

## Evolution: Natural and Artificial Selection

### Gizmo Warm-up

Dog breeds and other varieties of domesticated animals were developed through **artificial selection**. Over many generations, breeders selected which animals to mate in order to select for desired traits. The *Evolution: Natural and Artificial Selection* Gizmo allows you to try your hand at breeding insects with a variety of colors. To begin, select the **Artificial selection** option.



1. Drag the 10 insects into the breeding alcoves on the left side of the Gizmo.
  - A. How many breeding pairs are there? \_\_\_\_\_
  - B. How many offspring are produced? \_\_\_\_\_
2. Circled insects have **mutations**, or changes to their DNA. How many of the offspring insects in this generation have mutations? \_\_\_\_\_

<b>Activity B:</b> <b>Artificial selection</b>	<b>Get the Gizmo ready:</b> <ul style="list-style-type: none"><li>• Select <b>Artificial selection</b>.</li><li>• Set the <b>mutation rate</b> to 2.0.</li></ul>	
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**Question:** How can a species be changed through artificial selection?

1. **Set a goal:** In this activity, your goal is to develop insects that are any color you would like.  
What color do you want your insects to be? \_\_\_\_\_  
\_\_\_\_\_
2. **Make a plan:** Follow the directions in the Gizmo to produce five generations of insects.
  - A. How would you describe the process of artificial selection? \_\_\_\_\_  
\_\_\_\_\_
  - B. How will mutations be useful in achieving your goal color? \_\_\_\_\_  
\_\_\_\_\_
  - C. What strategy will you use to produce insects of your desired color? \_\_\_\_\_  
\_\_\_\_\_

# Natural And Artificial Selection Gizmo Answer Key

**John Burdon Sanderson Haldane**

## **Natural And Artificial Selection Gizmo Answer Key:**

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