**MC900335608[1]MC900335608[1]TRAGEDY OF THE COMMONS: LAB ACTIVITY**

**Name(s):**  \_\_\_\_\_\_ **Date:**

**BACKGROUND:**

Each of you is a local, commercial fisherman that fishes to feed your family and to make a profit. We will be simulating what happens in a real-life situation relating to the Tragedy of the Commons.

**PROCEDURE:**

**1.** Calculate the size of the fish population that lives in your ocean (count the goldfish) and enter that number into your “Round One” data table under the first column.

**2.** Your teacher will clearly signal when each fishing season starts and ends (30 seconds total). You can fish as much as you want during the fishing season but you cannot communicate to the other fishermen in your group. **You need at least two fish to feed your family and any more you can sell for profit.** Keep the fish you catch on the table in front of you. ***DO NOT EAT THEM!***

**3.** After the fishing season ends, count the number of fish that each fisherman has caught and enter names and numbers into the data table’s second column. Then, add up the total amount of fish caught by everyone and enter it into the third column.

**4.** Finally, count up how many fish are left in the population after the fishing season has ended, and enter that into the fourth column.

**5.** Before a second fishing season, your fish population will reproduce. Your teacher will come around and simulate this by restocking your population. Then, repeat the above procedure for a total of five fishing seasons.

**6.** After five fishing seasons, total all of your amounts in the final row of your data table.

**ROUND 1:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Number of fish in the ocean to start:** | **Number of fish caught per person and name of person: (ex: 9-Jane)** | **Number of fish caught TOTAL**  **(by everyone):** | **Number of fish left in bowl after fishing season:** |
| **1st Fishing Season:** |  |  |  |  |
| **2nd Fishing Season:** |  |  |  |  |
| **3rd Fishing Season:** |  |  |  |  |
| **4th Fishing Season:** |  |  |  |  |
| **TOTAL AMOUNTS:** |  |  |  |  |

**7.** Answer the following questions using **complete sentences**:

**a.** Did any one fisherman catch significantly more fish than the others?

**b.** Did everyone try to catch as much as possible? Why or why not?

**c.** Did anyone’s fishing strategy change during the season(s)? If so, how?

**d.** Did anyone catch less fish *on purpose*, for the good of the whole fishing community?

**e.** Your teacher came around and simulated fish reproduction at the end of each fishing season. For every one fish left over at the end of the season, how many did your teacher add to the population?

**8.** You are going to fish another round, this time with some new rules.

* New Hampshire Fish and Game has now set fishing regulations. Despite the fact that there are strictly enforced fishing seasons, fish populations are still being overfished. They have decided that **from now on, during the fishing season, fishermen can only catch 3 fish total.** \*You still can’t communicate to the other fishermen during this activity. \*

**ROUND 2:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Number of fish in the ocean to start:** | **Number of fish caught per person and name of person: (ex: 9-Jane)** | **Number of fish caught TOTAL**  **(by everyone):** | **Number of fish left in bowl after fishing season:** |
| **1st Fishing Season:** |  |  |  |  |
| **2nd Fishing Season:** |  |  |  |  |
| **3rd Fishing Season:** |  |  |  |  |
| **4th Fishing Season:** |  |  |  |  |
| **TOTAL AMOUNTS:** |  |  |  |  |

**9.** After **Round Two** is complete, answer the following question using complete sentences:

**a.** How did the new fishing regulations affect the fishing outcomes?

**b.** How did your fishing strategy change this round?

**c.** Is it possible to maximize the number of fish caught per person **AND** the number of fish remaining in the ocean **at the same time**? Why or Why not?

**d.** What are some strategies that might have helped you to both maximize the amount of fish caught while also maintaining a healthy fish population in the ocean?

*\*Be prepared to share your answers with the class.\**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Tragedy of the Commons Lab: Follow-Up Questions**

**Using information from the lab, answer the following questions in *complete sentences*.**

**1.** A “commons” is a shared space or resource, like the Atlantic Ocean or your living room. Write down the name of another commons that you are familiar with:

**2.** Recall the problems you encountered during our fishing lab when multiple people tried to share a commons (the fish). Do any of these same problems arise in the commons you wrote down above? Why or why not?

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

**4.** Are these being used wisely? Why or why not?

**5.** What are two things people can do to use natural resources most wisely?

**6.** Why do you think shared resources are often overexploited or polluted?

**7.** In your lab, if no one fished a body of water that is typically fished, the population might grow exponentially. Describe why the overpopulation of a species can hurt an ecosystem.