**Environmental Science Tragedy of the Commons Lab**

**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 plates

Straws

Timers

Procedure:

Each table will be a group. The goal of this activity is to see how each of you 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 ahs 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 represent one generation of fish.
* The fish in your lake will reproduce once a year. [See your teacher at the end of each year- each fish is able to spontaneously reproduce and make one new fish (4 fish become 8, i.e., 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.

**Fishing 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 2nd fisher** | **# of fish taken by 3rd fisher** | **Total fish left at end of year** |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **Total** |  **xxxxxx** |  |  |  |  **xxxxx** |

**Group Totals:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** |  |  |  |
| **Total fish harvest** |  |  |  |
| **Total income** |  |  |  |

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

**Fishing Data Table: Round 2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year** | **# of fish at beginning of year** | **# of fish taken by 1st fisher** | **# of fish taken by 2nd fisher** | **# of fish taken by 3rd fisher** | **Total fish left at end of year** |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **Total** |  **xxxxxx** |  |  |  |  **xxxxx** |

**Group Totals:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** |  |  |  |
| **Total fish harvest** |  |  |  |
| **Total income** |  |  |  |

**Analysis & Discussion Questions:**

**Directions:** *Answer the Following questions in COMPLETE sentences.*

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?

5. 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?)?

6. 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?

7. What are some natural resources that are common resources? What can people do to use these resources most wisely?