SORTING FINCH SPECIES CLICK AND LEARN

KEY CONCEPTS

- The 13 species of finches living on the Galápagos Islands evolved from a common ancestor within the last 2 million to 3 million years.
- Finches discriminate between members of their own species and those of a closely related species based on song and appearance.
- A spectrogram is a visual representation of how sound frequencies change over time. Similar songs generate similar spectrograms.

QUESTIONS

Read the information provided on the first screen of the Click and Learn and by clicking on the "About Daphne Major" and "About Spectrograms" buttons. Then answer the questions below.

1. How do finches recognize members of their own species?

   _____

2. The Galápagos islands are considered to be "young" islands. Explain what this means.

   _____

3. The medium ground finch (*Geospiza fortis*) and the cactus finch (*Geospiza scandens*) are similar in size and appearance.
   a. As you can tell from their scientific names, they belong to different species. What taxonomic ranks do they share?

      _____

   b. Which physical trait varies the most between these two species?

      _____

   c. The medium ground finch and the cactus finch are adapted to consume different types of foods. Can you think of a situation in which the medium ground finches would have a survival advantage over the cactus finches? A disadvantage?

      _____

      _____

      _____

4. From the map, in what ocean are the Galápagos Islands found? Where are they in relation to the United States?

   _____

5. Zoom all the way in to Daphne Major. Describe its appearance in two sentences.

   _____

   _____

6. What is a spectrogram? What variables are on the *x*- and *y*-axes?

7. Listen to the three examples of sound and related spectrogram. Make one observation about each of the three spectrograms.

8. When do the finches on the Galápagos Islands learn their songs? From whom do they learn their song?

Click on the "Get Started!" button and answer the questions below as you proceed through the Click and Learn.

9. How easy was it to sort finches by song?

10. When the spectrograms were revealed, did you have to change the grouping of any of the finches? _____ Which characteristic did you find it easier to sort by, song or spectrogram?

11. Did seeing the photos help you sort the finches? Explain.

12. Did you change the grouping of any of the finches after zooming in on the beak?

13. At the end of the exercise, which trait allowed you to more easily tell which birds belonged to the same species? (The species name is not a trait!)

Answer the two multiple-choice questions that appear in the window on the right and then answer the following questions.

14. Explain why the offspring of a cactus finch and a medium ground finch would look like an intermediate between the two birds, but the song would not be an intermediate.

15. Provide a possible explanation for why hybrids are rare and not as fit as either parent species.

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