

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

Date: \_\_\_\_\_

## Student Exploration: Microevolution

**Vocabulary:** allele, cystic fibrosis, deleterious, dominant allele, fitness, genotype, heterozygote, superiority, heterozygous, homozygous, incompletely dominant, malaria, predator, recessive allele, sickle cell anemia

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

Many people from warm regions carry an **allele** that provides resistance to **malaria**. Two copies of this allele, however, causes a deadly blood disorder called **sickle cell anemia**.

1. Suppose two parents are healthy carriers of the sickle-cell allele. The **genotype** of each parent is  $AS$  ( $A$  is the normal allele, and  $S$  is the sickle-cell allele).

How likely is it for a child of these parents to have sickle cell anemia ( $SS$ )? **50%**

2. Do you think the allele for sickle cell anemia would be common in regions where malaria did not exist? Explain why or why not. **No, the allele for sickle cell anemia would not be common as the region would not be exposed to malaria, thus would not need a resistance towards it.**

### Gizmo Warm-up

If natural selection does not favor one trait over another, the frequencies of various alleles in a population will tend to be stable over long periods of time. But what happens when one allele confers an advantage or disadvantage to an individual? These scenarios and others can be explored with the *Microevolution* Gizmo.



1. The feather color of the parrots in the Gizmo is controlled by two alleles,  $D$  and  $d$ . The  $D$  allele is **incompletely dominant** over  $d$ . What is the feather color of each parrot genotype?

$DD$  **Dark green**

$Dd$  **Light green**

$dd$  **yellow**

2. The **fitness** of parrots is determined by how well they blend into the background trees. Set the **Fitness of  $DD$**  slider to 100% and the other fitness sliders to 60%.

The birds with which genotype blend into the background now?  **$DD$**

3. Click **Begin**, and then click **Predator**. Which parrots were killed by **predators**?  **$Dd$  and  $dd$**

# Microevolution Gizmo Answers

**Joacim Rocklöv**

A red circular graphic with a gradient, appearing as a semi-circle or a partial circle, located to the right of the author's name.

## **Microevolution Gizmo Answers:**

## **Microevolution Gizmo Answers** Book Review: Unveiling the Magic of Language

In an electronic era where connections and knowledge reign supreme, the enchanting power of language has become more apparent than ever. Its ability to stir emotions, provoke thought, and instigate transformation is really remarkable. This extraordinary book, aptly titled "**Microevolution Gizmo Answers**," written by a very acclaimed author, immerses readers in a captivating exploration of the significance of language and its profound impact on our existence. Throughout this critique, we shall delve into the book's central themes, evaluate its unique writing style, and assess its overall influence on its readership.

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