

Upon completion of *Finches and Evolution (WB)*, students should be able to:

1. Describe how rainfall can explain the distribution of beak size in Darwin's finches.
2. Explain that a quantitative trait like beak size is determined by multiple alleles that each contribute to the trait's value in an individual.
3. Predict how the average value for a quantitative trait in a population is likely to change due to selection in a given direction.
4. Explain how both natural selection and mutation can affect the amount of variation in the distribution of a quantitative trait in a population.
5. Explain how the amount of variation in trait values can affect a population's evolution and likelihood of persistence under different selective scenarios.
6. Define and qualitatively explain the underlying genetic basis of correlated traits.
7. Predict what will happen to the average value of a trait in a population if a second, correlated trait is under selection.
8. Read a graph displaying values for one trait plotted against values for a second trait, and explain the pattern in the graph in terms of the degree of correlation between the traits.
9. Describe at least one mechanism by which a population can evolve into two sub-populations, each adapted to a different environment (or aspect thereof).
10. Draw a bimodal distribution of trait values for a population.
11. Understand that a high mutation rate can facilitate a population's persistence when under strong selective pressure.
12. Describe how both local mating and assortative mating can result in the evolution of a bimodal distribution of a trait when the environment is varied.