

## CAN YOU DIG IT?-DIVISION B-TRIAL EVENT 5-23-10

1. **DESCRIPTION:** Students will use process skills and their knowledge of soil composition, stratification and chemistry to complete a simulated archaeological dig and answer questions related to observed data.

**A TEAM OF UP TO: 2**

**APPROXIMATE TIME: 50 minutes**

2. **EVENT PARAMETERS:** Each team may bring one 8.5" x 11" two-sided sheet of paper containing any information from any source. Each participant may bring any kind of (non-graphing) calculator, but no other resources.

3. **THE COMPETITION:** Participants will be presented with a series of tasks, many requiring the use of process skills (i.e., observing, classifying, measuring, inferring, predicting, communicating, and using number relationships). The event will be organized as follows:

- a. Students will complete a simulated archaeological dig using Event Supervisor provided materials.
- b. Measure and record the location of buried objects on a grid.
- c. Make scientific and archaeological inferences about buried objects and their location on a grid.

4. **SAMPLE ACTIVITIES:**

- a. **Determine the quadrant and specific location of a buried artifact**
- b. **Given an annual deposition of .5cm of topsoil, determine the age of a buried artifact.**
- c. **Compare fossil remains found in a location with soil ph levels and explain the role of climate change in the extinction of a species.**
- d. **Identify the mineral composition of a soil sample.**
- e. **Describe the human activities which may have occurred in a location using evidence acquired from the archaeological dig.**
- f. **Infer the characteristics of human societies in a location using evidence acquired from the archaeological dig.**
- g. **Differentiate between depositional and erosional landforms in a location.**
- h. **Use a geologic map to determine the age of soil strata in a location.**
- i. **Use a topographic map to determine the geographic coordinates of a location.**
- j. **Explain the relationship of artifacts to one another in a location using evidence acquired from the archaeological dig.**

5. **SCORING:** Teams with the highest number of correct answers will be the winners. Selected task will be used as a tiebreaker.

**RESOURCES:** *The Amazing Dirt Book*, Bourgeois 1990  
Science Olympiad Website  
Science Olympiad Biology-Earth Science Resource CD

**NATIONAL SCIENCE EDUCATION STANDARDS** Earth Science; Structure of the Earth System, earth history; Inquiry: Use appropriate tools and techniques to gather, analyze and interpret data, develop descriptions, explanations, predictions and models using evidence, thinking critically and logically to make relationships between evidence and explanation.