Predicting Results LAB

Could you predict how many brown rabbits would result from crossing two heterozygous black rabbits? Try this investigation to find out. Brown (b) is recessive to dominant black (B) fur in rabbits.

Goals:

1. Model change events in heredity
2. Compare and contrast predicted and actual results.

Materials:

Paper bags (2)   Red and White beans

Safety Precautions: Do not taste, eat or drink any materials in the lab.

PROCEDURE:

1. Use the Punnett Square to predict how many red/red, red/white and white/white combinations are possible. The combinations represent the coat colors of rabbit offspring.
2. Place 25 red beans and 25 white beans in a paper bag. Place 25 red beans and 25 white beans in the second paper bag. Red beans represent black alleles and white beans represent brown alleles.
3. Label one of the bags "Female" for the female parents and the other "Male" for the male parent.
4. Use the "Rabbit Coat" data table (*below*) to record the combination each time you remove 1 bean from each bag. Your table will need to accommodate 50 picks.

Rabbit Coat		
	Predicted Results	**Actual Results**
Red/Red		
Red/White		
White/White		

5. Without looking, remove one ban from each bag. The two beans represent the alleles that combine when a sperm and egg join. After recording, return the beans to their bags.
6. Count and record the total numbers for each of the three combinations in the data table below.
7. Compline and record the class totals in the "Gene Combinations" data table below.

Gene Combinations			
Rabbis	Red/Red	Red/White	White/White
Your Total			
Class Total			

CONCLUISON AND APPLICATION

1. What combination occurred the most often?

2. Calculate the ration of red/red, red/white and white/white. What hair color in rabbits do these combinations represent?

3. Compare your predicted (expected) results with your observed (actual) results. Why are the results different?

4. Hypothesize how you could get predicted results to be closer to the actual results.