APES Tragedy of the Commons Lab Activity

Pay close attention to procedures & data collection. This activity will be your first formal lab write up.

Purpose:

The purpose of this simulation is to explore how resources are used when they are available to multiple parties.

Objective:

Harvest as many fish as you can without destroying the ocean.
Use your experience to understand the conditions leading to the "tragedy of the commons."
Devise strategies to avoid depletion of a limited common resource.
Apply your experience in class to global environmental problems.

Materials:

- Goldfish crackers
- Plastic bowls (lakes) & sleeves of fabric to cover
- Straws

Procedure:

Divide into groups of 4. Each group should sit in a circle around the "lake". The goal of this activity is to see how each of you will behave when resources are not privately owned. The fish represent resources that can be harvested from the lake. Each fish is worth $10. The more fish you catch, the more money you will receive. You must fish by sucking up the "fish" from the "lake" with straws.

- ◇ You will get a chance to fish once a year (which lasts one minute) to determine your income for the year.
- ◇ You should rotate your fishing order every year so that everyone has a chance to go first.
- ◇ **It is your choice of how many fish you take, however, you must catch at least one fish to stay afloat.**
- ◇ Each fishing session represents one generation of fish.
- ◇ The fish in your lake will reproduce once a year. [See your teacher at the end of each year - each remaining fish is able to spontaneously reproduce and make one new fish (4 fish become 8, i.e., to a maximum of 16, which is the carrying capacity of the lake)].

Keep the fish that you "catch" in front of you.

When your group runs out of fish, the game is over for you.

A bonus will be given to the student in each group who has accumulated the most wealth at the end of the entire simulation.

Fish Data Table: Round 1 Blind fishing. No talking allowed!

Year #	# of Fish at beginning of year	# of fish taken by 1st fisher	# of fish taken by 1st fisher	# of fish taken by 1st fisher	# of fish taken by 1st fisher	Total fish left at end of year
1						
2						
3						
Total	XXXX					XXXX

Group Totals:

Name				
Total Fish Harvest				
Total Income				

Fish Data Table: Round 2 Open fishing. Free exchange of information encouraged!

Year #	# of Fish at beginning of year	# of fish taken by 1st fisher	# of fish taken by 1st fisher	# of fish taken by 1st fisher	# of fish taken by 1st fisher	Total fish left at end of year
1						
2						
3						
Total	XXXX					XXXX

Group Totals:

Name				
Total Fish Harvest				
Total Income				

Analysis & Discussion Questions:

1. Did anyone in your group take too many fish? How did that make you feel? Did everyone try to take as many as possible? Why or Why not? Does society reward those with the "most"?

2. Did anyone sacrifice the # of fish, for the good of the community? Why or why not? Does society ever reward that type of person?

3. During round 2, did your group discuss your actions and strategies before each harvest? If so, briefly relate the discussion. Did each member carry out the plan that was discussed?

4. In Game Two... **how** did your strategy change, if at all? Does it make a difference to know what the rewards are?

5. Is it possible to maximize the number of fish caught/person **AND** the number of fish remaining in the pond **at the same time**? Why or Why not?

6. Your fish harvest was worth money. Why would it be better to have money than fish (i.e. what can you do with money that you can't do with fish?)?

7. Think of a **local commons** that you are familiar with. [parking lots, bathrooms, Cafeteria,, etc.] Do similar situations arise? Explain. HOW might those problems be solved?

8. What are some **natural resources** that are **common** resources?

9. What are the **global commons**? Are these being used wisely? Why or why not?

10. What can people do to use these resources most wisely?

Conclusion: What is the "Tragedy of the Commons"?

The "tragedy of the commons" is the situation in which individuals use a common resource for their own personal gain and degradation of the common resources results, leading to a decrease in yield for both the group and the individual. The use of common resources is a tricky issue...who has rights to it? How are responsibilities shared?