

Student Score = 30

6. Using your knowledge of natural selection, and the information in the *Introduction* and *Figures 1-4*, propose an explanation that accounts for the change in the mean depth of the finches' beaks between 1976 and 1978.

From 1976 to 1978, the mean depth of finches' beaks increased from 9.2 mm to 10 mm. This happened because of natural selection. As I read in the *Introduction*, a major drought happened in 1977. This drought caused there not to be a lot of seeds available for finches to eat. In addition, the seeds that were available, were mostly large tough seeds that finches don't usually eat. Since the main diet of finches is seeds, this was a problem. Now there was going to be a struggle for survival. Only the strongest finches and ones that had larger beaks that could eat the large tough seeds would survive. Then, these strong finches with a wider beak depth would be able to reproduce and pass on their traits while the finches with a smaller beak depth wouldn't. Over the years, this would cause an average increase in beak size. On a small scale, this is an example: When a mother finch has babies, they are all going to be a little bit different due to genetic variation. One might have a small beak depth and another might have a large beak depth. If only one of these babies were going to survive, it would be the one with a larger beak depth. This is because it could eat the large tough seeds better. Basically, it would win the struggle for survival. Then when that bird had babies it would pass on the trait of having a larger beak to them.

Student Response

From 1976 to 1978, the mean depth of finches beaks increased from 9.2 mm to 10 mm. This happened because of natural selection. As I read in the *Introduction*, a major drought happened in 1977. This drought caused there not to be a lot of seeds available for finches to eat. In addition, the seeds that were available were mostly large tough seeds that finches don't usually eat. Since the main diet of finches is seeds this was a problem. Now there was going to be a struggle for survival. Only the strongest finches and ones that had longer beaks that could eat the large, tough seeds would survive. Then, these strong finches with a wider beak depth would be able to reproduce and pass on their traits while the finches with a smaller beak depth wouldn't over the years, this would cause an average increase in beak size. On a small scale, this is an example: When a mother finch has babies, they are all going to be a little bit different due to genetic variation. One might have a small beak depth and another one might have a large beak depth. If only one of these babies were going to survive, it would be because it could eat the large tough seeds better. Basically, it would win the struggle for survival. Then when that bird had babies it would pass on the trait of having a larger beak to them.