

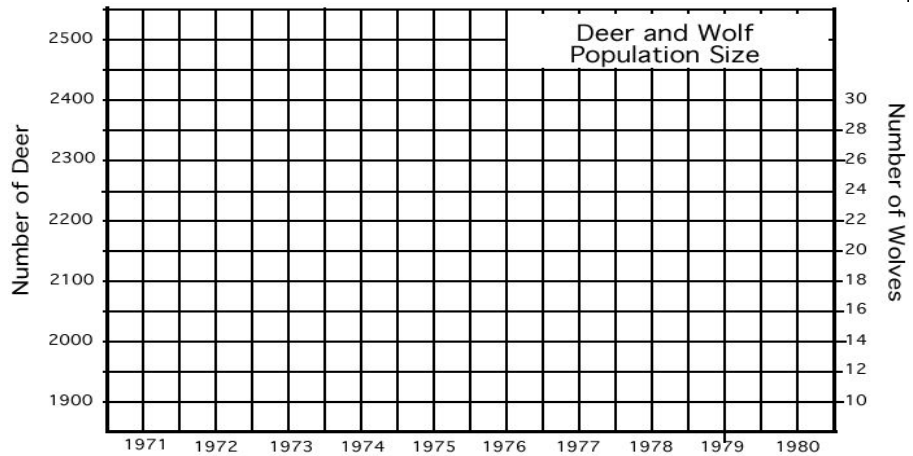
# Task: Middle School Math/Science Worksheet

**Instructions:** Improve this worksheet's design by moving and changing the elements below.

Student Name \_\_\_\_\_ Class \_\_\_\_\_ ° Group # \_\_\_\_\_

Year	Wolf Population	Deer Population	Deer Population Change
1971	10	2000	+300
1972	12	2300	+200
1973	16	2500	-140
1974	22	2360	-116
1975	28	2224	-150
1976	24	2094	+298
1977	21	1968	+340
1978	18	1916	+430
1979	19	1952	+412
1980	19	1972	+422

- Let's say you are trying to model something called predation. We can do this by studying the change in population of two animals in a predator-prey relationship. Graph the deer and wolf populations on the graph below. You probably want to use one color to show deer populations and another color to show wolf populations. Make sure you label your axes.



Answer these questions. If you need more room, use the back of the paper. Don't forget to write your name!

- Describe what happened to the deer and wolf populations between 1971 and 1980.
  - What do you think would have happened to the deer on the island had wolves NOT been introduced?
  - Most biology textbooks describe that predators and prey exist in a balance. This "balance of nature" hypothesis has been criticized by some scientists because it suggests a relationship between predators and prey that is good and necessary. Opponents of this hypothesis propose the following questions:
    - Why is death by predators more natural or "right" than death by starvation?
    - How does one determine when an ecosystem is in "balance"?
    - Do predators really kill only the old and sick prey? What evidence is there for this statement?
- b) What is your opinion. Would the deer on the island be better off, worse off, or about the same without the wolves? Defend your position. If you run out of time, you may place this sheet in your lab folder.