Year A: Cycle 4
Systems

Study Guide
Natural World
February 13- March 24

Overview

When we think of the Animal Kingdom, we usually imagine creatures that are close to us in size and other characteristics (warm-blooded, land-dwelling, hairy), such as lions, dogs, elephants and caribou. When we look at the diversity of all animal life on the earth, however, we see that 96 out of every 100 species (and there are *millions* of species!) are invertebrates (animals with no backbones), and that most of *those* species are insects. Our Kingdom, *Animalia*, includes sponges, jellyfish, worms, insects, starfish, and mollusks, as well as fish, frogs, snakes, birds and mammals (among others). What qualities define animals? What are those characteristics that make us more closely related to a sea-sponge than to a pine tree?

_____1. Read the overview with your color group and mark it up. Make a Quizlet for the following vocabulary words: ectotherm, endotherm, herbivore, invertebrate, vertebrate, adaptation, omnivore, carnivore, and species. **Quizlet is due: 2/17**

_____2. Personal Project: Choose one invertebrate or vertebrate. Your goal is to design a perfect environment for them. Research this animal to find out its habitat, what it eats, and its size. Collect or draw pictures of things that will be necessary to have in the environment. Create a diorama that shows this animal's perfect environment. For each item on the display write a caption that explains what importance it has in the environment. Make sure to include a picture of your animal. **Due: 3/22**

_____3. Socratic Discussion: *Evolution of Life* from Science for All Americans. **2/21**

_____4. **Advanced Work**: Research the phyla Ctenophora, Nemertea, and Rotifera. Add their information to the graphic organizer. Determine the gift (characteristic that is unique) from each of the phyla and mark them in red.

Guiding Question 1: ***What are the characteristics of invertebrates' systems?***

_____5. Participate in the lesson on the Gifts of the Phylum. Record the information on the graphic organizer. **2/13**

_____6. In your small group, complete one activity to answer the guiding question. All readings are from Science Explorer: Animals. **Due: 2/23**

a. Read Chapter 1, Section 3: Sponges and Cnidarians, pp. 15-23 and Chapter 2, Section 5: Echinoderms, pp. 70-73 and complete the "A Snail's Pace" activity on pp.46. Complete the sponges and cnidarians concept map.

b. Read Chapter 2, Section 1: Mollusks, pp. 40-45 and Chapter 1, Section 4: Worms, pp. 26-32 and complete the "Earthworm Responses" activity on pp 33. Complete the worm and mollusk concept maps.
c. Read Chapter 2, Section 2: Arthropods, pp. 47-54 and complete "The Arthropod Story" online activity pp.49. Complete the arthropod concept map.
d. Read Chapter 2, Section 3: Insects, pp. 55-59 and Section 4: Insect Ecology, pp. 62-69 and complete the "What's Living in the Soil?" activity on pp. 60.

_____7. Reflect on the answer to this question. Update your graphic organizer with the group presentation information.

Guiding Question 2: ***What are the characteristics of vertebrates' systems?***

_____8. Participate in the lesson on the Gifts of the Classes. Record the information in the graphic organizer. **2/13**

_____9. In your small group, complete one activity to answer the guiding question. . All readings are from Science Explorer: Animals. **Due: 2/23**

a. Read Chapter 3, Section 2: Fishes, pp. 86-92 and complete the "Home Sweet Home" activity pp.93.
b. Read Chapter 3, Section 3: Amphibians, pp. 94-98 and Section 4: Reptiles, pp. 99-106 and complete the "Soaking Up Those Rays" activity pp. 84.
c. Read Chapter 3, Section 1:Birds and Section 2: The Physics of Bird Flight, pp. 118-131 and complete the "Looking at an Owl's Leftovers" activity on pp. 126.
d. Read Chapter 3, Section 3: Mammals, pp. 132-146 and complete the "Keeping Warm" activity on pp. 141.

_____10. Reflect on the answer to this question. Update your graphic organizer with the group presentation information and then complete the following concept maps: Cold–blooded vertebrates and Warm-blooded vertebrates.

_____11. Take the vocabulary test. You must show mastery to be complete. **2/23**

_____12. Complete the self and group assessment individually and then discuss it with your small group.

_____13. Natural World Project **3/23**