

Gene Pool and Natural Selection Worksheet

Non-Selection Data Chart

	Tally Each Genotype in First Generation	Total	Frequency
RR			
RW			
WW			

1. Calculate the theoretical frequency of each of the genotypes (RR, RW, WW) in the original population knowing the makeup of the gene pool. (*Hint:* R = 0.6 W = 0.4)
2. Use your random drawing data in the chart above to calculate the frequency of the actual alleles and genotypes in the next generation. Calculate p, q, p², 2pq and q² from the data.
3. How do the frequencies of the original and the first generation compare? Is there a major change in the frequencies in the gene pool?

Selection Data Chart

	Tally Each Genotype in New Generation	Total	Frequency
RR			
RW			
WW			

4. Use the data collected when selection against WW occurred to calculate the theoretical frequencies in the second generation. How does the calculated frequency of RR and RW compare to the actual?
5. After one generation of selection, what has happened to the gene pool?
6. If the selection against WW continues, will all of the W genes be eliminated from the population? If so, why? If not, why not?