AMI Day 2 Answer the Questions #'s 1-6

Intruder Alert

A WebQuest for Invasive Species Run Wild

Introduction

An invasive species is any non-native species that causes harm to the environment, the economy, or human health. Invasive species are of such concern that President Clinton established the National Invasive Species Council (NISC) in 1999. In addition to designing guidelines for early detection, response to, and management of invasive species, NISC partners with community agencies and industries to educate the public about invasive species. In this WebQuest, you'll investigate an invasive species and write a letter to the editor from a biologist's perspective.

Task

NISC works in part to educate the public about the risks of introducing non-native species into the environment. Your task is to research an invasive species and write a letter to the editor of your local newspaper from a biologist's point of view.

Process

Use the resources listed in the Resources section to begin your research. The websites listed are good starting points, but further internet research will be necessary. Record your answers to the following questions. You'll use them to write your letter to the editor.

1. What are some examples of invasive species?
2. How are invasive species introduced into ecosystems?
3. What problems do invasive species cause?
4. Do all non-native species cause environmental problems?
5. How are problems caused by invasive species corrected?
6. What can be done to prevent problems due to invasive species?

Letter

Once you have finished your internet research, write a letter to the editor about the invasive species you studied. Due to space constraints, guidelines for letters to the editor usually establish limits on length. Your letter should be 300 words or fewer. The letter should be written from a biologist's perspective and its aim will be to educate the public. Keep in mind that people are more receptive to instruction when it is given as reasoned encouragement than when it is harsh criticism.

Resources

National Invasive Species Council
National Invasive Species Information Center
Letters to the Editor

AM I Day 3 Answer the Questions #'s 1-4

Are We Related?

A WebQuest for Career: Comparative Anatomist, Necropsies Help Scientists Study Whales

Introduction

Studies in comparative anatomy equip scientists to perform whale and dolphin necropsies and determine the cause of death of these marine mammals. Such studies also enable scientists to examine skeletons in order to understand adaptations over time and evolutionary relationships between various species. In this WebQuest, you will research different species, identify and compare similar body structures, and create a model of homologous structures.

Task

Your task in this WebQuest is to research homologous structures and make a model showing one such structure in two different species.

Process

Use the resources listed in the Resources section to begin your research. The Web sites listed are good starting points, but further Internet research will be necessary. Record your answers to the following questions.

1. What is comparative anatomy?
2. What are homologous structures?
3. What are analogous structures?
4. What are some other applications of comparative anatomy studies?

Model

Once you have completed your research, decide which homologous structure you will model. Consider the details you will represent and the scale you'll use. Using air-dry or polymer clay, create a model of the homologous structure as it's found in at least two different organisms. Before beginning, prepare a display board or shallow cardboard box by covering with clean paper. Make labels for the models and include them in the display.

Resources

Comparative Anatomy and Skeletons
American Museum of Natural History

AMI Day 4 Answer the Questions #'s 1-5

Who's Calling?

A WebQuest for Eavesdropping on Elephants

Introduction

Scientists study all modes of animal communication, from their displays of various body parts to the deposition of characteristic scents. For humans, communication is primarily language based, using sound waves generated by the voice as speech. As it turns out, many animals also communicate using sound waves at frequencies that people can't hear. Elephants have been found to use infrasonic sound waves to communicate even over distances of several kilometers. In this WebQuest, you'll learn about other animals that communicate at frequencies outside the range of human hearing and create a graph comparing these frequencies.

Task

Your task in this WebQuest is to research animal communication and create a graph that compares the frequencies of different animals' sounds.

Process

Use the resources listed in the Resources section to begin your research. The Web sites listed are good starting points, but further Internet research will be necessary. Record your answers to the following questions.

1. What are the units of measurement for sound waves?
2. What is the frequency range of normal human hearing?
3. What is infrasonic sound?
4. What is ultrasonic sound?
5. What are some animals that communicate at infrasonic and ultrasonic frequencies?

Graph

After you have completed your research, create a bar graph that compares the frequencies of sounds used by different species for communication. The graph may be oriented either vertically or horizontally. Show the range of frequencies utilized by each animal, including the frequency range for normal human hearing. Include data for at least five species in addition to *Homo sapiens* and list both the scientific and common name for each.

Resources

The Animal Communication Project
Animal Sound Recordings
Intensity of Common Sounds
The Nature of Sound