

SKELETONS: Museum of Osteology

Locomotion University

Teacher Resource

Grade Levels: University

Program Overview

Locomotion University familiarizes students with seven modes of animal locomotion, and their subtypes. Through hands-on observation of various skeletal specimens, students then work in teams to identify and define the types of movement, and present their findings to the class.

Learning Objectives:

- Participants will successfully identify modes of location by examining skeletal adaptations in a number of different species of animals.
- Participants will successfully work in a team environment and communicate their observations to their fellow classmates.

Background

Adaptation is a process of nature in which an organism becomes better suited to its habitat. Adaptations can be found throughout nature. In vertebrate species, these adaptations often affect the skeletal system. One obvious example of skeletal adaptation can be found in locomotion.

Locomotion is not the same as movement. Does anyone know how they differ? Take answers. All animals move, but not all animals locomote. Locomotion is defined as movement that results in progression from one place to another. Animals that spend all or nearly all their entire adult life in one place are called sessile. Animals that move around are called motile.

Locomotion has evolved to enhance the animal's success at finding food, reproducing, escaping predators, or escaping unsuitable habitats. Typically, the animal uses the same mode of locomotion for all these functions, but there are exceptions.

Vocabulary

Adaptation: a process of nature in which an animal becomes better suited to its habitat

Aerial Locomotion: is the act of flying

Arboreal Locomotion: applies to animals that live in and move through trees

Aquatic Locomotion: describes an animal's movement in the water

Carnivore: animals that primarily eat meat

Cursorial Locomotion: most land animals move about using this type of locomotion

Fossorial Locomotion: movement of animals that dig and live underground

Habitat: soil, water, climate, plants and animals of a particular ecosystem

Herbivore: animals that primarily eat plants

Saltatorial Locomotion: movement of animals that hop or jump

Predator: animals that attack and eat other animals

Prey: animals that are attacked and eaten by other animals

Vertebrate: animals with backbones

Lateral Undulation: the most common side-to-side motion exhibited by snakes

Reference: visit the SKELETONS: Museum of Osteology Education web page at:
<http://skeletonmuseum.com/education>

Recommended Reading:

Gilbert, B. Miles

1990 *Mammalian Osteology*. Missouri Archaeological Society, Columbia, MO.

Roest, Aryan I.

1991 *A Key Guide to Mammal Skulls and Lower Jaws*. Mad River Press, Inc., Eureka, CA.

Searfoss, Glen

1995 *Skulls and Bones*. Stackpole Books, Mechanicsburg, PA.

While at SKELETONS:

- Have students visit the exhibits to identify the locomotive behavior of selected specimens.
- Visit the Locomotion Exhibit and compare the skeletal structure of the Cheetah as it is running to the 3D Cheetah model.
- Visit the Primate Exhibit to see how some primates utilize arboreal locomotion.
- Visit the Reptile Exhibit and discuss how the 20-foot Burmese Python is able to move from place to place without any limb bones.