OBJECTIVE:
The learner will identify the natural resources consumed for the items used in daily life and will demonstrate the dilemma of finite resources and escalating human population pressures.

ACTIVITY IN BRIEF:
This activity is similar to Musical Chairs. Chairs represent natural resources and as they are depleted they are removed; however, everyone remains in the game and more people are added to simulate an escalating population. The participants must share chairs and balance on laps to demonstrate increasing stress on our continually diminishing supply of resources.

MATERIALS:
Chairs to equal half the number of learners, 20 assorted objects (see list in procedure), resource cards, and crayons

GRADE: K-6

SUBJECTS: Physical Education, Science, Language Arts

TIME: Preliminary 30-45 minutes

GROUP SIZE: Works best with 15 or more

SKILLS: Classification, discussion, evaluation, kinesthetic, listening, listing, observation, public speaking, small group work, writing

VOCABULARY: renewable, nonrenewable, raw materials, bauxite, consumption, finite

CONCEPTS: Everyone produces waste. Some resources are rendered unusable. Each citizen can reduce the volume of waste she/he produces
Musical Resources

PROCEDURES: Place twenty objects on the floor, (i.e. pop can, aluminum foil, perfume, plastic bag, paper sack, drinking straw, comb, pencil, bottle, paper clip, ruler, etc.) The learners will sit in a circle around the objects. Each learner in turn will choose an item and name the natural resource used to produce it. (NOTE: The leader may need to help with naming the basic raw materials used. See background in the appendix.) A list will be made of those natural resources named. Discuss renewable and nonrenewable. Circle all nonrenewable resources.

Next divide the learners into two groups. Half of the learners will become the people of the world (the players) and the other half will be the “unborn” people of the world (they will sit out and watch until they are “born” and called upon to play). See appendix for a song they could sing for the music.

Chairs will be arranged haphazardly to fill a large circular area representing the earth. (To start the game, there will be a chair for each beginning player.) Each chair will have a 4” by 6” index card of paper with a name of a resource printed on it. (i.e., Iron, Cotton, Petroleum, Wood, Bauxite, Silica) Some resources may have to be used more than once. The card will be sectioned into 6 little squares.

<table>
<thead>
<tr>
<th>IRON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

TWO CHAIRS WILL BE IDENTIFIED AS “WILD” (i.e., by tying ribbons on them). Each player will be given a crayon.

Tell the learners they represent the people of the world. The chairs represent the resources of the earth. When the music plays, the people will mill about the earth looking for natural resources to use for their daily needs. There are plenty of resources for everyone. When the music stops, everyone will find a place to sit. At this time, each player is instructed to color in one of the little squares on the chair he/she is sitting on to represent the consumption of that particular resource.

When the music begins, the procedure is repeated, again instructing the players to fill in a little square when the music stops.

Before starting the music again, tell the learners there are more and more people being born every day, so add three or four new members to the world’s population. (Give a crayon to each new player.) Begin the music; however this time when the music stops, there will not be enough chairs for each to have his/her own, so those left without one must find someone who is willing to share his/her chair seat or lap. Again, each person must fill in a box on the chair where he/she is sitting. Everyone must be sitting before the music begins again.

Repeat the procedure, adding additional players with each new round. The wild chairs are free—no boxes to fill! WHEN ALL THE SQUARES ON ANY ONE PAPER ARE FILLED, THE CHAIR IS REMOVED FROM THE EARTH. (This is to represent the consumption of that natural resource. In this case, any or all occupants must move to the WILD CHAIR where resources are still available.) Continue this process until nearly all the chairs are gone, and all the learners are balancing several people deep on the two WILD CHAIRS.

QUESTIONS:
1. What would happen if the game continued and we kept on populating the earth and consuming our resources?
2. Was it sometimes difficult finding someone to share a chair or lap? Do countries have difficulty sharing resources?)

3. How did it feel to be crowded on one chair? How did you feel when a resource (chair) was removed?

4. Is there a similar problem on our Earth? Are some nations using resources more rapidly than others? What resources are the closest to being depleted? (For speculation and discussion purposes.)

5. How could we alleviate the stresses on our natural resources? Make a list of ways to conserve our resources. (i.e. reducing consumption of gasoline, slowing global population growth, lowering the thermostat, using less hot water, rejecting the purchase of unnecessary items, and of course recycling whenever possible)

6. What does the WILD CHAIR represent? (unknown reserves of resources)

Divide learners into small groups and give each group the name of one of the resources. Each group will make a list of actions people could take to conserve that resource. Share the ideas with the large group.

MY LITTLE BIT: I will choose one item from our list that I do not already do, and I will practice it for a week. I will challenge myself to make it a habit.

WE CAN MAKE A DIFFERENCE: We will make a large cutout of the earth to display on a bulletin board. Our leader will have available little colored dots; each color representing a different resource (i.e., yellow for petroleum, green for wood, etc.)

Each week we will volunteer to stand up and tell how we conserved a resource during the past week, and we will receive a colored dot representing the resource we conserved to stick on our earth. (The dot may be placed where that resource is found.)

EXTENSIONS: Play musical resources again, but this time when a player reaches the chair, allow him/her the option of stating a way the resource can be recycled or conserved. If the player can think of a way to conserve, not consume, the resource, the boxes will not have to be filled in. The game can go on indefinitely when the resources do not have to be consumed.

One person could be chosen to represent the U.S.A. The U.S.A. uses over 20% of the world's resources, so the U.S.A. could always have first chance at a chair and would not have to share. How do the others feel toward the U.S.A. in this game?

Discover where the reserves of petroleum, bauxite, tin, etc. are located and place them on a world map. Choose an item and research where the raw materials (natural resources) come from. Be sure to include the energy needed to produce the item.

Find out how much energy is saved when an item is recycled instead of being made from new resources.

EVALUATION: The learners will name 10 items used daily and trace them back to their original natural resources.

BACKGROUND: Our natural resources are truly finite. We face the challenge of declining resources. We must reduce our rate of use to make these resources last and we must recycle whenever possible.