OBSERVING NATURE

Suggested Grade Level: Upper Elementary to Middle School (4th to 8th grades)

Subject: Science, Language Arts, Visual Arts

Estimated Time: 1-5 class sessions

Introduction

In the close observation of nature, art and science intersect.

Some Japanese artists of the Edo period were such keen students of nature that the actual genus and species of the animals they depicted can be identified. For example, a scientist has identified the birds in *Three Cranes and Bamboo:* The middle crane is a Japanese Crane (also called "Redcrowned Crane"), *Grus japonensis.* The right and left birds are Hooded Cranes, *Grus monacha.*

Today, biologists also spend time observing animals in the wild or in laboratories. To learn more about how animals interact with their environment, naturalists spend long hours watching how they hunt and gather food, raise families, and respond to seasonal changes. They study the plants they eat and use for bedding and the way they interrelate with other organisms. Biologists try not to bring their own biases with them when studying animals, but look at them openly and objectively.

Lesson Objectives

Students will:

- 1. Use techniques from live studies of animals to inform their artwork and writing.
- 2. Use artworks from the Pacific Asia Museum as the basis for understanding these ideas and for engaging student critical thinking and writing.

Key Terms

behavior field observation life study objectivity portait realism stylized transect

Instructional Materials

- From *Nature of the Beast* website:
 - Praying Mantis, By Shibata Zeshin (1807-1891), Japan, 19th C., Woodblock print of ink on paper, Pacific Asia Museum Collection, Gift of Dr. George W. Housner, 2001.21.38
 - Three Cranes and Bamboo, Japan, early Edo period; Genroku reign; c. 1700, Two-panel screen of ink, color and gofun, Pacific Asia Museum Collection, Gift of Gail Melhado, 2003.43.1
- Jane Goodall, My Life with Chimpanzees. Scholastic Press, 1996.
- Sketching materials: paper and pencil

Discussion

Display or project copies of *Praying Mantis, Three Cranes and Bamboo*, and other works from *Nature of the Beast*. Point out the realism of the works and the artists' close attention to the animals' actions and gestures. Note, for example, that the cranes appear to be engaging in a threat or a courtship display. The praying mantis has the large insect's alert attitude and is shown in its habitat: a wisteria tendril. Ask students to view other images from *Nature of the Beast*. Are there any stylized portraits? If so, which ones? Why do you think that they are based on direct observations of nature?

After reading from Jane Goodall's *My Life with Chimpanzees*, discuss her field methods. She and her associates have spent years in the field observing these primates. Discuss Edo artist artist Mori Sosen, who had such a deep understanding of Japanese monkeys that he was thought to be a monkey in disguise. How are her insights similar? Different?

Activities

Like artists, scientists must look closely and objectively at nature if they are to understand it. As part of a larger study of the environment students live in, arrange field study as a class or independently in an area where animals and plants might be found: a playground, a local nature preserve, a vacant lot, a pond, trees in a parking lot, a zoo, a farm, and so on.

Scientists conducting a field study will often establish a transect—a narrow strip of terrain to observe within a specified amount of time. Students may choose their transect, noting on a worksheet:

- weather conditions
- coordinates (use a GPS system if available)
- biome (desert? chaparral? northeast temperate forest? swamp?)
- time and duration of observation
- plants present
- animals present (don't forget insects and soil organisms)
- animal behaviors observed (sleeping, eating, predation, death, birth, mating and so on)

Ask students to sketch the plants and animals they observe. As part of their worksheet, ask students to pick one behavior they would like to illustrate. Do they recognize any of these actions from their study of the images in *Nature of the Beast?*

In the classroom, students will create an artwork using their field study subject. Attention to observation is key here. Include other environmental factors in the artwork: plants, the presence or absence of water. Artworks can include haiku about the animal and its actions.

Extension

Explore the work of contemporary artists who are inspired by nature and the environment:

Andy Goldsworthy

Maya Lin

Robert Irwin

Patricia Johanson

Sandy Skoglund

Robert Smithson

James Turrell

Mierle Ukeles

Standards

California State Science Standards:

Grade Six: Investigation and Experimentation

7. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept, students should develop their own questions and perform investigations. Students will:

Develop a hypothesis.

Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

California Visual and Performing Arts Standards, Grade 6:

2.0 CREATIVE EXPRESSION

Creating, Performing, and Participating in the Visual Arts

Students apply artistic processes and skills, using a variety of media to communicate meaning and intent in original works of art.

Skills, Processes, Materials, and Tools

2.1 Use various observational drawing skills to depict a variety of subject matter.



Praying Mantis
By Shibata Zeshin (1807-1891)
Japan, 19th C.
Woodblock print of ink on paper
Pacific Asia Museum Collection
Gift of Dr. George W. Housner, 2001.21.38



Three Cranes and Bamboo
Japan, early Edo period; Genroku reign; c. 1700
Two-panel screen of ink, color and gofun on gold leafing
Pacific Asia Museum Collection
Gift of Gail Melhado, 2003.43.1