

# One for All



## Introduction:

Renewable resources, such as trees or fish, can be maintained if managed properly. But if not given an opportunity to reproduce, these resources can be exhausted quickly, especially as the demand for the resources grow. In managing these resources, it is important for people to use them cooperatively and to not sacrifice long-term gain for short-term profits. In the following activity, students play a game where cooperative decisions must be made if all are to benefit.

## Materials:

Tokens (such as poker chips), about 200 chips  
Candies or other reward  
Music

## Procedure:

1. Count out 30 chips.
2. Seat 10 students in a circle.
3. In the center of the circle, place the pile of 30 chips.
4. Read the following rules carefully to the students. Allow time for questions and answers to make sure students understand the rules of the game thoroughly.

### Rules

- You may not talk to anyone during the game or communicate with hand or facial gestures.
- The chips belong to all of you, to the group.
- Music will be played, and while it is playing, each of you may take chips out of the pool of chips in the center.
- You may not put chips back into the pool once you have taken them out.
- Each of you may trade in 10 chips for a piece of candy.
- As soon as the music stops, I will double the number of chips left in the pool at that time, and then continue the game.
- There will never, however, be more chips in the pool than there are at the start of the game. This is the maximum number of chips the pool can hold.

## Concept:

Sustaining our natural resource base requires conservation and the cooperative use of resources held in common.

## Objectives:

Students will be able to:

- Identify a strategy that would produce a sustainable use of resources in a simulation game.
- Draw parallels between the chips used in the game and renewable resources upon which people depend.
- Draw parallels between the actions of participants in the game and the actions of people or governments in real-world situations.

## Subjects:

Civics, Economics, Family and Consumer Sciences, Geography, Science, Social Studies

## Skills:

Finding cooperative strategies, following discussion

## Method:

In a simulation, students desiring to draw renewable resources from a common pool determine short-term consumption strategies that will preserve a long-term supply of the resource.



5. Start the music and watch what happens. Typically, the players take all of the chips in the first round, completely emptying the pool. If this happens, point out that, as it's impossible to double zero, the game is over. Ask if they'd like to try again. Each student must return all his or her chips to the pool. Start the music and the game again. If the players leave chips in the pool at the end of the first round, double the number of chips (not to exceed 30) and continue playing. If any player accumulates 10 chips, they can trade it for a candy.
6. After the students have played two or three rounds, ask three additional students to join the circle of players and continue the game. After another two rounds, ask three more students to join the circle (you should now have 16 players in the circle).
7. As the game continues, watch to see if players begin to come up with cooperative strategies for sharing the chips even without communicating. If not, you may allow them to talk in later rounds. Once you see that they are starting to work toward the same goal, you may stop the game and start discussion. (You may want to have enough candy on hand so that all of the students get a piece.)

#### Notes to the leader:

**DO NOT** explain the significance of the chips before playing the game. The rules are the only instruction the players get.

When doubling the chips in the pool, remember there can “never be more chips in the pool than there are at the start of the game, this is the maximum number of chips the pool can hold.” Think of the chips in the pool as fish in a pond. The pond only has enough room and food to support as many fish (or chips) as there were in the pool at the start of the game. That number is the pool’s “carrying capacity” for chips.

After that, ask students how they feel about the way the game worked out. As a group, help the students think of ways they could cooperate to allow more of them to get their 10 chips without depleting the pool of resources. Play again using these strategies developed by the students.

#### Discussion Questions:

1. What do the chips represent?

*Renewable resources, such as fish or trees. (Coal, gasoline, oil, iron, aluminum are examples of nonrenewable resources, and therefore are not applicable in this exercise.)*

2. Can we draw any parallels between the way the group treated the chips and the way individuals, and society as a whole, uses or overuses renewable resources?

*DEFORESTATION: cutting trees down without planting replacements or at a rate at which newly planted trees are not given time to grow to maturity before they too are harvested; or cutting down old-growth or tropical rainforests which can never be replaced. OVERFISHING: taking so many fish that not enough are left to reproduce and replenish the stocks for the next year.*



*OVERFARMING: depleting the soil of nutrients without giving it time to regenerate. (Conversely, we overwhelm nature by producing too much; the rate at which we produce carbon dioxide and other forms of pollution far out paces the time required by air and water to clean themselves.)*

3. Imagine that each of you playing the game represents a different country. What are some resources that nations may have in common?

*Oceans, air, fish, coral reefs, rivers, etc.*

Is it realistic for nations to share these resources cooperatively?

4. How many chips were taken out of the pool by each player in the different game variations? How many candies (or other rewards) did this generate? How did it make you feel about other members of the group?

5. Why do you think more players were added in the middle of the game? What do they represent?

*The additional players represent an increasing population while the amount of resources stays the same, demanding even greater cooperation for equitable distribution.*

6. How did talking about the game make you play differently? After discussing strategies, did it seem differing attitudes were behind different ways you played the game? Why did some participants take as many chips as they could reach and others left some behind? How did this make you feel?

7. Have you experienced a similar situation at home, with friends, in your community? (It may help to provide an analogy, such as several people in the house competing for hot water in the morning.) How, in the long run, can more benefit if individuals refrain from taking too much? What sort of attitude do we need to have as individuals to achieve the goal of the greatest benefit for all?

This activity was adapted from "Something for Everyone," found in Teaching Population: Hands-on Activities, Population Connection, 2008., which was adapted by permission from an activity developed by Kurt and Ursula Frischknecht and Karen Zimelman in Thinking Globally and Acting Locally: Environmental Education Teaching Activities by Lori D. Mann and William B. Stapp, ERIC/SMEAC, 1982.