



Science Virtual Learning

LEP Science

Practice with Evolutionary Concepts

April 22, 2020



LEP Science
Lesson: April 22, 2020

Objective/Learning Target: I can explain the concept of evolution through Natural Selection.



Let's get started

Watch the two short videos. As you watch, jot down some notes that you think are important.

Darwin

Theory of Evolution by Natural Selection



Let's get started

Now that you have been introduced to the Theory of Evolution, what do you think is meant by “Survival of the Fittest”?

Write your definition on a sheet of paper. Back your answer with evidence from the two videos.



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Survival of the Fittest basically means that those organisms that have traits for successful survival will reproduce and pass those favorable traits to their offspring. Evidence from the videos was seen with the giraffes and their long necks. Additional evidence was seen with Darwin's finches, and with the peppered moths.



Lesson and Activity

Watch the video. As you watch, write the 4 Principles that are characteristic of Natural Selection according to Charles Darwin.

[Darwins Principles of Natural Selection Video](#)



Darwin's Principles of Natural Selection

1. **Individuals within a population differ**--in other words, they show variations or differences in either appearance or characteristics
2. **The differences are, at least in part, passed from parents to offspring** --in other words, these variations in traits can be inherited.

Darwin's Principles of Natural Selection

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2. **The differences are, at least in part, passed from parents to offspring** --in other words, these variations in traits can be inherited.
3. **Some individuals are more successful at surviving and reproducing than others** --meaning, organisms tend to produce more offspring than can survive on the available resources (death is expected and those that are able to survive will)
4. **The successful individuals succeed because of variant traits they have inherited and will pass on to their offspring** --in other words, the variations will lead to increased reproductive success and increase the chance of the favorable trait being passed on.



Peppered Moth Activity

Let's put what you have learned into action. Click the link below. Read through the tabs (buttons) in this order and answer the questions:

1. Peppered Moth: What enables the moths to camouflage?
2. Natural Selection: What happened to the trees during the Industrial Evolution?

Why did J. W. Tutt suggest the peppered moths were an example of Natural Selection?

3. Dr. Kettlewell: Summarize Dr. Kettlewell's hypothesis and results.
4. How to play
5. Play the game: What were your results in each forest? Why?

[Peppered Moths](#)

Peppered Moth Activity How did you do?

1. Peppered Moth: What enables the moths to camouflage? **Patterns on the wings were similar to the bark on the tree.**
2. Natural Selection: What happened to the trees during the Industrial Evolution? **The trees are now dark and bare.**
Why did J. W. Tutt suggest the peppered moths were an example of Natural Selection? **Camouflage of the light moth no longer worked in the dark forest and dark moths lived longer in the dark forest, so they had more time to breed.**
3. Dr. Kettlewell: Summarize Dr. Kettlewell's hypothesis and results.
Hypothesis: Dark forests will have more dark moths and the light forests will have more light moths. Results: In a dark forest, the dark moths had a survival advantage over the light moths.
4. How to play

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3. Dr. Kettlewell: Summarize Dr. Kettlewell's hypothesis and results. **Hypothesis: Dark forests will have more dark moths and the light forests will have more light moths. Results: In a dark forest, the dark moths had a survival advantage over the light moths.**
4. **How to play**
5. **Play the game: What were your results in each forest? Why? Percentage of light and dark moths should have been different with more light moths in the light forest and more dark moths in the dark forest. Why? The off color moth (dark in the light forest and light in the dark forest) were easier to see and eat causing the moths that had the better camouflage to live and reproduce.**



Additional Resources

[Myths and Misconceptions](#)

[Natural Selection made simple](#)

[Natural Selection](#)