GRADES 5-8: Preparing for Your Visit

The following activities are designed to help you and your students make the most of your visit to the *Darwin* exhibition.

Darwin's Great Question: Read this story told by Niles Eldredge, curator of the *Darwin* exhibition, aloud to your students:

> Darwin returned from the *Beagle* voyage with a question: What keeps one plant or animal from overpopulating the planet and living everywhere? Take elephants, a species he was familiar with. Suppose a pair were to mate and have a couple of babies. Those babies would grow up to have their own offspring, the cycle would go on and on, and the elephant population would explode. But since the world isn't neck to neck with elephants, Darwin realized that something in nature must limit population growth.

Follow up with questions such as:

1. What things do you think limit the elephant population?
2. What are some general factors that would tend to limit all populations?
3. Why do you think it was helpful for Darwin to pick an animal that he was familiar with?

Natural Selection: Share the sidebar in this guide on "How Does Natural Selection Work?" with your students. Discuss the fundamentals of natural selection: variation, inheritance, selection, and time, leading to adaptation. Ask questions such as, What does it mean that family members may resemble each other? What about the fact that classmates may look very different from one another? What might result from competition between members of a species? How does variation within a species affect the outcome of this competition? What are some examples from nature that show this process at work?

Geologic Time Activity: Evolution often involves the passage of vast amounts of time. *Understanding Geologic Time* helps students grasp that concept by researching and presenting different time periods in Earth's history. Print out and distribute the PDF available at http://www.amnh.org/education/resources/rfl/pdf/dino_10_time.pdf and guide your students through the related activity.

Internet Activity: Have students visit the Animals, Adaptation, & the Galapagos/Science Explorations website at http://teacher.scholastic.com/activities/explorations/adaptation/. This activity engages students in some of the most important aspects of being a scientist: observation, finding patterns in nature, and developing theories by considering evidence. Encourage students to keep a field journal while they complete the activities. The site then provides instructions for writing science reports or giving PowerPoint presentations.

References: Find activities related to the nature of science, adaptation, heredity, and diversity of organisms at:

- **University of California Museum of Paleontology:** Understanding Evolution for Teachers (http://evolution.berkeley.edu/evolibrary/home.php)
- **National Center for Science Education** (http://www.ncseweb.org/)
- **American Association for the Advancement of Science:** Evolution on the Front Line (http://www.aaas.org/news/press_room/evolution)
- "Teaching about Evolution and the Nature of Science," published by the National Academies of Science, can be downloaded for free from http://www.nap.edu/catalog/5787.html
- A list of evolution resources is available from the National Science Teachers Association at http://www.nsta.org/evresources

Welcome to the DARWIN EXHIBITION

Complete the activities below as you walk through the exhibition. You will need a pen or pencil and a hard surface to write on.

Voyage of the *Beagle*: Pick three things that Darwin collected during his five-year voyage around the world. In a few sentences, describe what you think he learned from each one.

1. _____

2. _____

3. _____

Animals and Adaptation: Choose an animal, either alive or a mounted specimen, and draw a picture of it on the other side of this page. List four of its features, and describe how you think each helps make the animal well-suited for its environment.

1. _____

2. _____

3. _____

4. _____

Why are Living Things so Diverse? Watch the Natural Selection video in the last room of the exhibit. Fill in the words below that represent the underlying mechanism of natural selection.

V _____ I _____ S _____ T _____ A _____

Pick an example from the exhibition that illustrates natural selection at work. Use the five terms above to explain how these organisms evolved.

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