Name: Date:

APES

**Tragedy of the Commons**

**Introduction:**

 Imagine you own a fishing boat, and fish for a living in a pond. The other members of your group also fish for a living. After each year of fishing, the remaining fish reproduce to double their numbers (i.e. two fish become four) up to a maximum of 20 fish. Each person is allowed to take as many or as few fish as you like, but your family requires two fish to survive. Any additional fish you catch can be sold for profit.

For this simulation, the table is your pond, and the M&Ms are the fish. Fish are caught using straws. Each person in your group will fish one at a time for 15 seconds, and the order will rotate after each round. After each round, the number of fish remaining in the pond doubles.

Fill out the data tables, then answer the analysis questions as a group.

**Part 1: Simulation**

* You **CANNOT** communicate with other members of your group in any way.
* Remember: your family requires 2 fish to survive, and any additional fish you catch can be sold for profit.
* Rotate who goes first after each round

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Group member’s name** | **Number fish caught****Year 1** | **Number fish caught****Year 2** | **Number of fish caught****Year 3** | **Number of fish caught****Year 4** |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  | **Group Totals** |
| Total fish caught |  |  |  |  |  |
| Total profit (#fish caught – 2) |  |  |  |  |  |

Did you have a strategy for Part 1 of this task?

**Part 2: Simulation**

* This time, your group may **talk to each other** and plan a strategy.
* Remember: your family requires 2 fish to survive, and any additional fish you catch can be sold for profit.
* Rotate who goes first after each round

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Group member’s name** | **Number fish caught****Year 1** | **Number fish caught****Year 2** | **Number of fish caught****Year 3** | **Number of fish caught****Year 4** |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  | **Group Totals** |
| Total fish caught |  |  |  |  |  |
| Total profit (#fish caught – 2) |  |  |  |  |  |

What was your group’s strategy or plan going into Part 2?

**Part 3: Analysis**

1. What happened in Part 1? Why?
2. Did anything different happen in Part 2? Why?
3. What do you think the best strategy would be for fishing in the pond?

***Use the*** [***video we watched***](http://www.youtube.com/watch?v=MLirNeu-A8I) ***and the*** [***article***](https://docs.google.com/a/summitps.org/document/d/1F4-0K1XJTKtT-Us4IuVH8tb0n9V-UFDl7CaToG-rfkY/edit) ***to answer the next questions***

1. Explain the idea of the “Tragedy of the commons.”
2. How does this activity relate to what happens in the real world?
3. What are possible solutions to the “Tragedy of the commons?”