

Teachers Notes Before You Begin:

- When preparing the “ponds” use about 25-30 goldfish or kidney beans.
- Adjust the time of the fishing session if needed. Say something like “due to the excess fish population the Fish Commission has extended the fishing season by 30 seconds. You may need to do this if you notice some of the ponds are overflowing or if you are running out of goldfish.
- Emphasize the no talking prior to going over instructions. If you do not, students will quickly figure it out and adjust their fish intake.
- Warn students they may inhale small pieces of salt or cracker. Also mention that if they feel light headed they need to stop. (I have never had an issue)
- Have a few extra bowls out so students can place their caught fish in it. Have some extra fish at each station for reproducing each generation.

Taking it to the next level.

- Make it a competition for round two, maybe give away homework passes. Have students try to earn the most money without exhausting their resources.
- Nominate some students to be “Commissioners” to enforce rules (time) and create new laws based on the populations in the ponds. The teacher remains a part of this discussion. Students may choose to add “limits” to how many fish can be caught, extend or reduce the season, impose fines and revoke fishing privileges if laws are broken. (This will not work for all classes but has worked well with an honors class.)
- Add a condition that if the population gets too large that the populations will die off to a small number of survivors.

Name _____ Date _____ Period _____

Tragedy of Commons

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 lakes.

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 or kidney beans.
- bowls (lakes)
- Straws

Procedure: NO TALKING. THERE IS A VERY SPECIFIC REASON YOU CANNOT TALK. LISTEN TO THE INSTRUCTIONS AND BEGIN WHEN YOU ARE TOLD.

1. Each group should sit in a circle around the "lake". 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.
2. Each team may fish for 15 seconds to determine your income for the year. **It is your choice of how many fish you take, however, you must catch at least one fish to stay alive.** Each fishing session represents one generation of fish.
3. At the end of each season, the fish in your lake will reproduce. A new fish will be added to the lake (bowl) for each fish remaining in 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.
4. The number of years for fishing is unknown (could be 3 – might be 8!!)

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

[illegible]

Fish Data Table: Round 2 Open-fishing. Free exchange of information encouraged! TALKING NOW ALLOWED!

[illegible]

Analysis & Discussion Questions:

Directions: Please submit quality work. Use your iPad to do your work. Be sure to include your data. Name, date, and class name should be recorded in the upper right-hand corner

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 their # 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 common** 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?

Please carefully research "The Tragedy of the Commons" and be prepared to discuss it.