Name: _____ Date: ____

Student Exploration: Evolution: Mutation and Selection

Vocabulary: adaptation, allele, allele sequence, chromosome, evolution, fitness, gene, genotype, mutation, natural selection, phenotype, trait

Prior Knowledge Questions (Do these BEFORE using the Gizmo.)

 Imagine a white lizard and a brown lizard sitting on a brown rock. A hawk is circling overhead hunting for its next meal. Which lizard do you think the hawk would most likely try to catch? Explain your choice.

The white lizard, as it would be easier both to see and to track from high up in the sky.

Now imagine that the same two lizards were sitting on a dune of white sand. Which lizard do you think the hawk would then most likely try to catch? Why?

The brown lizard for the same reasons.

Gizmo Warm-up

How long could a parrot survive in Antarctica? It would probably not survive long. Parrots do not have adaptations—or helpful characteristics—to survive icy cold weather. Because of this, a parrot is not fit for Antarctica. Fitness describes how well an organism can survive and reproduce in an environment.

In the Evolution: Mutation and Selection Gizmo, you will see how a species' fitness can change over time as it becomes better adapted to its environment.



- 1. On the SIMULATION pane, what is the Average fitness of the population? 0.5
- 2. On the CONTROLS pane, experiment with the Background color sliders.
 - A. Which background color results in the highest fitness? white
 - B. Which background color results in the lowest fitness? black

Answers For The Evolution Of Mutation Test For A Gizmo

Mike Jess

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