Name _____ Period _____ Date _____

CHAPTER 7 QUICK LAB

Sex-Linked Inheritance

The relationship between genotype and phenotype in sex-linked genes differs from that in autosomal genes. A female must have two recessive alleles of a sex-linked gene to express a recessive sex-linked trait. Just one recessive allele is needed for the same trait to be expressed in a male. In this lab, you will model the inheritance pattern of sex-linked genes.

Problem

How does probability explain sex-linked inheritance?

MATERIALS

- 2 coins
- masking tape
- marker
- index card with genetic cross

PROCESS SKILLS

Predicting

Procedure

1. Use the tape and marker to label two coins with the genetic cross shown on your group's index card. One coin represents the egg cell and the other coin represents the sperm cell.

2. Flip the two coins and record the genotype of the "offspring."

3. Repeat this step until you have modeled 50 genetic crosses. Record each genetic cross that you model on the data table.

Data Table: Genetic crosses for coin tosses

Toss Number	Genetic Cross	Toss Number	Genetic Cross
1		26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

4. Calculate the genotype and phenotype probabilities for both males and females. Calculate the frequency of male offspring and female offspring.

Analyze and Conclude

1. **Analyze** Do all of the females from the genetic cross show the recessive trait? Do all of the males show the recessive trait? Why or why not?

2. **Interpret** Make a Punnett square that shows the genetic cross. Do the results from your Punnett square agree with those from your experiment? Why or why not?