ECOSYSTEM CAUSAL LOOPS

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LEARNING PLAN OVERVIEW

Subject(s)	• Natural Sciences • Environmental Education • Outdoor Education
Grade Level (s)	• Lower Primary (ages 6-7) • Upper Primary (ages 8-11)
Systems Tool(s)	Systems Mapping or Causal Loop Diagrams
Purpose of Using Tool	• Inquiry • Critical Thinking • Discussion • Assessment
Summary	Students use 'ecosystem cards', representing different parts of an ecosystem, to make connections between parts and think about and discuss how things impact each other.

Learning Objectives

1. To understand how different ecosystem parts interact and impact each other.
2. To understand that each part of the ecosystem plays an important role.
3. To understand that everything is connected in some way.

Material and Settings

- Ecosystem Cards
- String pieces (About 12)

Learning Context

This could be used with 2-5th grade, or even higher for more complex discussion, as there are myriad ways to think about how nature functions.

Purpose of Using the Systems Thinking Tools

It is effective for any age group and can connect a specific topic to a broader context. It can also help gauge prior information. It can also be used as a reflection activity to show what students have learned.

Impact on Participant Learning

1. Students will be able to recognize connections and relationships between things.
2. Students will be able to hypothesize or project potential outcomes of interactions between things.
3. Students will be excited about critically thinking about nature.
4. Students will use teamwork and communication to think and discuss nature's connections together.

Learning Plan Step-by-step Description

1. Hello students, all this week we've been learning about ecosystem parts. What are the 7 parts we've been focusing on? Water, soil, air, sunlight, plants, animals, and decomposers. Now that we've learned about them individually, let's take time to see how they relate to each other, and interact and impact each other.
2. We will do this by thinking about causal loops. This means looking at how things are related and impacted by each other, or the 'causes' that create changes amongst them. For example, if there is a drought of rain, then that causes the soil in the ecosystem to be drier, which affects the health of the plants, and so forth.
3. To do this we will pass out these ecosystem cards. We will use the string to explain a connection between ecosystem parts. After that, we will consider some causes and changes.
4. Conduct activity linking different parts to each other.
5. Now that we see some ways that parts are connected, let's think about how they might impact each other, or the changes they may 'cause' to each other.
6. What would happen if there was a drought? The soil gets dry, the waterways diminish, the plants suffer, and the animals likely suffer.
7. What would happen if there was a flood? Some plants and animals may suffer.

8. What would happen if many plants were wiped out due to disease, or logging, or fire? Many animals would have a tough time adapting, soils might erode more.

Reflection: Plusses

This activity is very simple but can be very effective for pre, during, and post learning at all ages.

Areas for Improvement

Students could create the ecosystem cards if desired. This activity could also be modified in a variety of ways, such as mingling and swapping cards.

EVIDENCE

