Name_____ Period _____ Date _____

Fisheries

STEM Sims

Lesson 1: How does Fishing Affect a Fish Population?

Fishing is a popular activity that is enjoyed by many. A concern is that fish populations may decline if there is overfishing. In order to prevent this, scientists estimate the number of fish in the fishery and determine if there is a decline in population. Can you help the scientists save the fish?

Doing the Science

1. Start the Fisheries Simulation by clicking on the "Sim" tab.
2. Click on either "Single line", "Double line", or "Net" in the bottom left corner for the "Tag phase".
3. Click on the water to navigate the boat to catch the fish. The areas in green have higher concentrations of fish.
4. After the elapsed time has finished, a number of fish will have been caught, tagged, and released.
5. Repeat steps 2-3 for the "Count phase". Make sure to use the same fishing tool (Single Line, Double Line, or Net).
6. After the elapsed time has finished, the number of fish that have been caught and released is given. Using the information of the number of fish that had tags, calculate the population of the fish using the formula given in the background section. Record the population count into Table 1 below.
7. Repeat steps 2-3 for the "Catch phase". Make sure to use the same fishing tool (Single Line, Double Line, or Net).
8. After the elapsed time has finished, the number of fish caught represents fish that have been taken as a food resource. These fish will not be returned to the water or released.
9. Repeat steps 2-8 for three more fishing seasons.
10. Click on the "Population Graph" at the bottom to view the fish population over the four fishing seasons.
11. On the back of this paper, draw a graph of the estimated fish population versus seasons for the four fishing seasons.

Table 1.

	Season 1	**Season 2**	**Season 3**	**Season 4**
Number fish originally tagged				
Number fish caught and released				
Number fish caught that had a tag				
Estimated fish population				

Do You Understand?

1. Over the four fishing seasons, is the fish population increasing or decreasing? Please discuss your response.