

# WATER QUALITY (FRESHWATER) –TRAINING HANDOUT

## Overview & General Ecology

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**DISCLAIMER** - This presentation was prepared using draft rules. There may be some changes in the final copy of the rules. The rules which will be in your Coaches Manual and Student Manuals will be the official rules.

- **BE SURE TO CHECK THE 2019 EVENT RULES** for EVENT PARAMETERS.

### TRAINING MATERIALS:

- **Training Power Point** presents an overview of material in the training handout
- **4 Training Handouts** ó an overview and a handout for each section of the competition.
- **3 Practice Activities** have sample problems for each area of the competition with answer keys
- **2 Sample Tournament** has sample problems with key
- **Event Supervisor Guide** has event preparation tips, setup needs and scoring tips
- **Internet Resource & Training Materials** are available on the Science Olympiad website at [www.soinc.org](http://www.soinc.org) under Event Information.
- **A Biology-Earth Science CD, a Water Quality CD and the Division B and Division C Test Packets** are available from SO store at [www.soinc.org](http://www.soinc.org)

### THE COMPETITION:

#### Part 1: Water Quality Information – Freshwater

- freshwater ecology
- aquatic food chains and food webs
- population dynamics
- community interactions
- nutrient cycling
- potable water treatment
- waste water treatment

**Part 2: Macro flora and Fauna** – Identification and indicators of water quality will include the identification (common name only) of immature and adult macroinvertebrates & aquatic nuisance organisms, their importance as indicators of water & wetland quality. FOR Division C ONLY students will also be expected to know the general ecology, life cycles, and feeding habits of all listed organisms

#### Part 3: Water Monitoring and Analysis

##### *Data Interpretation and Procedural analysis*

- salinity, temperature, pH, turbidity, dissolved oxygen , biochemical oxygen demand, phosphates,
- nitrates, total solids, fecal coliform

##### ***Build and calibrate a salinometer (Hydrometer) prior to the competition and use in competition***

- Test salt water
- 1-10%