Peppered Moth Simulation – An example of Natural Selection Name: \_\_\_\_\_\_\_\_\_\_\_

**Life Cycle of the Peppered Moth**

1. Why are these moths called "peppered moths?"

2. What animals eat the peppered moth?

3. What is a lichen?

4. What do the larvae of the moth eat?

5. How do peppered moths spend the winter?

6. Moths that have more dark spots than the average moth are called what?

**Impact of Pollution**

7. Where was the first black form of the moth found?

8. What was the Industrial Revolution?

9. What was causing the different colors in the moths?

10. What is natural selection?

11. Who suggested that peppered moths were an example of natural selection?

12. What is industrial melanism?

**Kettlewell's Experiments**

13. What is an entomologist?

14. How do scientists test theories?

15. Write down ONE of Kettlewell's predictions.

16. Dark moths were found in what parts of the country?

17. How did Kettlewell directly study the moths?

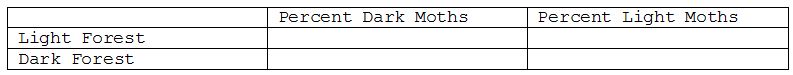
18. Why did dark moths have a survival advantage?

19. When Kettlewell recaptured the marked moths, what did he find?

20. Where did Kettlewell publish his findings?

**Birdseye View**

21. Open the simulation and play the role of the bird in both the dark and the light forest. Try to behave as a bird would behave, choosing the moths that are the most obvious. At the end of each simulation, record the percent of moths captured in the table below.



**Analysis**

22. Explain how the color of the moths increases or decreases their chances of survival.

23. Explain the concept of "natural selection" using your moths as an example.

24. What would happen if there were no predators in the forest? Would the colors of the moths change over time? Defend your answer?

**Writing Prompt**

A pesticide is a chemical that kills pests, like insects, that may eat or destroy crops. In agriculture, farmers often have to deal with a problem called the Pesticide Treadmill in which they must use stronger and stronger pesticides each year to have the same effect. Using what you know about natural selection, explain why the pesticide treadmill occurs.

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