

Population Webquest

This webquest has been designed to give you a greater understanding of Natural Selection and how it effects population.

Go to the following website <http://www.techapps.net/interactives/pepperMoths.swf> or if this fails to load, go to www.google.com and types in "peppered moths natural selection interactive" in the keyword search. Select the second option from the list that is generated for you. You know you are on the right page when it looks like this:



Click on the first circle "Life Cycle of the Peppered Moth" and answer the series of questions below.

1. Peppered moths are common insects living in _____ and _____.
2. Name three predators of the peppered moth. _____
3. What is the name of the small fungi that covers the trees that the peppered moths live in? _____
4. What is the advantage of having a body that looks like a stick? _____

5. How long does a peppered moth live for? _____
6. What is the official name of the dark bodied peppered moths? _____

Click on the icon titled "Impact of Pollution"



7. What year was the first recorded sighting of a dark peppered moth? _____
8. By 1900, the peppered moth populations in areas around English cities were as much as _____ dark moths.
9. How did the Industrial Revolution affect the environment? _____

10. How did scientists find out that the colour of the peppered moths was genetic? _____

11. What is Natural Selection? _____

12. What year did J.W Tutt suggest that the peppered moths were an example of natural selection? _____
13. What is "industrial melanism"? _____

Click on the icon titled "Kettlewell's Experiments"



14. What type of scientist was Dr. Kettlewell? _____

15. Dr Kettlewell felt that if natural selection caused the change in the moth population, the following must be true:

1. _____
2. _____
3. _____
4. _____

16. How did Dr Kettlewell study bird predation on the moths? _____

17. In 1959 Dr Kettlewell published an article in which prestigious science publication? _____

Click on the icon titled "Bird's Eye View"



18. Write a brief explanation of what you had to do in the simulation (include the final percentages of the moths in each environment). _____

The final activity is a simple food chain population simulator. Go to the following website:

<http://puzzling.caret.cam.ac.uk/game.php?game=foodchain> which will look like this:



In the 'picture' view select different combinations of plants, rabbits and foxes. You are going to try this simulation three times and observe the effects of changing the numbers of each organism.

Trial 1

No. of plants: _____ No. of rabbits: _____ No. of foxes: _____

Run the simulation (until you reach 50 years), how many points did you score? _____

Before you reset the simulator, click on the 'Biomass' icon and in the space below, draw what you observe.



Trial 2

No. of plants: _____ No. of rabbits: _____ No. of foxes: _____

Run the simulation (until you reach 50 years), how many points did you score? _____

Before you reset the simulator, click on the 'Biomass' icon and in the space below, draw what you observe.



Trial 3

No. of plants: _____ No. of rabbits: _____ No. of foxes: _____

Run the simulation (until you reach 50 years), how many points did you score? _____

Before you reset the simulator, click on the 'Biomass' icon and in the space below, draw what you observe.



Which combination of plants, rabbits and foxes resulted in the highest score? Write a brief sentence to explain why this is the case.

END OF WEBQUEST