



TRAGEDY OF THE COMMONS SIMULATION STUDENT LAB TEMPLATE B

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Based on a Lab Outline by Wendy Van Norden

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Procedure

Part 1:

Divide yourselves into groups of four. Imagine this scenario. Each person represents the head of a starving family, which requires food. The only food source for these four families is a small fishing hole that can accommodate an unknown amount of fish. Fortunately, after each round of fishing by the four family heads, each remaining fish is able to spontaneously reproduce. Each person is allowed to take as many or few fish as you want, but if you take only one fish, your family will starve.

In this simulation, our pond is a beaker, and our fish are Hershey's Kisses. Fish are caught using plastic spoons. Each fishing round will last for one minute. You should rotate your fishing order every round so that everyone has a chance to go first. The simulation will continue for three rounds. The pond will be covered with a fabric sleeve, so that it is not possible to tell how many fish have been taken before you fish. No talking is allowed in this part.

Data

1) All data should be recorded in the following tables.

Part 1: Commons pond

Round #	# of fish at beginning of round	# of fish taken by 1st fisher	# of fish taken by 2nd fisher	# of fish taken by 3rd fisher	# of fish taken by 4th fisher	Total fish left at end of round
1						
2						
3						
TOTAL	XXXX					XXXXXX

Questions

1. What happened to the common resource in part 1? Why?
2. Explain the rationale for your fishing technique in this part.
3. What factors led to uncertainty in this round?

Procedure

Part 2:

In this part, you will have access to two ponds, one common and one private. The rules for the commons pond are the same as before. However, talking and strategizing is allowed in this part. The cloth sleeve will be removed so that you will know exactly how many fish are in the ponds at all times and how quickly the fish will reproduce. The carrying capacity for the commons ponds is 16 and for the private ponds is 4. You must remove at least one fish from each pond each round. As before, you may catch as many fish as you would like from both ponds during each round.

Data

Part 2: Commons pond

Round #	# of fish at beginning of round	# of fish taken by 1st fisher	# of fish taken by 2nd fisher	# of fish taken by 3rd fisher	# of fish taken by 4th fisher	Total fish left at end of round
1						
2						
3						
TOTAL	XXXX					XXXXX

Part 2: Private pond

Round #	# of fish at beginning of round	# of fish taken this round	Total fish left at end of round
1			
2			
3			
TOTAL	XXXXX		XXXXX

Questions

1. Did you get different results for the pond in part 2? Why?
2. Explain the rationale for your fishing technique in this part.
3. If you cooperated with other fishers, what was the result of that cooperation?
4. Did you use different fishing strategies in the commons pond and the private pond?
5. Why does common usage lead to exploitation?
6. What would be the ideal way to manage the commons pond?
7. How would this simulation have been different if you didn't know the students in your group?
8. What are the strategies that help to prevent the "tragedy of the commons"?
9. If a new student had joined your group in the middle of part 2, how would that have affected your strategy and the use of the resource?
10. Why is the private pond easier to manage for long-term success?