TRAGEDY OF THE COMMON GOLDFISH ACTIVITY

INTRODUCTION:

The purpose of this simulation is to explore how resources are used and exploited when they are available to multiple parties. 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? Who decides who gets to use the resource, and how they get to use it, and how much they get to use it?

MATERIALS:

Goldfish crackers

Plastic bowls (lakes)

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.

Each one of you represents the head of a family that is starving. In order for your family to survive, you must catch enough **fish** for them to eat. The only food source is a small local lake which can accommodate 16 fish. 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) and each time you fish you may take 0, 1, 2, 3 or 4 fish from the lake. 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, if you only take one fish, your family will be hungry.** If you take more than 2 fish, you can sell them for a profit. 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)]. Keep the fish that you "catch" in front of you. You may eat the fish you keep for your family after each round.

When your group runs out of fish, the game is over for you (put 0 fish in any remaining boxes in your table). Play a second game, then pick up reflection questions from your teacher.

Please do <u>not</u> talk or communicate while fishing!!

Goldfish data table – GAME 1

Name of Lake: _____   Number of people in your group: _____

YEAR	Number of fish in the lake[after reproduction]	Number of fish you caught	Number of people with not enough to eat	Number of People with just enough to eat	Number of people with a profit
1	16				
2					
3					
4					
5					
TOTAL					

Goldfish data table - GAME 2

Name of Lake: _____   Number of people in your group: _____

YEAR	Number of fish in the lake[after reproduction]	Number of fish you caught	Number of people with not enough to eat	Number of People with just enough to eat	Number of people with a profit
1	16				
2					
3					
4					
5					
TOTAL					

Tragedy of the Commons Reflection Questions: Answer on a separate piece of paper.

1.) How many years did it take before the fish where depleted in game one? _____

2.) In game two, did your strategy change, if at all? What did you change?

3.) 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?

4.) Read the descriptions of the "Tragedy of the Commons" phenomena in your book on p. 12-13. Define the following terms:

Open –access renewable resource

Sustainable yield

5.) What is the sustainable yield for the goldfish cracker pond in this activity. Explain your answer.

6.) What are some factors that affect what the level for the sustainable yield is for a particular resource, such as fish in a lake?

7.) What are some methods that can be used to help preserve open-access resources?

8.) Read the section on the textbook on page 256 that discusses industrial fish harvesting methods. What percentage of the world's commercial fisheries are being fished at or beyond their estimated sustainable yields?

9.) Name and explain some of the fishing techniques that are resulting in a higher harvest of fish.

10.) What are some natural resources that are open-access resources?

11.) Name at least 3 global commons. Are these being used wisely? Why or why not? What can people do to use these resources most wisely?