Activity Guide - Energy

Power Generation Dances/Electric Grid Game

*Slides: 9-19

Overview

Objectives

- Understand how different types of energy are generated and used in the real world
- Understand limitations of different sources of electricity
- Using observation and nonverbal communication to interact/cooperate with peers
- To imagine and embody different types of energy

Guiding questions

- What would it feel like to absorb energy from the sun? (solar)
- Where did fossil fuels come from? How can we use their history to make a dance movement for fossil fuels?

Materials needed

- None (labels of game assignment may be useful)

Space needed

- Whole classroom with open space or contained outdoor space

Time allotment: 15-25 minutes

Number of students: All students

Instructions

Power Generation Dances -

- Break up students into 4 groups and have each group come up with a simple dance movement to represent each type of power generation (wind, solar, nuclear, fossil fuels)
- 10 Seconds of Power Generation
    - Students perform wind/solar dances for 0-2 seconds, 2-4 seconds nuclear, 4-10 seconds coal/natural gas
- Remember these dances! They will be used later on.

- Video - show example power generation dances for the 4 types given

Electric Grid Game -
Demonstration videos included in slides

Setup - pass around label cards (if desired) to all the students. The cards will assign:

- **Generator:** Solar, Wind, Nuclear, or fossil fuels
- **User:** Home, Factory, School

Game goal: Have all users "supplied" with electricity with no excess or shortage

Rules:

1. Users signal (jumping/waving) when they need electricity and signal when they are charged
2. Generators can deliver electricity to a jumping user by doing their energy production dance in front of the user. User stops jumping to mirror dance (electricity transfer)
    a. Energy production dance is unique to each energy source (see prev. activity)
    b. Each generator can only supply 1 user at a time
    c.
3. If a user is requesting energy for more than a few seconds without a match then they fall to the ground and the grid breaks! Round over!!
4. Narrator (teacher) Announces time of day **and** if the sun is shining or the wind is blowing.
    a. Wind and solar have **option** to produce if their resource (wind/sun) is present
    b. Example: wind blows mostly at night but there is no sun
    c. In summer there is plenty of sun, less sun in the winter
5. (Optional: suggested last rounds) Batteries can stabilize the grid as a user and generator!
    a. Assign a handful of kids as batteries that are initially a user but become charged and then can act as a single use "generator"
    b. Demonstration video included in slides