

SCIENCE OLYMPIAD ECOLOGY TEST
NORTH SHORE COUNTRY DAY: FEBRUARY 6, 2010

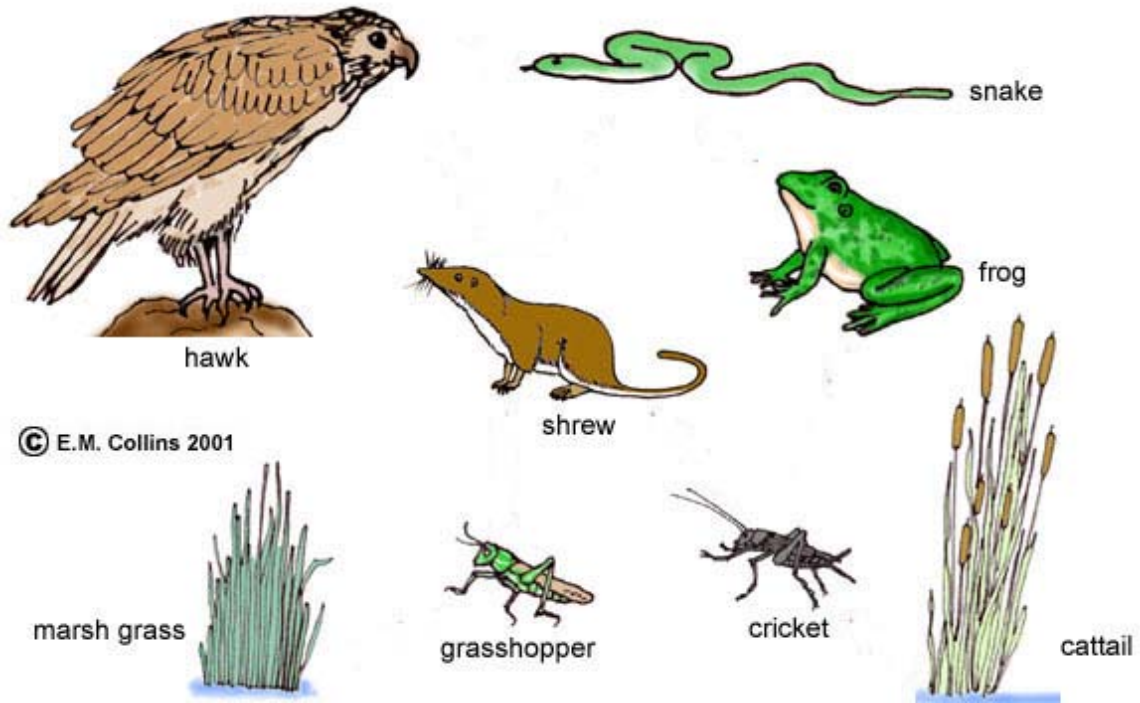
Match the terms to the phrases/definitions that best describe them.
Write the matching letter in the blanks after the definitions (7 possible points):

1. The study of the interrelationships between plants and animals and their environment. _____
2. All of the organisms in a natural community or biome plus all of the associated environmental factors with which they interact.

3. A large geographical region whose climate produces a characteristic climax association of plants and animals. _____
4. A sequence or chain of organisms existing in a natural community in which each link of the chain feeds on the one below and is eaten by the one above. _____
5. A level of nutrition or "link" in a food chain. _____
6. Autotrophic photosynthetic plants that occupy the first trophic level of a food chain. _____
7. An animal that kills and feeds upon another animal. _____

- A. Predator
- B. Food Chain
- C. Ecosystem
- D. Trophic Level
- E. Biome
- F. Producers
- G. Ecology

8. In the following diagram, you need to add arrows that would make the diagram a viable food web. Remember, that arrows ought to point from producers to consumers and then up the trophic levels. (10 possible points)



9. In the space below, draw a food pyramid of at least four levels. The first level should have an initial energy store of 100,000 kCal and you must label the energy (in kCal) at each new level (8 points):

10. In a few sentences, explain the difference between a native species and a naturalized species. (5 points)

11. What biome is indicated by the shaded regions on the map below? (5 points)



12. Which of the following is the primary plant in the taiga? (2.5 points)

- A. Deciduous trees
- B. Ferns
- C. Coniferous trees
- D. Grasses

13. Which of the following is an animal commonly found in the North American taiga? (2.5 points)

- A. River Otter
- B. Eastern Cottontail
- C. Meadow Vole
- D. Gopher Snake

14. How many inches of rain, on average, do grasslands receive each year? (2.5 points)

- A. 25-35 inches
- B. 0-10 inches
- C. 50-75 inches
- D. 10-20 inches

15. There are generally considered to be two types of prairies: tall-grass prairies and short-grass prairies. Besides the obvious, provide one fact that distinguishes these two ecosystems from each other. (5 points)

16. A badger is an animal common to North American Grasslands. Which of these facts about badgers is not true? (2.5 points)

- A. Badgers are nocturnal
- B. Badgers live in Clans
- C. Badgers are carnivores
- D. Badgers live in complex, long-lasting tunnel networks.

17. Approximately what percentage of the world's forests are found in the taiga? (2.5 points)

- A. 10%
- B. 15%
- C. 25%
- D. 40%

18. Describe two separate adaptations that animals have made to life in the taiga, specifically in dealing with the severely cold conditions. (5 points)

19. Explain the link between fossil fuels and the deforestation of the taiga. (5 points)

20. Explain the difference within ecology between a population and a community, and then provide an example of each of these in a grassland. (10 points)