|  |  |
| --- | --- |
| Quiz(14pts) |  |
| Completeness(10pts) |  |
| **GRADE:** |  |

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ APES

Mr. Crisci

**Lab: I’VE GOT MINE** Date: \_\_\_\_\_\_\_\_\_\_

**INTRODUCTION:**

The purpose of this simulation is to explore how resources are used and exploited when they are available to multiple parties. The use of common resources is a tricky issue...who has rights to it? How are responsibilities shared? Can a “tragedy of the commons” be prevented?

**MATERIALS:**

1. Fishing Log (This is your data table)
2. Goldfish crackers (resource) (colored Goldfish are “rare”)
3. Plastic bowls (lake)
4. Chopsticks (fishing poles)
5. Paper towel or plate (boat)
6. Chopstick helpers (better technology)

**PROCEDURES (RULES):**

1. Divide into groups of 4-6. Each group should sit in a circle around the "ocean". The goal of this activity is to see how each of you will behave when resources are not privately owned.
2. Each one of you represents the fisherman which will reflect your grade on this lab. In order for you to get a good grade on this lab, you must catch enough **fish** for them to pass. The only food source is an ocean, which can accommodate 40 fish max. You must fish by sucking up the “fish” from the “ocean” with “poles”. Over time, you may be given new technology or be allowed to use new methods.
3. You will get a chance to fish once a year during the fishing “season” (which lasts 30 seconds) and each time you fish you may take any number of fish from the lake. **It is your choice of how many fish you take, however, you must catch at least one fish or you will get a zero (and you are out).** Each regular fish is worth 2 points, “rare” fish are worth 5 points. The more fish you catch, the more points you can earn.
4. The fish in your ocean 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 40)]. Keep the fish that you “catch” in front of you.
5. A bonus of ten points will be given to the student in each group who has accumulated the most fish at the end of the entire simulation with another ten points for the high student in the class – ties result in no bonus being awarded.
6. Record you data in the chart for part 1 on the next page. When your group runs out of fish, the game is over for you.

**Please do not talk or communicate while fishing!!!**

**PART 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Number of fish in ocean (start of each round)** | **Number of fish I caught** | **Number of fish caught by everyone** | **Number of fish left** |
| **Round 1** |  |  |  |  |
| **Round 2** |  |  |  |  |
| **Round 3** |  |  |  |  |
| **Round 4** |  |  |  |  |
| **Round 5** |  |  |  |  |
| **Round 6** |  |  |  |  |
| **Round 7** |  |  |  |  |
| **Round 8** |  |  |  |  |
| **Round 9** |  |  |  |  |
| **Round 10** |  |  |  |  |

**PART 2**

1. Fishing continues, but we are adding new technology. You may now use your chopstick helpers on your chopsticks while fishing.

2. All other rules apply.

3. Record you data in the chart in Part 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Number of fish in ocean (start of each round)** | **Number of fish I caught** | **Number of fish caught by everyone** | **Number of fish left** |
| **Round 1** |  |  |  |  |
| **Round 2** |  |  |  |  |
| **Round 3** |  |  |  |  |
| **Round 4** |  |  |  |  |
| **Round 5** |  |  |  |  |
| **Round 6** |  |  |  |  |
| **Round 7** |  |  |  |  |
| **Round 8** |  |  |  |  |
| **Round 9** |  |  |  |  |
| **Round 10** |  |  |  |  |

**Discussion and Summary 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. What is the carrying capacity of the lake?
4. Is it possible to get a good grade on this lab by catching enough fish and keeping the population of fish at a sustainable level? Explain:
5. Using the above question, mathematically, what would be the best strategy for harvesting a common resource?
6. What is the maximum sustainable yield (what amount can be harvested) for your lake each year?
7. Your fish harvest is worth points toward your grade; it is your livelihood. Is it better to have the points or the fish? Explain.
8. What is the meaning of the word “commons” in this activity? Explain the meaning of this activity, “Tragedy of the Commons.”
9. Think of another **local commons** that you are familiar with. [Parking lots, the cafeteria, bathrooms, halls, etc.] Do similar situations arise? Explain. HOW might those problems be solved?
10. What are some **natural resources** that are **common** resources? What are the **global commons**? Are these being used wisely? Why or why not?
11. What action can be taken to try and prevent tragedy of the commons from happening?