

Sample HS Biology lesson:**NGSS Standards:**

HS-LS4-4. Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

Science and Engineering Practice:

SP4: Analyze and interpret data.

The students have been trying to answer the question, How do physical adaptations impact the survival of a species? The teacher explains to the students that they will be conducting a simulation to determine how the adaptations to the beak of finches impact how much food they are able to eat. Students will discuss the implications for survival based on the analysis of the data collected. The teachers give students materials to tools to construct a model beak— knives, forks, and spoons. The teacher brings the students outside and spreads beans on the ground to simulate seeds to be eaten by the birds. Students attempt to pick up beans using their “beaks,” and put the beans into cups. Then, students collect data to tally the total number of beans they were able to get with each tool. Then, students analyze the results and determine which model adaptation would “survive”. The less successful models are phased out- to simulate extinction. The model that remains is the one that has survived the adaptations. Students must explain which beak became extinct first- and why. They must also explain why the surviving model remained. Have students extend their thinking by asking them what would happen to the beans in different environments (short grass, long grass, dirt, etc.).

Adapted from NGSS Life Science. (2015). Darwin’s finch adaptations lab. Retrieved from

<http://www.ngsslifescience.com/science.php?/biology/lessonplans/C473/>