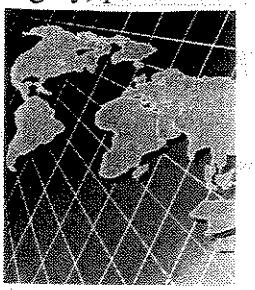
REMOTE SENSING

DESCRIPTION:

Participants will attempt to answer questions or solve one or more problems by comparing and interpreting a combination of aerial photographs, topographic maps, satellite imagery, planimetric maps, radar imagery and/or public records.



EVENT PARAMETERS: Students are encouraged to bring protractors, calculators, rulers, notes, reference materials and other devices. Reference materials must fit in a 2" binder.

A TEAM OF UP TO: 2 **APPROXIMATE TIME:** 50 Minutes

THE COMPETITION:

Using a combination of remote sensing products, participants will attempt to identify geologic features relating to landforms associated with coastal waterways along oceans (including such features as **glaciers**, beaches, marshes and sandbars), explain physical and human phenomena, and analyze the impact of human and natural activities on the physical environment. Students may be asked to relate a local area or regional physical environment to its cultural landscape. All maps, images, and photographs required to complete the activity **will** be provided. Students are not to mark on the maps, photographs, or images.

Representative skills:

- Interpretation of map symbols
- Terrain analysis
- Area measurement of physical and cultural features
- Determine relative and exact location of features
- Use of coordinate systems
- Ability to interpret graphic images

Representative issues:

- Vegetation cover/deforestation
- Urbanization/cultural development
- Pollution (land, water, air)
- Agriculture/ranching
- Natural and human disasters
- Global warming
- **Glacial recession**

SAMPLE TASK:

A local city council is proposing construction of a new dam to divert irrigation water to developing agricultural lands. The site for the dam has been selected. The elevation of the spillway will be 348 feet. 1) Determine the area, in square miles, that will be inundated with water if this proposal is accepted. 2) How many existing homes will be affected? 3) How many acres of forest must be cut?

SCORING:

The number of correct responses determines places in the competition. Pre-identified questions will be used as tiebreakers.

Suggested Resources: 1) Science Olympiad Teaching Guide for Remote Sensing and CD; 2) Science Olympiad 2004 and 2005 CD presentations-see www.soinc.org.

National Science Education Standards: Science as Inquiry, Content Standard A: Develop descriptions, explanations, predictions and models using evidence; Science in personal and social perspectives, Content Standard F: Natural resources, environmental quality, natural and human induced disasters, the role of science and technology in local, national and global challenges; Earth and Space Science, Content Standard D: Energy in the Earth system, geochemical cycles (Grades 9-12)