Analysis Questions for Peppered Moths

1. What changes occurred in both forms of the peppered moth over the ten years?

_____

2. Why do you think these changes occurred? (Use what you know about the FOUR parts of Natural Selection)

_____

3. According to the chart, what was the favorable color at the start of the Industrial Revolution?_____

4. According to the chart, what year did the population shift from more light to more dark?_____

5. What do you think would happen to the moth population if the trees got lighter in color?

_____

6. According to text, what caused the trees to darken?_____

7. According to the text, what is one factor that can influence Natural Selection?_____

8. According to the text, when does *genetic variation* occur?_____

9. What do you think will happen to the light peppered moths if there are no changes in the forest and the trend continues?

_____

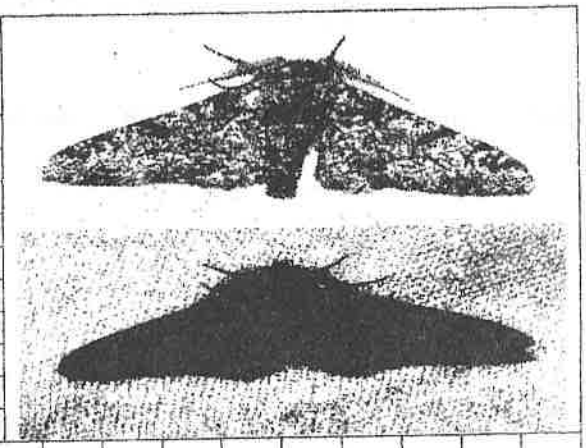
Peppered Moth Background Name:_____

Natural selection is the reproductive success of organisms that are best suited for an environment. It is the driving force of population changes. Natural selection within populations, which are interbreeding groups of individuals of the same species. Genetic variation is one factor that influences natural selection. Genetic variation occurs when a population has multiple versions of a trait. For example, some organisms in a population of moths are dark colored, while some are light colored. Natural selections over time results in adaptations, where certain traits are favored due to their influence on survival. Adaptations over many generations can lead to population changes. Peppered moths have lived in the forests around Manchester, England for hundreds of years. There are two genetic variations for color in peppered moths—the moths can be dark with light spots or dark spots.

Before the 1800s, the trees were light colored and the light colored moths were well camouflaged. After the 1800s, when England went through the Industrial Revolution, the pollution from factories made the trees darken. Now, the trees were dark colored and the dark colored moths were well camouflaged. Various birds eat both kinds of moths *IF* they are able to be seen.

Data: The table below displays the number of peppered moths of each color found over a ten year period. Graph the data below to show how the peppered moth populations changed in the 1800s. You should make a line graph with two lines. **Years should be on the X axis** and **number of moths on the Y axis**. Assume year one was the start of the industrial revolution.

Peppered Moth Populations		
Year	Light Colored Population	Dark Colored Population
1	537	112
2	484	198
3	392	210
4	246	281
5	225	357
6	193	412
7	147	503
8	84	594
9	53	638
10	38	673



600
550
500
450
400
350
300
250
200
150
100
50
↑Y X→

L D L D L D L D L D L D L D L D L D L D

1 2 3 4 5 6 7 8 9 10