LARKEY	GENETICS MA	T		
Fema	le parent Q	N	lale parer	nt 🗸
Pla allel Female	ace female le cup here. parent Q		Place mail allele cup ha Male pa	e ere.
14		Offspring		₩.
♀	Larkey	Genetics C	ode	$\overline{\mathbf{Q}}$
		Appendages		
	AA	or A a = short leg a a = long legs	S	
		Eye color		
	ΕE	or Ee = red		
		Fur pattern		
		F F = striped		
		F f = solid		
		Tail shape		
	ΤT	or T t = bushv		
		tt = bare		

LARKEY BREEDING STEPS

 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.

V	Offspring	Ŷ
Ŷ	Larkey Genetics Code	d
Α	Appendages AA or Aa = short legs a a = long legs	а
E	Eye color EE or Ee = red ee = gray	e
f	Fur pattern F F = striped F f = solid f f = spotted	F
t	Tail shape TT or Tt = bushy tt = bare	Τ
	57	



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.



- 4. 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.
- 5. Repeat Steps 1–3 to produce a male offspring. Prepare a blue ID tag for the male offspring's genotype cup.

Period Date_____

LARKEY BREEDING RESULTS

	HOMOZYGOUS PARENTS														
	Leg lo	ength	Eye	color	Fu	ır patte	ern	Та	ıil						
Gan	Tra	nits	Tra	aits		Traits		Tra	its						
Gen.	Short	Long	Red	Gray	Striped	Solid	Spotted	Bushy	Bare						
Р															
F ₁															
F ₂															

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							60		 			 	 	 	

RESPONSE SHEET: GENE	Name Period TIC VARIAT	Date
$\begin{array}{c} \begin{array}{c} \\ \\ \\ \\ \\ \end{array}\end{array}$	\sim	Larkey Genetics Code Appendages AA or Aa = short legs
$\int \odot \int $		aa = long legs Eye color EE or Ee = red ee = gray
AND ALL		Fur pattern FF = striped Ff = solid ff = spotted
Bill looked at these two larkers parent	s and said	Tail shape TT or Tt = bushy tt = bare

Bill looked at these two larkey parents and said,

It's impossible to tell what the offspring of these two gray-eyed parents will look like. The offspring could have any of the larkey traits.

Angie thought about it for a minute and said,

Well, I'm not sure what the offspring will look like exactly, but I can tell you this.

- All of the offspring will have gray eyes. ٠
- None of the offspring will have spots.

Whose answer do you think is better? Explain why you think so.

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							62								

Name _____ Period _____ Date _____

PUNNETT SQUARES

Record the genotype of both F_2 parents.



1. 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			

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

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Jenny and Ray were doing the larkey breeding activity. These are the two parents they started with.



Jenny said,

When we breed these larkeys, the F_1 offspring will all have short legs and solid gray fur—no stripes or spots. I think the F_2 and F_3 generations will all have short legs and solid fur, too. Long legs, striped fur, and spotted fur will not show up again in this population.

Ray studied the genotypes and said,

No, there is a possibility for long legs, spots, and stripes to show up in the $\rm F_2$ generation.

Discuss Jenny's idea and Ray's idea.

_____ Date_____

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%	





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_____Date_____

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%



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Period Date

PRAIRIE AND FOREST LARKEY BREEDING RESULTS

	Prairie Larkey														
	Leg lo	ength	Eye	color	Fu	ır patte	ern	Та	nil						
Gon	Tra	its	Tra	nits		Traits		Tra	its						
den.	Short	Long	Red	Gray	Striped	Solid	Spotted	Bushy	Bare						
Р															
F ₁															
F ₂															

	Forest Larkey														
	Leg lo	ength	Eye	color	Fu	ır patte	ern	Та	lil						
Gon	Tra	nits	Tra	nits		Traits		Tra	its						
Gen.	Short	Long	Red	Gray	Striped	Solid	Spotted	Bushy	Bare						
Р															
F ₁															
F ₂															

Name	

Period ____

___ Date__

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RESPONSE SHEET: NATURAL SELECTION

Katie said,

Today, giraffes have long necks that allow them to eat leaves high in trees. They got longer necks by stretching up for leaves. They passed the trait of longer neck to their offspring. The offspring stretched up for even higher leaves. After many generations, the giraffe's neck was really long.

Do you think Katie's explanation for how the giraffe's neck got long is right? Explain.

I	Name	
]	Period	Date
VOYAGE TO THE GALÁPAGO	S (1 OF 2)	

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

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.

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.

Na	ame	
Ре	eriod	Date
VOYAGE TO THE GALÁPAGOS	6 (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.

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.

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.

	Appen	dages	Eye	color	Fu	r patte	Tail shape			
Generation	Short	Long	Red	Gray	Striped	Solid	Spotted	Bushy	Bare	
Parent										
F ₆										

These are the traits after the larkeys moved to the ______ environment.

	Appen	dages	Eye	color	Fui	⁻ patte	Tail shape			
Generation	Short	Long	Red	Gray	Striped	Solid	Spotted	Bushy	Bare	
Parent										
F ₆										

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

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

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

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ASSESSMENT—GENERAL RUBRIC

- 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.