

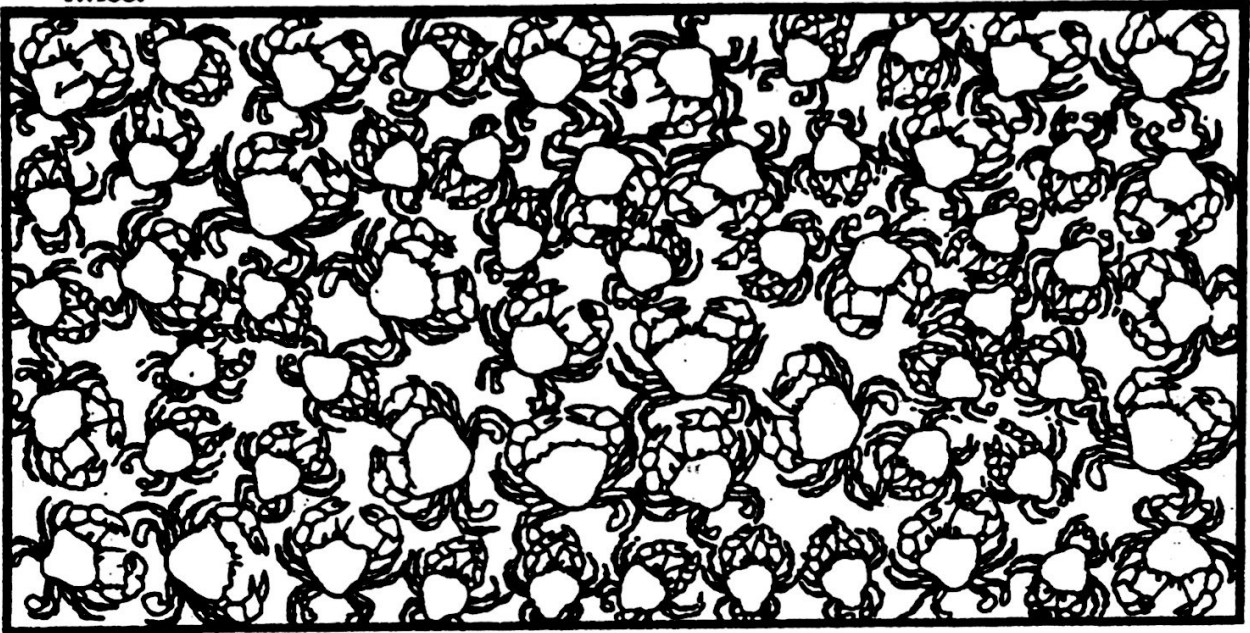
Name _____

Period _____ Date _____

Counting Populations

Skills: Literal, Interpretive, Critical, Calculating, Problem solving, use of graphic aids, following directions.

1. Make a population count of the crabs in the diagram below. Keep track of how long it takes you to do it. Place a checkmark on the shell of each crab to avoid counting some twice.



Total number = _____ Time it took = _____

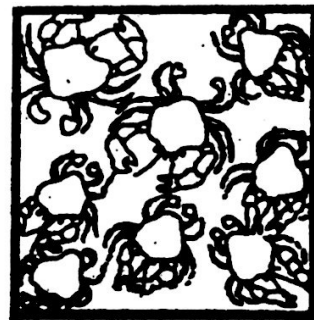
2. A faster way to count a population is to sample it. Count the number of crabs in this small square.

Total number = _____

Time it took = _____

This square is $\frac{1}{8}$ the size of the large square above. Therefore, you need to multiply the number you counted by 8 to get the total population size.

_____ x 8 = _____



3. a. Which way was faster (1 or 2)? _____
b. Were the results from counting about the same regardless of which method was used to count? _____
c. What is the advantage of sampling a population for counting? _____
d. The human population is clumped into cities. How is the crab population different? _____

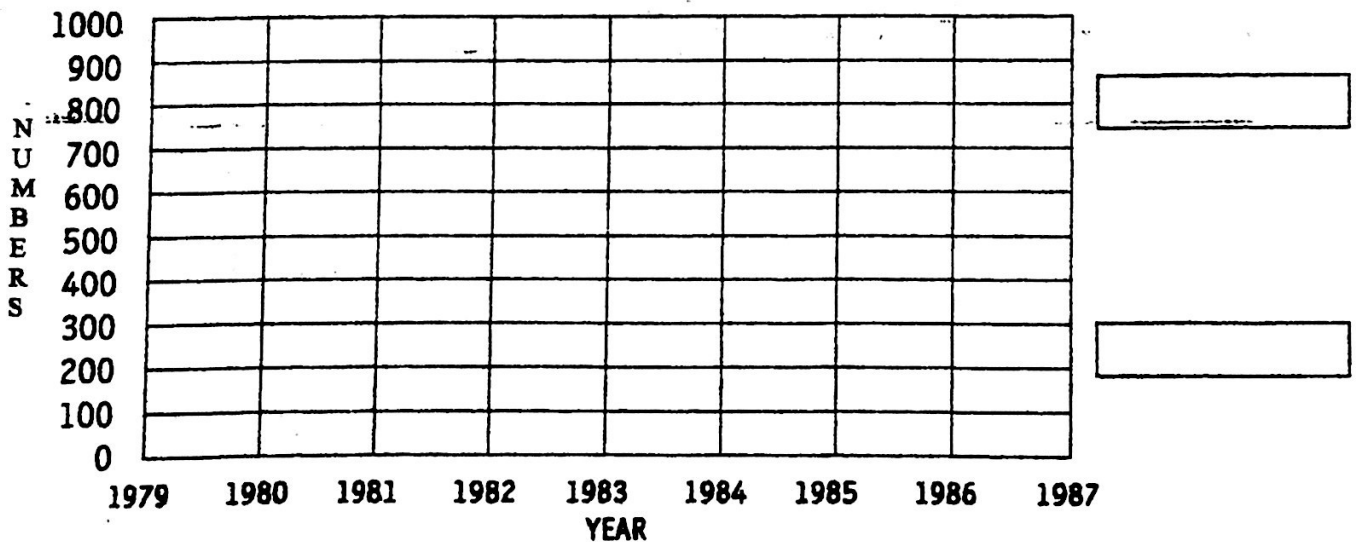
Population Cycles

Skills: Literal, Interpretive, Calculating, Problem solving, Use of graphic aids.

1. Many things change the numbers of individuals in a population. One important factor is food supply. For example, fox eat lemmings. The chart below shows how their numbers have changed over the years.

Year	Number of lemmings	Number of fox
1979	1050	200
1980	800	425
1981	426	581
1982	730	300
1983	980	153
1984	620	399
1985	380	548
1986	680	403
1987	1010	255

- a. Plot the numbers of lemmings on this graph outline below and connect all the points with a black line.
- b. Plot the number of fox on this graph outline also. Connect all the points with a red line.
- c. In the boxes at the right of the graph, indicate which animal is the predator and which is the prey by writing Predator and Prey in the correct box.



2. After each of these phrases, write the letter on the graph (A, B, C, or D) that best matches.

a. Fox population increasing _____	c. Lemming population increasing _____
b. Fox population decreasing _____	d. Lemming population decreasing _____
3. Explain why:
 - a. the lemming population drops when the fox population increases. _____
 - b. the fox population drops shortly after the lemming population drops. _____