GRADE 10 STRATEGIES FOR CONSERVING BIODIVERSITY (IGCSE ENVIRONMENTAL MANAGEMENT)

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LEARNING PLAN OVERVIEW

Subject(s)	• Natural Sciences • Technology • Social Sciences • Humanities • Environmental Education • Global Citizenship Education • Sustainable Development Project
Grade Level (s)	High School (ages 14-18)
Systems Tool(s)	• Sustainability Compass • Systems Iceberg
Purpose of Using Tool	• Inquiry • Critical Thinking • Discussion • Assessment
Summary	Describe and explain the need for the sustainable management of forests and answer the question 'why are forests important?'.

Learning Objectives

Describe and explain the need for the sustainable management of forests:
- growing forests act as carbon sinks and mature forests act as carbon stores
- role in water cycle
- prevention of soil erosion

Material and Settings

Poster paper, markers.

Learning Context

This lesson plan was made for Grade 9-10 students (age 14-16 years old) for the IGCSE Environmental Management course (Chapter 9: Natural ecosystems and human activity - Topic 9.6 Strategies for conserving biodiversity), but could be used for other syllabuses.

Purpose of Using the Systems Thinking Tools

To critically investigate the world around us, stimulate discussion, guide reflection and engage in sustainable decision-making. To let students deepen their learning of the 6 conservation strategies mentioned in the IGCSE syllabus.

Learning Plan Step-by-step Description

1. **Starter: QUESCUSSION (10 min)**

Point out to learners that this long title really is the simple question 'why are forests important?'. Ask students to answer that question with another question. Let it happen for 5 min. No one needs to raise a hand to ask a question.

Students should consider the impacts of deforestation:
- soil erosion
- climate change
- in carbon dioxide levels (unit 7)

Loss of biodiversity and genetic depletion, so existing forests are important due to being a repository of biodiversity and all that leads to in terms of medicines, food, raw materials and ecotourism. Encouraged students to think about what they don't know in terms of what they do know. All the reasons why forests need to be managed sustainably can be derived from knowledge of what happens when they are not.

2. **Main lesson: Sustainability Compass and Systems Iceberg tool (50 min)**

Sustainability Compass tool

You will be using a different tool today to explore this question - the Sustainability Compass. Watch video instructions https://www.youtube.com/watch?v=pBByS6uHBzk&t=172s.

Task 1:

Brainstorm the ideas with your class before starting (Why conserving biodiversity is important?). Build your Sustainability Compass on paper (Nature, Economy, Society, Wellbeing). Use your textbook to help you.

Task 2:

Try and find connections between the different words/ideas you added to your Sustainability Compass.
Connect them with arrows to show interrelated ideas.

What are the connections that you see? Can you find a full-looped connection?

Systems Iceberg tool - case study

Watch video instructions https://www.youtube.com/watch?v=y6h2_EcOOcM&t=1s.

Task 3:
Come up with an event related to Biodiversity conservation. If you are not sure which example to use, check the ones in your textbook or open BBC News and find a current event.
Brainstorm ideas with your class (Events – react, Patterns – anticipate, Systems and Structures – design, Mental Models – transform).
Build your iceberg on paper and populate it with ideas.

Task 4:
If you start from the bottom of your iceberg, what could you change so your event becomes a more positive one?

3. **Plenary/Review: 3-2-1 (5 min)**
3 new things you have learned
2 interesting things
1 question you still have

4. **Homework /Independent Learning:**

Read the UNEP article "Why do forests matter?" https://www.unep.org/explore-topics/forests/why-doforests-matter

REFLECTION

Plusses

The tool improved students' learning, helping them to seek deeper ideas on the topic of forest conservation, but without searching for information on the internet. The objective of using the knowledge they already have and discussing it in a group helps them to better articulate their thinking.

Areas for Improvement

The activity went great, but I could have done the Sustainability Compass in one lesson and the Systems Iceberg tool in another to give them extra time to conduct the discussion, but this will really depend on the group of students and how deep they dig into this tool.

EVIDENCE

Strategies for conserving biodiversity presentation