"Don't Count Your Eagles Before They Hatch"
Population Graphing Practice

The population of the bald eagle, America's national symbol, has gone through many changes. Habitat loss and a pesticide called DDT caused the population to decrease and, as a result, the bald eagle was added to endangered species list.

Your task is to create three different graphs to show these population changes and the current population of bald eagles in different parts of the United States. All data and hints are found on this worksheet, but you **will need graph paper to complete the graphs**. ***Note:*** Population surveys were not consistently done at first, so data is not always one year apart or five years apart. Pay special attention when labeling the years on your graphs!

Remember, all good graphs have the following things:

- A title telling your reader what the graph is about
- A key labeling colors and symbols
- Labels on the x-axis and y-axis

Graph 1-Line Graph: How Has the United States Bald Eagle Population Changed?

For this graph, you will create a line graph to show the change in the number of bald eagle pairs in the lower 48 states according to data from the U.S. Fish and Wildlife Service from selected years between 1963 and 2000.

Year	Number of Pairs		Year	Number of Pairs
1963	417		1991	3,399
1974	791		1992	3,749
1981	1,188		1993	4,015
1982	1,480		1994	4,449
1984	1,757		1995	4,712
1986	1,875		1996	5,094
1987	2,238		1997	5,295
1988	2,475		1998	5,748
1989	2,680		1999	6,104
1990	3,035		2000	6,471

Graph 2-Bar Graph: How Do Bald Eagle Populations Compare Across the Lower 48 States?

For this graph you will create a bar graph to show the population of bald eagles in different states according to U.S. Fish and Wildlife Service data from 2000.

Data for Graph 2

State	Number of Bald Eagle Pairs
California	151
Florida	1,069
Louisiana	182
Maine	234
Michigan	362
Minnesota	681
Montana	229
Nevada	1
New York	51
North Carolina	33
North Dakota	10
Oregon	371
Rhode Island	0
Texas	78
Wisconsin	770

Graph 3-Pictograph: Where are the Most Young Bald Eagles Found in Minnesota?
Create a pictograph that shows where the most eaglets are found in Minnesota according to a 2000 census by the Minnesota Department of Natural Resources. Numbers have been rounded up or down one eaglet to make numbers easier for graphing. In the survey, the number of young eagles were counted. Create your own symbol to represent the number of eaglets. You will also need to choose how many eaglets your symbol will represent once you study the data.

Region of Minnesota	Actual Number of Eaglets Surveyed	Number of Eaglets to use for Pictograph
Northwest Minnesota	29	30
Northeast Minnesota	49	50
Central Minnesota	44	45
Southwest Minnesota	46	45
Southeast Minnesota	19	20
Twin Cities Metro	41	40

Conclusion Questions

Graphs are helpful because they present a picture that shows trends and comparisons more easily than just looking at numbers. Use your graphs to help answer the following conclusion questions.

1. According to Graph 1, what happened to the bald eagle population over the time period graphed?

   _____

2. Name two things that may have caused the population to do this:

   1. _____

   2. _____

3. Look only at consecutive years (for example: 1990-1991). Which years showed the greatest increase in population?

   _____

   Smallest increase? _____

   Did the population go down at any time during the years graphed? _____

4. Scientists may pay more attention to graphs with many years of data, instead of looking at year-to-year changes. Why do you think they do this?

   _____

   _____

5. According to Graph 2, which state that you graphed had the highest bald eagle population in 2000?

   _____

   Lowest?_____

6. In Graph 2, are there any states where the bald eagle population surprises you? Why were you surprised? What do you think might explain the difference?

   _____

   _____

7. Texas is a larger state than Minnesota, Wisconsin, or Florida. Why do you think the bald eagle population was so much smaller in Texas than in Minnesota, Wisconsin, and Florida?

_____

_____

8. According to Graph 3, which region of Minnesota had the highest number of young eagles in 2000? Name a town, city, or other landmark that might fall in that region. Use a map of Minnesota if you need help.

_____

9. Why do you think that region had the highest number of eaglets?

_____

10. According to Graph 3, which region of Minnesota had the lowest number of young eagles in 2000? What might be a possible explanation for this?

_____

_____

11. Looking at data usually creates more questions, instead of just answering them. Think of two questions about bald eagle population that you could explore further and write them down.

    1. _____

    2. _____