

Resource Activity

Grades 4-8th

Extensions grades 9-12

Big Ideas: Fairness/Equity, Interdependence, Limits

Our earth has finite resources, things we need an use every day.

To live sustainably, we must satisfy the needs of today and tomorrow’s societies, while continuing to protect biodiversity and preserve precious ecosystems. Consider the products you use and consume each day, and the resources used to make those products, directly and indirectly, through product life cycles.

Activity Description:

This activity will introduce students to the basic needs of a society while exploring global sustainability opportunities and challenges of resource scarcity. In small groups, the class will try to provide those basic needs for their countries, using only the resources given them.

Essential Questions:

- Who decides limits on a resource?
- How are human and natural systems interrelated?
- How do our actions impact others?

You will need:

6 Student Instruction/Transaction Logs
Chart-Paper and Teacher Notes for Debrief

Materials for Country Envelopes

2 Scissors	10 Paper Clips
2 pencils	1 Glue Stick
1 Ruler	1 blue marker (thick)
1 orange marker (thick)	5 sheets white paper
3 sheets yellow paper	2-6” orange paper squares

2-6" white paper squares	3 sheets blue paper
1 sheet purple paper	3 Sheets green paper

Time:

3-45 minutes class periods

Standards

Next Generation Science Standards

- 4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.
- 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem
- HS-ESS3-1. Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.
- HS-ESS3-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios

EfS Standards (USPESD)/Excellence in Environmental Education Guidelines (NAAEE)

2.3 Economic Systems

- Resource Scarcity: Students analyze the use of a local natural resource (e.g. animal, mineral, vegetable, lumber, fish, and minerals) and consider the resources' ability or inability to regenerate at a sustainable level.

2.4 Social and Cultural Systems

- Resource Distribution: Students compare the distribution of a common resource (e.g. money, food) of different groups of people in their own community, region, nation, or world and explain how this resource distribution affects sustainability.
- Multiple Perspectives: Students consider an issue or challenge related to sustainability, through a variety of lenses or perspectives and they explain how approaching that issue or challenge from different perspectives may result in different decisions and outcomes.

Before the Activity:

Resource materials are made up ahead of time and put into separate envelopes.

This activity is configured for 30 students (5 groups of 6 students). If you have fewer students use fewer "Country Envelopes." If you have more students, see "Variation/Extensions" document.

Envelope Preparation: Organize the materials above into 5 Country Envelopes as follows.

Country 1	1 pair scissors, ruler, 5 paper clips, 2 pencils, 2-6" orange paper squares, 1-6" white paper square
Country 2	1 scissors, 1 glue stick, 2 sheets blue paper, 1 sheet white paper
Country 3	1 blue marker, 1 sheet green paper, 2 sheets white paper, 2 sheets yellow paper
Country 4	1 sheet green paper, 1 sheet yellow paper, 1 sheet blue paper, 1 sheet purple paper, 1 sheet white paper
Country 5	5 paperclips, 1 orange marker, 1 sheet green paper, 1-6" white paper square, 1 sheet white paper

Before you begin:

- 1) Grouping: Divide students equally into 5 Groups
- 2) Initial Information: Provide each group with **one** *Student Instructions and Transaction Log*
- 3) Country Identity: After students are seated in their small group, read the instructions before they begin. 6 jobs are described on the *Student Instructions and Transaction Log*. Be clear with students that the only student allowed to "leave the country" is the Explorer, and the only student recording resources is the Scribe. When a group is finished reading, they should raise their hands.

Citizen Jobs Summary

Citizen	Job	Job Description
1	Leader	<ul style="list-style-type: none"> • Is in charge of the country but cannot travel; • Supervises all tasks; • Approves any trades or donations.
2	Explorer	<ul style="list-style-type: none"> • Only member who can search other countries for resources; • Must negotiate with that country's supply holder.
3	Reader	<ul style="list-style-type: none"> • Reads instructions aloud for assembling each item on the "basic needs" chart.
4	Supply Holder/ Courier	<ul style="list-style-type: none"> • Keeps track of resources (like banker in "Monopoly") and works with scribe to record transactions; • Negotiates with other countries' explorers; • Courier delivers finished products to teacher.
5	Scribe	<ul style="list-style-type: none"> • Records resource/materials and trades or donations.
6	Builder	<ul style="list-style-type: none"> • Produces "basic needs" with support from fellow country citizens.

Activity Instructions:

- 1) When Students finish reading the *Student Instructions and Transactions Log* they should raise their hands. The first group to raise their hands gets the envelope marked Country 1. The second group gets country 2 and so on. Countries get resource envelopes and students create basic needs symbols, by either using resources from their envelope, or trading, donating, and borrowing from other countries.

6 BASIC NEEDS TASKS: As soon as countries begin working, they will discover that each country has different access to resources. Within their defined roles, countries will begin to understand the necessity of global relationships and will need to interact in structured ways, as defined by their job descriptions.

(DO NOT share this visual with students)

Each group must fill the "Six Basic Needs" of their country. These needs must be met by completing the tasks listed,



precisely as noted.

1. **FOOD** - make 4 strips of green paper, each 3"x1".
2. **CLOTHING** – make an orange t-shirt 4" high.
3. **SHELTER** – make a white square 2" on each side and attach an orange roof to one side of the square.
4. **EDUCATION** – make a 4-page book.
5. **COMMERCE** – make a 4-link paper chain out of yellow paper.
6. **WATER** – make a blue circle 2" in diameter.

- 2) Teacher scores each team's Transaction Log while small groups begin a reflection/discussion within their 'Country.'

Scoring

Share the point values below with students after they complete the simulation.

Points	Country Action
2	Any single task finished accurately
1	Any single task finished but NOT accurate
1	Each donation of a resource to another country
2	Each single, fully-completed task
1/2	Each traded or loaned resource
10	Country receives an additional 10 points if all 6 tasks are completed accurately

Debrief and Reflection Questions:

1. How did the game go?
2. What was fair or unfair about the game
 - a) were there enough resources?
 - b) How were they shared?
3. What helped your group finish the task faster than other groups?
4. Do you think you were successful?
5. How do you think the scores should have been assigned?
6. What assumptions, beliefs or values ("Mental Models") guided your country's decisions?
 - a) Should others have a say if resources are being misused?
 - b) Who decides whether the USA needs resources from other countries?

Additional Debrief Questions on Key Economic Concepts – Grades 9-12

1. What observations did you make regarding each country's:
 - a. economic and/or socioeconomic goals?
 - b. goods and services produced; methods of production and distribution employed?
 - c. use of land, labor and capital?
 - d. whether and which basic needs could be guaranteed for all?
 - e. where decision-making authority lies?
 - f. level/degree of government involvement?
2. Which countries exhibited a capitalist structure? Which were more socialist? What type of economic systems (market, mixed or command)? Explain referring to evaluation list (items above).
3. Were there any subsistent characteristics to any of the countries' economies and/or social structures? If yes, explain which characteristics. If no, explain characteristics that could have been included to make it more Buddhist or subsistent. Be specific.
4. Explain the opportunity cost of pursuing any one of your country's goals.
5. How do economics and ecology interact in your country's society? Are they in harmony or conflict? Explain using specifics from your economy, particularly use of natural resources and the concept of scarcity.
6. Which problem(s) did you have to address in your economy? How did you respond? How was it consistent or not with your economic system described above in question #2? Be specific.

Variations and Extensions: (9-12th grades)

Students will be given 10 minutes to reflect in their groups on what they would do differently to create a more sustainable "Country" and "World", including governance and laws, scientific/research, industrial and commercial development, etc. They should generate a list of factors that contributed to the success or collapse of their society.

Easter Island Case Study: Where did society go wrong? What led to that particular society's ability to thrive or to its collapse?

Student Projects: Create a PowerPoint presentation with your hypothesis of what a sustainable society would look like. Include discuss of leadership and governance, economy, culture(s) that would evolve.

Handouts and Resources

Student Instructions and Transaction Log

<p>STEP 1</p> <p>A. Read the jobs chart aloud as a group.</p> <p>B. Decide which jobs each group member will have.</p> <p>C. Provide a few details about your country's major biomes.</p> <p>D. Name your country and raise your hands!</p>	<p>STEP 2</p> <p>A. Your teacher will deliver your <i>Resource Envelope</i>.</p> <p>B. Meet the 6 Basic Needs for your citizens (see next page).</p> <p>C. Log all transactions between countries.</p> <p>D. Deliver finished products to your teacher.</p>
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6	Builder	<ul style="list-style-type: none"> • Produces "basic needs" with support from fellow country citizens



Name of Country: _____

Leader: _____

Scribe: _____

TRANSACTION LOG

(v)Please check one:

COUNTRY NAME:	RESOURCE TYPE:	Traded?	Shared/ Donated?	Loaned?