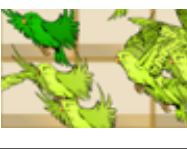


Activity A:	<u>Get the Gizmo ready:</u>	
Alleles and genotypes	- On the DESCRIPTION tab, click Reset. - Check that DD is 50% and dd is 30%.	

Question: How will the proportion of genotypes and alleles change over time when mating is random and no natural selection is occurring?

1. Predict: **Describe** how you expect the proportions of *D* and *d* alleles to change over time.

I think the population of heterozygous (*Dd*) will increase.

2. Gather data: Run a generation in the Gizmo. After clicking **Hatch**, fill in the allele and genotype percentages for generation 1. Repeat this process for 5 generations.

	Initial values	Generation				
		1	2	3	4	5
% <i>D</i> alleles	60	59.9	57.7	58.2	56.5	57.7
% <i>d</i> alleles	40	40.1	42.3	41.8	43.5	42.3
% of <i>DD</i> genotype	50	36.2	33.0	32.2	31.6	32.8
% of <i>Dd</i> genotype	20	47.4	49.4	49.4	49.4	49.8
% of <i>dd</i> genotype	30	16.4	17.6	15.8	18.8	17.4

3. Analyze: **Describe** the patterns you see in your data.

There was a decrease in % *D* alleles and an increase in % *d* alleles. A significant decrease in % of *DD* genotype. There was a significant increase in % of *Dd* genotype. A decrease in % of *dd* genotype.

4. Interpret: Select the ALLELE GRAPH tab. **Describe** what this graph shows.

It shows the allele percentage through each generation. Both colors stay relatively constant.

5. Interpret: Select the GENOTYPE GRAPH tab. **Describe** what this graph shows.

It shows the genotype percentage, giving all 3 possible genotypes *DD*, *Dd*, and *dd*.

6. Gather data: On the DESCRIPTION tab, click **Reset**. Set **DD** and **dd** to any values you like. Fill in the initial values in the table below, and then run the Gizmo for five generations. Record the allele and genotype percentages for each generation in the table below.

	Initial values	Generation				
		1	2	3	4	5
% <i>D</i> alleles	70	70.6	70.9	72.3	71.5	71.5
% <i>d</i> alleles	30	29.4	29.1	27.7	28.5	28.5