ECOLOGY B

See General Rules, Eye Protection & other Policies on www.soinc.org as they apply to every event.

1. **DESCRIPTION:** Students will answer questions involving content knowledge and process skills in the area of ecology and adaptations in featured North American biomes.

   A TEAM OF UP TO: 2 **CALCULATOR:** Class II **APPROXIMATE TIME:** 50 minutes

2. **EVENT PARAMETERS:** Each team may bring only one 8.5" x 11" sheet of paper, which may be in a sheet protector sealed by tape or laminated, that may contain information on both sides in any form from any source without annotations or labels affixed along with two stand-alone non-programmable, non-graphing calculators (Class II).

3. **THE COMPETITION:**

   This event will be composed of three parts of approximately equal point value. The event will emphasize these process skills as they apply to ecology: defining variables; analyzing data from graphs and tables; presenting data in graphs and tables; forming hypotheses; making calculations and predictions. If stations are used, students must spend the same amount of time at each station.

   a. Part 1: Review of the General Principles of Ecology
      i. General Principles of Ecology - food webs and trophic pyramids, nutrient cycling, community interactions, population dynamics (including density dependent/independent limiting factors, carrying capacity, doubling time, exponential/logistic growth and how to calculate population growth), extinction, selection and migration. At the regional and state level, the general ecological principles should focus on local and regional ecology.
   b. Part 2: Terrestrial Ecosystems
      i. Ecology of Deserts and Grasslands
      ii. Understand basic concepts of biodiversity (e.g., importance, different types)
   c. Part 3: Human Impact on Ecosystems
      i. Topics such as climate change, invasive species, acid deposition (including acid rain), erosion, and chemical contamination (pollution)
      ii. The pros and cons of using alternative energy and its effect on the environment
      iii. Understand the goals of conservation biology and how they can be **reached**
      iv. Reclamation of disturbed areas versus reintroduction of species

4. **SCORING:** Questions will be assigned point values. Teams will be ranked from highest to lowest score. Ties will be broken by pre-determined tiebreaker questions.

Recommended Resources: The Science Olympiad Store (store.soinc.org) carries a variety of resources to purchase; other resources are on the Event Pages at soinc.org.

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