Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_\_

**Peppered Moth Analysis**

1. Click the “Peppered Moth Game” link on my website.
2. Click on the circle farthest to the right (the one with the bird).
3. Read the material on each page and click the next arrow twice.
4. Choose a forest (you’ll end up doing both forests, so whichever one you pick, you’ll go back and pick the other one later).
5. You are the bird. Eat the moths and record the data below.

|  |  |  |
| --- | --- | --- |
|  | % Dark Moths | % Light Moths |
| Light (lichen) Forest |  |  |
| Dark (sooty) Forest |  |  |

1. Explain how the color of the moths increases of decreases their chances of survival depending on the environment.
2. 500 light moths and 500 dark moths are released into a polluted forest. After 2 days the moths were recaptured. Make a prediction about the number of each type of moth that was recaptured.

1. What underlying law of nature has produced this change in coloration? (Hint: Darwin’s Theory of Evolution).

**Go to wellcometreeoflife.org (MAKE SURE THERE ARE TWO L’s!) and view the interactive. Play around with it and look at the different species and answer the questions below.**

1. Find what is called an “unnamed node” on the tree. Look at where it is on the tree. What does the unnamed node represent?
2. What do the red animals on the tree represent?
3. Which represents current day – top of the tree or bottom? Why?
4. Why does the tree get bigger towards the bottom?
5. Click on one red animal, and then click on another one quickly after. This will compare the two species and tell you at what point they two are related. Find two species that are closely related, list the similar group it lists.
6. Find two species that are not closely related and list the similar group they share.
7. How did you know which groups are closely or not closely related?
8. Find where it says “Life on Earth” or the first living organisms. What do they look like?
9. Find an organism that is alive today that hasn’t changed a lot since the beginning of time. What organism is it?
10. How do you know it hasn’t changed a lot since the beginning of time?
11. Using this knowledge, find an organism that underwent a speciation event very recently. List the organism below.

*Go to evolution.berkeley.edu*

* *Click on “Evolution 101”*
* *Click on “Introduction to Evolution”*
* *As you read, click “next” to continue the introduction.*

What is biological evolution?

What is the difference between small-scale and large-scale evolution?

What is the central idea of biological evolution?

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* *Click on “Mechanisms” on the menu to the left.*
* *For each mechanism, write a brief description of what it is and/or an example*

1. Mutation
2. Migration
3. Genetic Drift
4. Natural Selection

What are the three sources of genetic variation?

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* *Click the link for “What About Fitness?” on the menu to the left.*

What is fitness? Is it always the strongest organism?