie Charts'

'Alternative Country Deforestation Data'