

# Science Olympiad - 2017

## Ecology

Division B - Cathy Kelly

### North American Biomes & Adaptations!



#### What will it be?

- Test with questions. Questions can be “advanced” multiple choice, matching, True or False, all answered on a provided SCANTRON. SCANTRON sheets will be scored and ranked. High score is better. Ties are broken.
- Test challenges can be graphs, matching, diagrams, pictures, light math or longer reading.
- The use of equal-time rotating stations may be used as well.
- 50 minutes total time (test will be timed at about 40 minutes)
- Three sections of equal point value to the test.
- There will be designated tie-breaker questions within the test. Ties are broken within ties.

#### What do we do?

- Students can work in teams on test per Olympiad rules, but remember anything overheard by another team is fair game. Scrap paper will be provided as well as all other supplies.
- Teams may bring ONE 8.5x11 sheet of paper filled in with helpful notes front and back PER TEAM (not per person). These sheets may be confiscated at the end of the test.
- No calculators or other supplies will be needed. All will be provided.
- Please consult the official current Science Olympiad rules for other more general event rules.
- Have fun! 😊

#### What do we to practice and learn?

1. Ecology! Food webs, trophic levels, biogeochemical cycles (nutrients), biodiversity, communities, population science including growth, capacity, migration, evolution and adaptation! Applies these concepts to the following categories.
2. Ecology of Terrestrial Biomes! Tundra, Taiga, Deciduous Forests (not Desert or Grasslands)
3. Human Impact! Invasive Species, climate change, acid rain, pollution, energy sources, conservation, reclamation and restoration issues.
4. Sample Questions Handout
5. Resources from Science Olympiad: Ecology CD (ECCD) and BioEarth CD (BECD)
6. College Textbook as a reference: “Visualizing Environmental Science” by Berg, Hager and Hassenzahl from Wiley Publishing - (check out the graphs, images, practice questions, glossary, etc), available on reserve at MCC South Campus Media Center.



#### Who is your event supervisor?

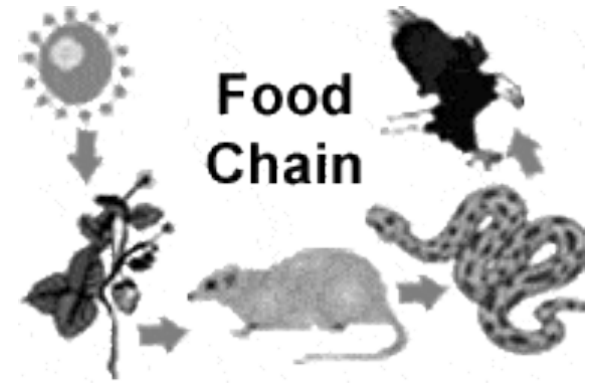
Cathy Kelly – Professor of Biology and Environmental Science at Macomb Community College. QUESTIONS?

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### Sample Questions:

(These questions are provided for thought and practice, real test questions will most likely NOT be essay or drawing but some level of multiple choices that will be recorded on a SCANTRON)

1. Create a food web. Label levels.
2. Label on this diagram, producer, consumer, predator, prey, etc.
3. Compare a tundra with a taiga.
4. Name some invasive species (terrestrial)
5. List some adaptations of a plant to its biome.
6. Draw a graph that represents exponential growth, overshoot and label a carrying capacity.
7. What is predation?
  - a. Two species trying to use the same resource
  - b. One organism eating another organism
  - c. Organisms living together in the same area
  - d. One organism benefits and the other is neither harmed nor helped
8. Which of the following is the best definition of a biome?
  - a. A large land area in the world with a certain climate, soil, animals, plants, microorganisms.
  - b. A dome with a self-contained living environment
  - c. A type of forest
9. Which of the following BEST describes an ecosystem?
  - a. Populations in a community
  - b. All species that breed together and have babies
  - c. Only the nonliving components of a living environment area
  - d. All the living interactions plus the nonliving component in an area
10. What is an organism's role, or lifestyle, within the structure of an ecosystem called?
  - a. Habitat
  - b. Food Chain level
  - c. Parasitism
  - d. Niche
11. Which set of three parameters has the MOST effect on biome distributions?
  - a. Latitude on the earth, longitude on the earth and precipitation
  - b. Longitude only, precipitation and temperature
  - c. Latitude only, precipitation, temperature.
  - d. Temperature and precipitation