Science Olympiad

Water Quality Testing
B and C Divisions

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Breakdown

- 50 minutes long
- Up to 2 people on a team
- A written test containing several stations
- 4 main Sections:
  - Marine and Estuary Ecology
  - Coral Reef Macroflora and Fauna Identification
  - Water Monitoring and Analysis
  - Salinometer Testing

What to Bring

- ❏ 8.5” x 11” piece of paper
  - ❏ Any information can be listed
  - ❏ Can write on both sides
- ❏ Eye Protection (Category C)
- ❏ Two Non-graphing calculators
- ❏ One Salinometer/Hydrometer

Question Types

- ❏ Multiple Choice (Can have more than 1 answer)
- ❏ Short Answer
- ❏ Matching
- ❏ Fill in the blank
- ❏ True/False

Marine and Estuary Ecology

- ❏ Aquatic Ecology
- ❏ Water Cycle
- ❏ Nutrient Cycling
- ❏ Aquatic Chemistry
- ❏ Portable Water Treatment
- ❏ Watershed Resource Management
- ❏ Wastewater Treatment
- ❏ Aquatic Food Webs
- ❏ Community Interactions
- ❏ Population Dynamics
- ❏ Sedimentation Pollution
- ❏ Harmful Species
- ❏ **Recently Killed Coral**

Division C only

- Life History Strategies
  - Survival Curves
  - Life Tables
  - Age
  - Structures
  - Succession
  - R and k strategies

Macroflora and Fauna Identification

- General Knowledge of Coral Reefs
- Harmful Effects to Coral Reefs
- Identify Coral Reef Organisms
- Identify Coral Reef Health from indicators

Macroflora and Fauna Identification Continued

Students should be able to name, identify, and know the importance of the following:

- ❏ Banded coral shrimp
- ❏ Butterfly Fish
- ❏ Crown of thorns Starfish
- ❏ Fleshy Algae
- ❏ Grouper
- ❏ Hard Coral
- ❏ Lobster
- ❏ Long-spined black sea urchins
- ❏ Moray Eel
- ❏ Parrotfish
- ❏ Pencil Urchin
- ❏ Snapper
- ❏ Sponge
- ❏ Sweetlips
- ❏ Triton
- ❏ Barramundi Cod

Macroflora and Fauna Identification Continued

Students should be able to name, identify, and know the importance of the following:

- ❏ Bumphead parrotfish
- ❏ Giant Clams
- ❏ Humphead wrasse
- ❏ Sea Cucumber
- ❏ Flamingo Tongue Snail
- ❏ Gorgonia
- ❏ Nassau Grouper

Division B and C this year

- For each species, need to know:
  - General Ecology
  - Life Cycles
  - Feeding Habits

Water Monitoring and Analysis

- ❏ Interpret Test Procedure Data
- ❏ Reason for measuring Salinity
- ❏ pH
- ❏ Phosphates
- ❏ Turbidity
- ❏ Dissolved Oxygen
- ❏ **Aragonite Saturation**
- ❏ Temperature
- ❏ Nitrates
- ❏ Fecal Coliform
- ❏ Total solids
- ❏ Biochemical Oxygen Demand

Salinometer Testing

- Salinity Test will one section
- It will be between 1-10% salt
- The Device must fit in a 400-600mL Beaker with at least 400mL of salt water
- Calculate to 0.1%
- Full points if it within 0.5% error

Difference Between B and C

- Longer
- More short answer questions
- Easy Questions are replaced with highschool specific topics
- More Graphs to Analyze

Scoring

- ❏ Tie Breaker Questions will be indicated
- ❏ ~1 point per question
- ❏ ~90 Questions
- ❏ Sections 1 - 3 are 30%
- ❏ 5% for bringing a Salinometer
- ❏ 5% for the correct salinity

Study Materials

- Science Olympiad Website has a free practice test
- The website also contains a list of online resources and references

Reminders

- If a student leaves an event early, they cannot return to the event
- Cell phones are prohibited; if a student is caught checking/using a phone they are disqualified
- Encourage students not to give up or be disheartened by one section, there is a spirit awards

Questions?