Name: _____Date: _____Per: _____

Lab: Make the Right Call

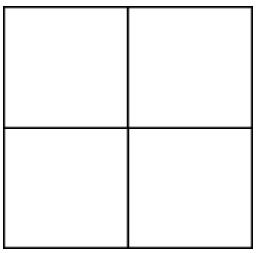
G= Green g= white

1. For part 1. Put 2 green marbles in the "Female" bag. These represent the female parent's alleles for fur color (GG).
2. Put 2 white marbles in the "Male" bag. These represent the male parent's alleles for fur color (gg).
3. Without looking, take out 1 marble from the "Female" bag and record it on the chart for Trial 1. Return the marble to the "Female" bag.
4. Without looking, take out 1 marble from the "Male" bag and record it on the chart for Trial 1. Return the marble to the "Male" bag.
5. Combine both parents allele's in the "Offspring's Genotype" column.
6. Repeat a total of 10 times until Part 1 chart is full. Complete the "Results" table.
7. Make a Punnett square using the parent's alleles. Complete the "Results" table.
8. For part 2, repeat steps 3-7 using 2 green marbles in female bag (GG) and 1 green and 1 white marble in the male bag (Gg).
9. For part 3, repeat steps 3-7 using 1 green and 1 white marble in the female, and 1 green and 1 white marble in the male bag.

G = Green g = White

Part 1 – Crossing Two Homozygous Parents (GGxgg)

Data Table	Number 1		
Trial	Allele From Bag 1 Female Parent	Allele From Bag 2 Male Parent	Offspring's Genotypes
1			
2			
3			
4			
5			
6			
7			
8			
9			



10			

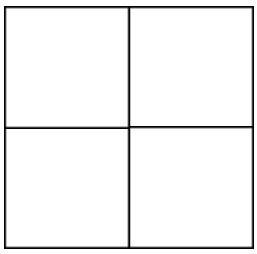
Results from marble model		
Genotype	Amount	%

Results from Punnett Square		
Genotype	Amount	%

Compare the results that you obtained using the marble model with the results that you obtained using the Punnett Square (use genotypes and %'s in your answer).

Part 2 – Crossing a Homozygous Parent with a Heterozygous Parent (GGxGg)

Data Table	Number 2		
Trial	Allele From Bag 1 Female Parent	Allele From Bag 2 Male Parent	Offspring's Genotypes
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			



Results from marble model		
Genotype	Amount	%

Results from Punnett Square		
Genotype	Amount	%

Compare the results that you obtained using the marble model with the results that you obtained using the Punnett Square (use genotypes and %'s in your answer).

Part 3 – Crossing a Heterozygous Parent with a Heterozygous Parent (GgxGg)

Data Table	Number 3		
Trial	Allele From Bag 1 Female Parent	Allele From Bag 2 Male Parent	Offspring's Genotypes
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Results from marble model		
Genotype	Amount	%

Results from Punnett Square		
Genotype	Amount	%

Compare the results that you obtained using the marble model with the results that you obtained using the Punnett Square (use genotypes and %'s in your answer).

Conclusion

1. What did the colored marbles that you put in the bags represent? _____

   _____

2. Why did you put 2 marbles in each bag? _____

   _____

3. What did the bag represent? _____

4. In humans, typically how many alleles for each trait do we have? _____

5. Where do we get those alleles? _____

6. Below, graph all genotype results from each of the 3 marble models in your investigations. Don't forget to label all parts of your graph and have a meaningful title.

Part 1 Part 2 Part 3