

# Biome Biodiversity Game

## Global resource trade

### General Overview

Students will break into five groups and become teams for different biomes. Each group must choose a “Biome Captain” and an “Exchange Ambassador”. The five biomes are:

- 1) Deserts and Desert Alpine (Renewable energy: wind power, solar power)
- 2) Tropical Rainforest (Life source: oxygen, medicine, food)
- 3) Taiga and Temperate Forest (Renewable energy: geo-thermal, wave)
- 4) Swamps, Mangroves, and Coral Reefs (Life source: oxygen, toxin filter, food)
- 5) Urban City (Technology)
- 6) Teacher (Fossil fuels and nuclear power)

On note cards make 10 Renewable energy and Life source cards for each Biome. Or you can print the Resource Cards page.

Each biome has a renewable energy source and a world life source (ecosystem services). Each team has 100% human health and 100% natural biodiversity (for their biome). Each team has 5 minutes to trade. Only the Ambassadors can get up and trade; if any other team member gets up, their team will be disqualified and will lose their Biome. A Biome captain must replace the Ambassador after each turn by picking a new Ambassador for the team.

Each group must get 2 renewable energy sources other than their own and 2 life sources other than their own after each turn. The urban group only needs 4 units of energy each turn. A technology unit can increase the human health 5% (a team can only use one Technology unit each turn). If a team does not get two renewable energy sources at the end of each trade turn, they can get fossil/nuclear from the facilitator (teacher) at the cost of -10% human health and -10% biodiversity for the team’s biome and -5% human health and -5% biodiversity for the other Biome teams. If a team does not have two units of non-renewable (fossil fuels from teacher) and or renewable energy, they will lose -50% human health. If a team does not bring back two life sources each turn, they will lose -20% biodiversity.

After explaining the game rules and concepts, ask students to write their predictions for the game before playing. Then write a summary after playing the game.

Questions for the class after the game:

- 1) Why would fossil fuels affect the health of everyone?
- 2) Explain how each Biome is connected to each other to maintain global biodiversity.
- 3) Do you feel the world is utilizing renewable power as it should, why or why not?