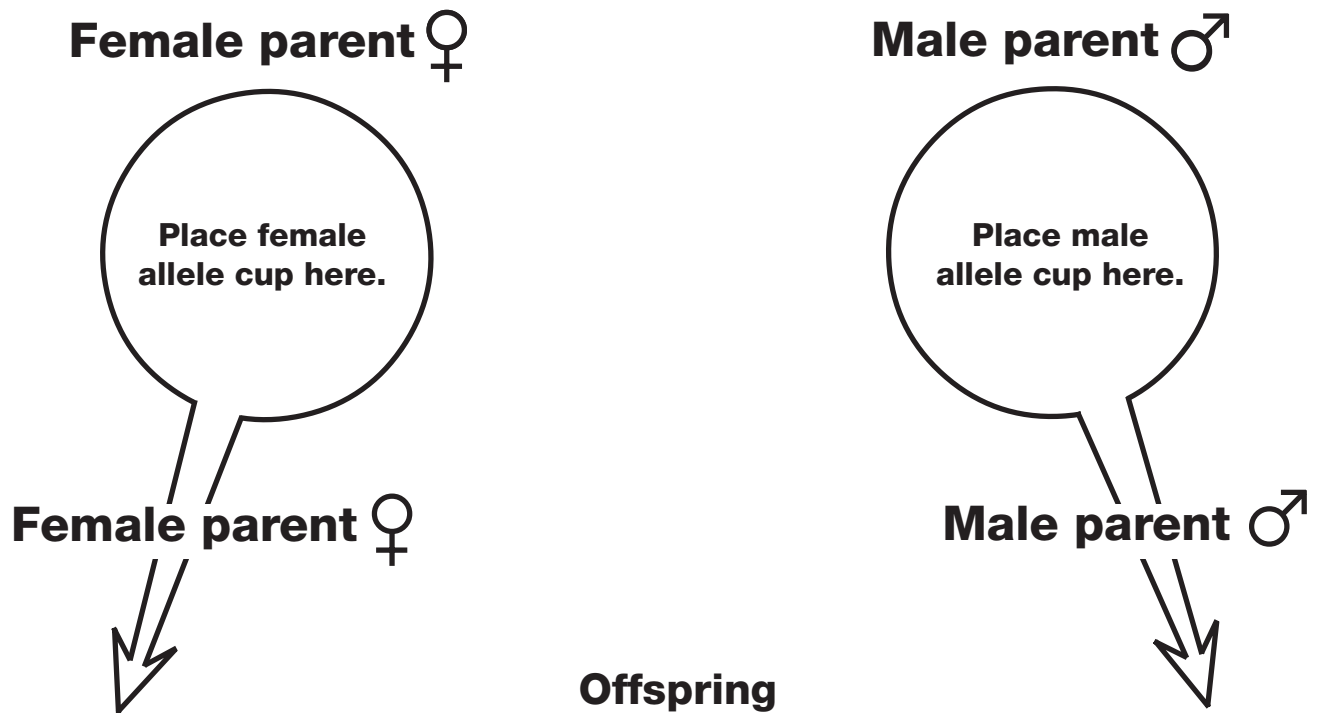


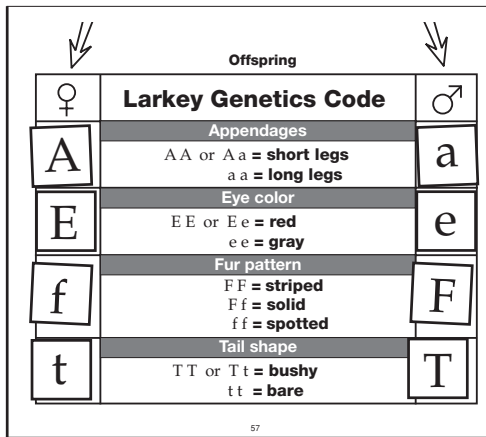
# LARKEY GENETICS MAT



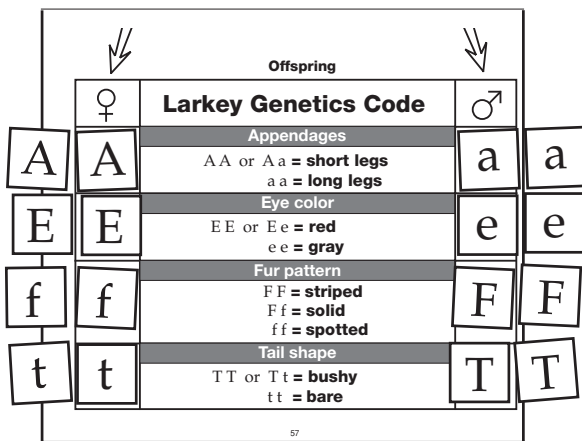
♀	<b>Larkey Genetics Code</b>	♂
	<b>Appendages</b>	
	A A or A a = <b>short legs</b> a a = <b>long legs</b>	
	<b>Eye color</b>	
	E E or E e = <b>red</b> e e = <b>gray</b>	
	<b>Fur pattern</b>	
	F F = <b>striped</b> F f = <b>solid</b> f f = <b>spotted</b>	
	<b>Tail shape</b>	
	T T or T t = <b>bushy</b> t t = <b>bare</b>	

# LARKEY BREEDING STEPS

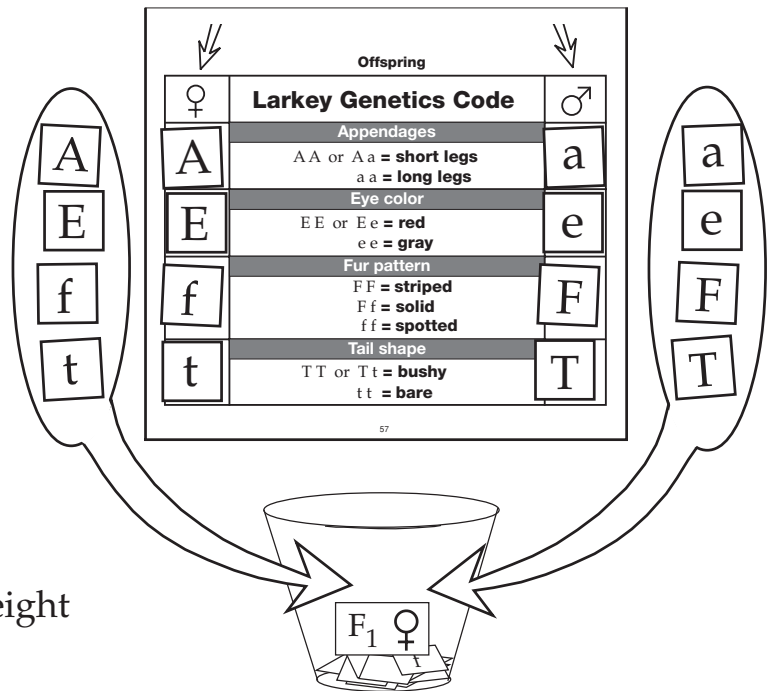
1. Draw four allele tiles from the breeding female and four allele tiles from the breeding male. Put the eight alleles on the mat to produce the genotype of the female offspring.



2. Duplicate the genotype with eight allele tiles from the gene pool.



3. Transfer the eight duplicate alleles to a cup. This is the offspring's genotype cup. Write the generation of the offspring on a pink ID tag.



- Return the four alleles on the mat that came from the breeding female to the female's genotype cup. Return the four alleles that came from the breeding male to the male's genotype cup.
- Repeat Steps 1–3 to produce a male offspring. Prepare a blue ID tag for the male offspring's genotype cup.

Name \_\_\_\_\_

Period \_\_\_\_\_ Date \_\_\_\_\_

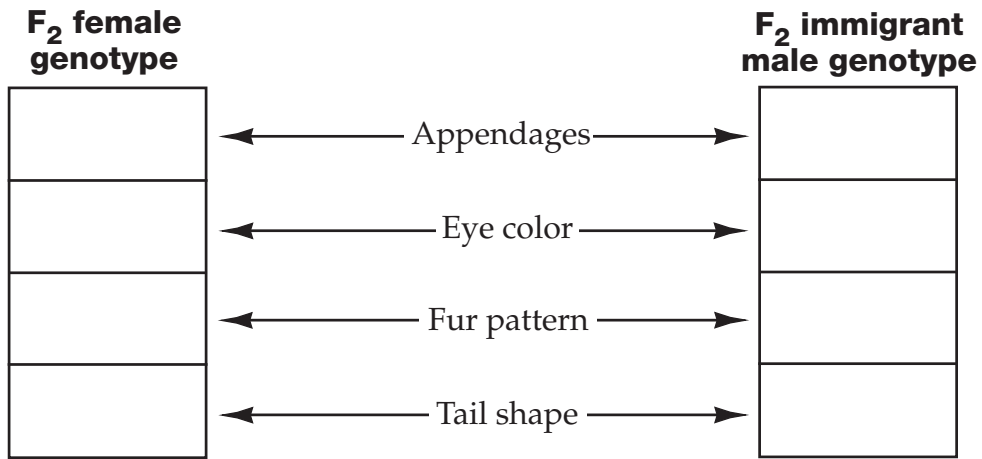
# LARKEY BREEDING RESULTS

HOMOZYGOUS PARENTS									
	Leg length		Eye color		Fur pattern			Tail	
Gen.	Traits		Traits		Traits			Traits	
	Short	Long	Red	Gray	Striped	Solid	Spotted	Bushy	Bare
P									
F <sub>1</sub>									
F <sub>2</sub>									



# PUNNETT SQUARES

Record the genotype of both F<sub>2</sub> parents.



Appendages

Eye color

Fur pattern

Tail shape





- Based on the results of your Punnett squares, predict the percentage of offspring that will have each trait.

Trait	%	Trait	%	Trait	%	Trait	%
short legs		red eyes		striped fur		bushy tails	
long legs		gray eyes		solid fur		bare tails	
				spotted fur			

- Explain how traits that are not expressed in one generation can reappear in the next generation.

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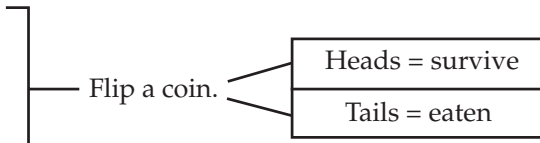


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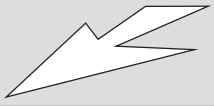


# PRAIRIE LARKEY BREEDING RECORD

Phenotype	Survival rate
Long legs and striped fur	100%
Long legs and solid fur	100%
Short legs and spotted fur	0%
Long legs and spotted fur	50%
Short legs and solid fur	50%
Short legs and striped fur	50%

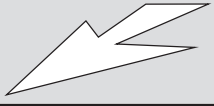


Female ♀	Phenotype 	Genotype _____ _____ _____	Male ♂	Phenotype 	Genotype _____ _____ _____
Generation <b>P</b>			Generation <b>P</b>		



**Immigrant male**

Male ♂	Phenotype 	Genotype _____ _____ _____	Female ♀	Phenotype 	Genotype _____ _____ _____
Generation			Generation		



**Immigrant male**

Male ♂	Phenotype 	Genotype _____ _____ _____	Female ♀	Phenotype 	Genotype _____ _____ _____
Generation			Generation		



**Immigrant male**

Male ♂	Phenotype 	Genotype _____ _____ _____	Female ♀	Phenotype 	Genotype _____ _____ _____
Generation			Generation		



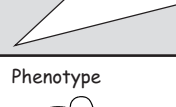

# FOREST LARKEY BREEDING RECORD



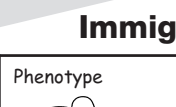

Phenotype	Survival rate
Short legs and spotted fur	100%
Short legs and solid fur	100%
Long legs and striped fur	0%
Short legs and striped fur	50%
Long legs and solid fur	50%
Long legs and striped fur	50%

Flip a coin.



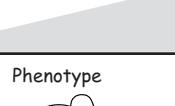

Heads = survive



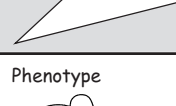

Tails = eaten



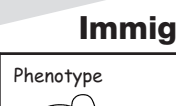

Female ♀	Phenotype	Genotype
Generation <b>P</b>		<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>

Male ♂	Phenotype	Genotype
Generation <b>P</b>		<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>



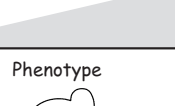

**Immigrant male**



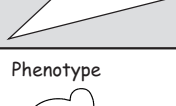

Male ♂	Phenotype	Genotype
Generation		<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>



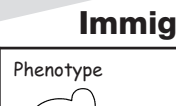

Female ♀	Phenotype	Genotype
Generation		<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>

Male ♂	Phenotype	Genotype
Generation		<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>


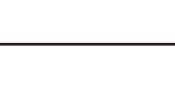
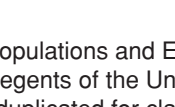
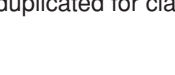
**Immigrant male**


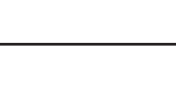


Male ♂	Phenotype	Genotype
Generation		<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>


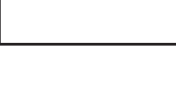
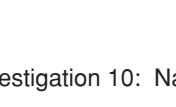

Female ♀	Phenotype	Genotype
Generation		<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>

Male ♂	Phenotype	Genotype
Generation		<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>

**Immigrant male**

Male ♂	Phenotype	Genotype
Generation		<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>

Female ♀	Phenotype	Genotype
Generation		<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>

Male ♂	Phenotype	Genotype
Generation		<input type="text"/>
		<input type="text"/>
		<input type="text"/>
		<input type="text"/>

Name \_\_\_\_\_

Period \_\_\_\_\_ Date \_\_\_\_\_

# PRAIRIE AND FOREST LARKEY BREEDING RESULTS.....

Prairie Larkey									
	Leg length		Eye color		Fur pattern			Tail	
Gen.	Traits		Traits		Traits			Traits	
	Short	Long	Red	Gray	Striped	Solid	Spotted	Bushy	Bare
P									
F <sub>1</sub>									
F <sub>2</sub>									

Forest Larkey									
	Leg length		Eye color		Fur pattern			Tail	
Gen.	Traits		Traits		Traits			Traits	
	Short	Long	Red	Gray	Striped	Solid	Spotted	Bushy	Bare
P									
F <sub>1</sub>									
F <sub>2</sub>									



# VOYAGE TO THE GALÁPAGOS (1 OF 2)

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1. What was the “mystery of mysteries” Darwin started to think about after visiting the Galápagos Islands?

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2. A population of ground finches lives on Daphne Major Island. There is beak size variation in the population. What selective pressure influences beak size, and how does that selective pressure affect the number of offspring with large and small beaks?

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3. One species of finch came to the Galápagos Islands many years ago. Today there are 13 species of finches. Explain how the change from one species to 13 species might have happened.

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4. On one island the marine iguanas are large, and on a second island they are small. Discuss small size as an adaptation that helps the population survive on the second island.

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# VOYAGE TO THE GALÁPAGOS (2 OF 2)

5. Discuss how the land iguana may have evolved into the marine iguana. Think about factors such as variation, selective pressure, and isolation as you prepare your answer.

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6. Masked boobies have behaviors that appear to be bad for survival of the population. Identify two of these behaviors and discuss how they are in fact adaptations that improve the chances that the population will survive.

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7. What can happen to an island ecosystem when a new kind of plant or animal is introduced? What effects did the arrival of humans have on the Galápagos Island ecosystems? \_\_\_\_\_

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Name \_\_\_\_\_

Period \_\_\_\_\_ Date \_\_\_\_\_

## NATURAL SELECTION: LARKEYS

These are the traits after the larkeys moved to the \_\_\_\_\_ environment.

Generation	Appendages		Eye color		Fur pattern			Tail shape	
	Short	Long	Red	Gray	Striped	Solid	Spotted	Bushy	Bare
Parent									
F <sub>6</sub>									

These are the traits after the larkeys moved to the \_\_\_\_\_ environment.

Generation	Appendages		Eye color		Fur pattern			Tail shape	
	Short	Long	Red	Gray	Striped	Solid	Spotted	Bushy	Bare
Parent									
F <sub>6</sub>									

1. Describe how the population of larkeys changed when it moved to the forest.

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2. Describe how the population of larkeys changed when it moved to the prairie.

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3. What caused the population to change? (Answer this question on the back of the page.)

## **ASSESSMENT—GENERAL RUBRIC**

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- 4** The student uses two or more facts to explain a bigger idea by making connections between those facts. All of the information is correct, and the connections and conclusions are correct.
- 3** The student uses two or more facts to attempt to explain a bigger idea by making connections between those facts. The facts or the connections have minor errors.
- 2** The student provides two or more facts that are related to the task or questions asked, but does not make any connections between the facts.
- 1** The student provides one fact that is related to the task or question asked.
- 0** The student does not answer the question, does not complete the task, or gives an answer that has nothing to do with what was asked.