me _										
			Ν	<b>Nicroevolu</b>	tion Gizmo	)				
1	Define allele freg	mency								
2.	How would you de	etermine 1	the frequer	ncv of an a	llele in a po	pulation's	aene poo	)?		
			and more decor			palation o	gone per			
Set	t up the initial cond	litions of t	the Microe	volution Giz	zmo as follo	ws: 50% L	DD, 50%	dd; Fi	itness o	f DD: 9
Fith	Based on the non	and Fitnes	SS OF 00: 60	<i>J%</i> describe t	he initial no	pulation ((	$2 \circ n (0)$			
5.	Dased on the pop		ian shown	, describe t			Jen 0).			
	• DD			Dd		dd				
4.	Click b <i>egin,</i> then	predator.	What kind	of bird (ge	notype) wa	s killed mo	st? Expla	ain wh	у.	
	Click broad than	hatah Da	aariba tha	ourropt (C	on 1) nonul	otion				
F	CIICK <i>Dreed</i> . then	natch. De	scribe the	current (G	en i) popul	alion.				
5.	,,									
5.	• DD			Dd		dd				
5.	• DD			Dd		dd				
5. Clic	DD ck continue, preda	tor. breed	I. and hatc	Dd	qet to Gen	dd 6.			_	
5. <i>Clic</i> 6.	• DD ck continue, preda Click Allele Graph	tor, breed	<i>I, and hatc</i> v the plot c	Dd h until you ; of allele per	get to Gen centages o	dd 6. ver time. T	hen click	k Gen	otype G	raph ar
5. <i>Clic</i> 6.	DD ck continue, preda Click Allele Graph draw the plot of g	<i>tor, breed</i> ז and drav enotype p	<i>I, and hatc</i> w the plot c ercentage	Dd h until you of allele per s over time	<i>get to Gen</i> centages o	dd 6. ver time. T	hen click	k Gen	otype G	<i>raph</i> ar
5. <i>Clic</i> 6.	• DD ck continue, preda Click Allele Graph draw the plot of g	<i>tor, breed</i> ι and drav enotype p	<i>I, and hatc.</i> w the plot c percentage	Dd <i>h until you</i> of allele per s over time	get to Gen ccentages o	dd 6. ver time. T	hen click	k Gene	otype G	<i>raph</i> ar
5. <i>Clic</i> 6.	• DD	<i>tor, breed</i> i and drav enotype p	<i>I, and hatc</i> w the plot c percentage	Dd ch until you of allele per s over time	get to Gen rcentages o e.	dd 6. ver time. T	hen click	k Gene	otype G	raph ar
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- 7. What happened to the frequency of each <u>allele</u> over time? Include in your answer the initial and final percentages of each allele.

- 8. Describe the conditions for natural selection in this simulation:
  - What was the ultimate source of the genetic diversity and variation of feather color in this population?
  - What was the selective pressure in this simulation?
  - What color of bird had a higher fitness? Explain why.
  - How did each new generation differ from the previous generation, on average? Explain why.
  - Did this population stay the same, adapt, or go extinct? Explain how you know.
- 9. Explain why doesn't the recessive d allele disappear completely even though is gives lower fitness?
- 10. Why might this be an advantage in case the environment changes in the future?
- 11. If you change the fitness of the genotypes (in the original *Control* tab), what changes about the simulation. Explain why.
- 12. If the environment were to suddenly change, what two factors would help the population adapt quickly?
- 13. If all 3 genotypes have the same fitness, what will happen to the population over time? Explain why. Use the Gizmo to test your prediction.