



## Mechanisms of Evolution 101 video notes

What is Evolution? The process by which \_\_\_\_\_ organisms have \_\_\_\_\_ from \_\_\_\_\_ organisms.

In what ways has the horse evolved over time? \_\_\_\_\_

**4 Mechanisms of Evolution** – Microevolution that refers to the changes in \_\_\_\_\_ within a single population.

What are the four mechanisms of evolution? \_\_\_\_\_

**1. Natural Selection** – Process by which organisms that are most \_\_\_\_\_ to their environment \_\_\_\_\_ and \_\_\_\_\_ most successfully ( \_\_\_\_\_ )

- Explain natural selection in the giraffe population. (3:07) \_\_\_\_\_

- Explain natural selection in the beetle population. (4:15) \_\_\_\_\_

- How does natural selection relate to progressing through high school? \_\_\_\_\_

### **Natural Selection in Pepered Moths**

- What happened to the pepered moth population (light and dark) when the industrial revolution began? \_\_\_\_\_

- Which pepered moth was naturally selected for? \_\_\_\_\_ Explain why. \_\_\_\_\_

**2. Genetic Drift** - \_\_\_\_\_ change in \_\_\_\_\_ caused by a series of \_\_\_\_\_ occurrences that cause an \_\_\_\_\_ to become more or less common in a population.

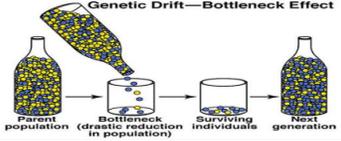
**Bottleneck effect** – a change in \_\_\_\_\_ frequency following a dramatic \_\_\_\_\_ in the size of a population

- Explain how the bottleneck effect affects generations of populations of organisms using the example of blue and yellow alleles in the video. (6:01) \_\_\_\_\_

**Founder effect** – change in allele \_\_\_\_\_ as a result of the \_\_\_\_\_ of a small \_\_\_\_\_ of a population.

- Explain how the founder effect affects generations of populations of organisms using the example of butterflies in the video. (6:01) \_\_\_\_\_

**Genetic drift recap** – Annotate the diagram below as you follow along with the video.

<p><b>Founder Effect</b></p> 	<p><b>Original Population =</b></p>	<p><b>Bottleneck Effect</b></p> 
	<p><b>Critical Event</b></p>	
	<p><b>New Population =</b></p>	

What do the founder effect and bottleneck effect have in common? \_\_\_\_\_

Explain the difference between the founder effect and the bottleneck effect. \_\_\_\_\_

**3. Mutation** – change in the \_\_\_\_\_ of a cell (leads to \_\_\_\_\_ in a population)

**4. Gene flow** - \_\_\_\_\_ of \_\_\_\_\_ from one population to another.

How is gene flow explain with the beetles? \_\_\_\_\_

**Check for Understanding** – Use your video notes and knowledge of mechanisms of evolution to answer the following questions.

1. What is evolution? \_\_\_\_\_ Give an example of it. \_\_\_\_\_

2. What factors determine natural selection? \_\_\_\_\_

3. How was natural selection demonstrated in the peppered moth population? \_\_\_\_\_

4. What are the 2 types of genetic drift? \_\_\_\_\_ Explain the difference between the two. \_\_\_\_\_

5. Hurricane Katrina hit New Orleans and seriously depleted the population of organisms there. The remaining population had to repopulate. This is an example of \_\_\_\_\_. Explain why. \_\_\_\_\_

6. Provide an example of founder effect. \_\_\_\_\_

7. What do mutations do in a population as it relates to evolution? \_\_\_\_\_

8. How does gene flow affect genotypes and phenotypes of a population? \_\_\_\_\_

Give an example of gene flow. \_\_\_\_\_