

Natural Resource Demonstration Game:

Students will participate in simulations that demonstrate society's use of renewable and nonrenewable energy resources to understand the factors that make a renewable energy resource sustainable. Students will deepen their understanding of the nature and role of energy in the world and daily lives accompanied an increased ability to make informed energy use decisions based on an understanding of impacts and consequences.

Next Generation Science Standards:

HS-ESSE-2 Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratio.

Engaging in Argument from Evidence

Disciplinary Core Ideas

ESS3.A: Natural Resources,

STS1.B: Developing Possible Solutions

Crosscutting Concepts

Influence of Science, Engineering, and Technology on Society and the Natural World

Science Addresses Questions About the Natural and Material World

Activities:

20 Questions

Defining different natural resources

Student receive a card with a nonrenewable or renewable resource on it then work to identify the resource. As students guess their resource they should form a group with others who have like resources. Students then discuss their resource and develop a common definition that can be shared with the class.

Generations

Understanding the finite quantity of non-renewable resources

Volunteers are randomly assigned as different generations. As generations help themselves to natural resources upcoming generations see the resources diminish. Students discuss what is happening with the world's resource supply.

Greed vs. Need

Learning to manage renewable resources

Students work in small groups with a supply of a renewable resource that is replenished after each round of play. Each student can take freely from the team supply but they must manage their resources to make it to the next round.

Synthesis

Strategizing to manage resources with increased variables.

Students synthesize the concepts of the first three activities in this final exercise. By increasing the variables in energy distribution and supply students are challenged to think creatively about managing energy portfolios and the resources they need for long term sustainability.

Additional supplemental materials are available upon request.