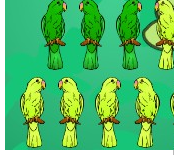


Activity A: Deleterious dominant alleles	<u>Get the Gizmo ready:</u> - Click Reset. - Set the <i>DD</i> and <i>dd</i> sliders to 34%.	
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Introduction: A **deleterious** allele is one that significantly lowers the fitness of an individual. If the deleterious allele is a **dominant allele** (*D*), then both **homozygous** *DD* and **heterozygous** *Dd* individuals will be at a disadvantage.

Question: How will allele frequencies change if a dominant allele is deleterious?

1. Observe: To model the effects of a deleterious dominant allele, set the **Fitness of *DD*** and **Fitness of *Dd*** sliders to 60%. Set the **Fitness of *dd*** to 100%.

Based on the color of the trees, which parrots will be easiest for predators to spot and kill?

The dark green colored parrots.

2. Predict: How do you expect the proportions of *D* and *d* alleles to change in five generations?

It will become more common for *d* to be the chosen allele for the birds because of the adaptation to their surroundings.

3. Record: Click **Begin** and **Predator**. Record the results of hawk predation in the table below.

	<i>DD</i>	<i>Dd</i>	<i>dd</i>	Totals
Starting population	240	20	240	500
Killed by hawks	87	10	1	98
Ending population	153	10	239	402

4. Calculate: To calculate the percentage of survivors for each genotype, divide the **Ending population** by the **Starting population**. Multiply each result by 100 to convert to a percentage, and record the percentages below.

DD 63.75% *Dd* 50% *dd* 99.58 %

5. Analyze: How do the percentages of survivors relate to the fitness of each parrot genotype?