

1. DESCRIPTION:

Students will demonstrate an understanding of general ecological principles, the history and consequences of human impact on our environment, solutions to reversing trends and sustainability concepts.

A TEAM OF UP TO: 2

IMPOUND: No

APPROXIMATE TIME: 50 minutes

2. EVENT PARAMETERS:

Each team may bring one 8.5"x11" sheet of paper that may contain information on both sides in any form from any source. Each participant may bring any kind of non-graphing calculator, but no other resources.

3. THE COMPETITION:

This event will be composed of three sections of approximately equal point value. This may include analysis, interpretation or use of charts, graphs and sample data. Note: Green Generation is designed for a two-year rotation - the first year (2015) covered aquatic issues, air quality issues and climate change while the second year (2016) will cover terrestrial issues and population growth issues.

- 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, species diversity and indicator species (2016)
 - ii. Overview of Terrestrial Environments - forests, grasslands, deserts, tundra (2016)
 - b. **Part 2:** Problems resulting from human impacts on the quality of our environment
 - i. Terrestrial Environment Issues - Desertification, Deforestation, Soil pollution, Waste Disposal, Mining (2016)
 - ii. Population Growth Issues - Habitat Destruction, Farming Practices, Fertilizers & Pesticides (2016)
 - c. **Part 3:** Solutions to reversing/reducing human impacts that harm our environment
 - i. Legislation and Economic Opportunity for Solving Problems (Div. C) (2016)
 - ii. Sustainability Strategies - Environmental Stewardship of Terrestrial Ecosystems (2016)
 - iii. Bioremediation Strategies (2016)
 - iv. Nonrenewable, Renewable, and Alternate Energy Sources (2016)
 - v. Waste Management (2016)
4. **SCORING:**

Questions will be assigned point values. Students will be ranked from highest to lowest score. High score wins. Ties will be broken by pre-determined tiebreaker questions.

Recommended Resources: All reference and training resources including the **Green Generation CD (GGCD)** and the introductory **Bio/Earth CD (BECD)** are available on the Official Science Olympiad Store or Website at <http://www.soinc.org> and see the American Chemical Society (ACS) Climate Science Toolkit at <http://www.acs.org/content/acs/en/climatescience.html>

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