

OHIO CAREER DEVELOPMENT EVENTS  
AQUARIUM MANAGEMENT

Effective August 1, 2006

Purpose

To provide students with the opportunity to demonstrate aquarium knowledge and skills.

Date

State: Determined by the Agriculture Education Service

Location

State: Determined by the Agriculture Education Service

CDE Rules

1. Each school may enter an unlimited number of dues paid FFA members as participants, the top 4 scores will be considered the "team" and the top 3 scores will be the team score of record.

Each contestant will have two hours to complete the total event, consisting of a written test, an identification test, and a skills practicum.

Written Test (75 points)

1. The written test will be 75 multiple choice, matching, and/or true/false questions worth one point each.

2. The test will cover all aspects of aquarium management listed below, however, information for test questions will be limited to those books, chapters, and/or pages listed in the reference section. Included will be the weighted amounts of each subject area.

Identification (50 points)

1. Fifty slides, live specimens, or pictures will be presented to contestants who will identify them on a multiple choice type test. Each breed or item to be identified will be worth one point each. Emphasis will be placed on obtaining live specimens.

2. Slides, live specimens, or pictures to be identified will be broken down as follows:

Freshwater/brackish water fish 25

Marine fish/invertebrates 7

Aquarium equipment 7

Aquarium plants 5

Fish diseases 3

Fish foods 3

50 possible points

3. Freshwater/brackish water fish (25 points)

Angelfish  
Arowana  
Black Angel  
Black Lace Angel  
Black Molly  
Black Moor  
Black Neon Tetra  
Black Shark  
Black Tetra  
Bleeding Heart Tetra  
Blind Cave Fish  
Bloodfin  
Blue (three spot) Gourami  
Blue Ram  
Blushing Angel  
Bronze Corydoras  
Bubble-Eye Goldfish  
Butterflyfish  
Cardinal Tetra  
Cherry Barb  
Chinese Algae Eater  
Clown Knife  
Clown Loach  
Common (comet) (feeder) Goldfish  
Common (feeder) Guppy  
Convict  
Discus  
Dwarf Gourami  
Elephant-Nose  
Fancytail Guppy  
Firemouth  
Ghost Knife Fish  
Giant Danio  
Giant Gourami  
Glass Catfish.  
Glowlight Tetra  
Gold Angel  
Green Swordtail  
Head and Tail light Tetra  
Iridescent Shark  
Jack Dempsey  
Jewel Fish  
Kissing Gourami  
Koi  
Kuhli (Coolie) Loach  
Leopard Corydoras  
Longfinned Danio  
Lyretailed Molly  
Marble Angel  
Marble Hatchet Fish  
Marble Molly  
Moonlight Gourami

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## Aquarium Management Rules

Neon Tetra  
Opaline Gourami  
Oranda Goldfish  
Oscar  
Paradise Fish  
Pearl Danio  
Pearl Gourami  
Pencilfish - 3 Banded  
Plecostomus  
Puffer  
Rainbow Shark  
Red (Harlequin) Rasbora  
Red Bellied Piranha  
Red-Eyed Tetra  
Red-Tailed Shark  
Rosy Barb  
Sailfin Molly  
Scissortail Rasbora  
Serpae Tetra  
Severum  
Siamese Fighting Fish (Betta)  
Silver Dollar  
Silver Hatchet Fish  
Silver Molly  
Tiger Barb  
Tinfoil Barb  
Tri-Colored (bala) Shark  
Tuxedo Platy  
Upside-Down catfish  
Velvet Swordtail  
Viel Angel  
Wagtail Platy  
Whiptail  
White Cloud Mountain Fish  
Zebra Danio

Other aquatic animals to be included in this section:

Mystery Snail  
Apple Snail  
Ghost Shrimp  
Pond Snail  
Red Ramshorn Snail

4. Marine fish and invertebrates (must know juvenile and adult forms)

Anemone  
Banded Coral Shrimp  
Batstar  
Beau Gregory  
Blue Devil (Blue Damsel)  
Butterfly Fish (general shape)  
Cleaner Wrasse  
Clown Anemone Fish  
Clown Triggerfish  
Common Starfish

Emperor Angel  
French Angel  
Hermit Crab  
Horseshoe Crab  
Lionfish  
Maroon Clown  
Moorish Idol  
Neon Goby  
Parrot Fish (general shape)  
Pencil Urchin  
Percula (Common)  
Pipefish  
Poor Man's Moorish Idol  
Powder Blue Sturgeon  
Puffer Fish  
Queen Angel  
Royal Gramma  
Sea Fan  
Seahorse  
Spiny Lobster  
Three Spot (Domino Damsel)  
Tomato Clown  
White-tail (Three-striped) Damsel  
Yellow Tang (Yellow Sturgeon)

5. Aquarium equipment

Activated Carbon-Loose or Cartridge  
Air Tubing - flexible  
Air Tubing - rigid  
Air Valve  
Airstone - all types  
Algae Scraper-all types  
Alkalinity test kit  
Ammonia test kit  
Automatic Feeder (silicone)  
Betta Barracks  
Bio-balls  
Box Filter  
Breeding Grass  
Breeding Net/Traps  
Brine Shrimp Hatchery  
Brine Shrimp Net  
Chlorine test kit  
Canister Filter  
Diaphragm Air Pump  
Diatomaceous Earth (Diatom) Powder  
Dirt Magnet (sponge)  
Filter  
Dolomite  
Feeding Block (Weekend Feeder)  
Filter Floss  
Fluorescent Bulb  
Full Hood  
Gang Valve  
Glass Canopy  
Gravel Vacuum/ Cleaner

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Heater  
Hydrometer  
Incandescent Bulb  
Live rock  
Net  
Nitrate Test Kit (all types)  
Peat Cartridge  
pH Test Kit (strips/solutions)  
Planting Stick  
Power Head  
Power filter with bio-wheel cartridge  
Protein skimmer  
Seatest Hydrometer  
Siphon Tube for Power Filter  
Siphon Tubing  
Submersible Heater  
Tank Divider  
Thermometer - all types  
Trickle Filter (wet-dry)  
Ultraviolet light  
Undergravel Filter  
Water Hardness Test Kit (strips)  
Worm Feeder  
Zeolite - loose or cartridge

#### 6. Aquarium plants

Amazon Swordplant  
Ambula  
Anacharis  
Banana Plant  
Cabomba  
Corkscrew Vallisneria  
Foxtail  
Hairgrass  
Hornwort  
Hygrophilla  
Jungle Vallisneria  
Ludwigia  
Water Sprite

#### 7. Disease

Bacterial Fin and Tail Rot  
Ichthyophthirius  
Cotton Mouth  
Dropsy  
Fungal Fin and Tail Rot  
Velvet

#### 8. Foods

Blood Worms  
Brine Shrimp  
Brine Shrimp Eggs  
Flake

Freeze-dried  
Glass Worms  
Granules  
Pellets  
Tubifex  
Frozen

#### Practicum (75 points)

1. Four judges are required for this portion of the CDE. Each judge will judge all contestants. (See scorecards). Judges will NOT be able to explain or assist a contestant in any way.

2. All contestants will perform the same selected skills.

3. The 75 points allotted for the practicum will be divided between the 4 judges as follows:

Judge 1 20 points

Judge 2 20 points

Judge 3 20 points

Judge 4 15 points  
75 possible points

4. Animals, products, and/or supplies to be tested will be limited to those listed in the identification portion of these rules.

#### Scoring Guide

##### 1. Individual

Written test 75 points

Identification 50 points

Practicum 75 points

Total Maximum Individual Score 200 points

##### 2. Team

200 points x 4 individuals = 800 points

#### References

The following references will be used to prepare the written portion of the test. Each reference or chapter will be assigned the following proportion of the 75 written questions.

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1. Small Animal Care and Management, Warren, Dean, Delmar, 2002  
Chapter 20- Fish, 24 questions

2. The Everything Tropical Fish book, DeVito, Carlo and Skomal, Gregory, Adams Media Corporation, 2000  
Chapter 1- 10 questions  
Chapter 2- 10 questions  
Chapter 3- 3 questions  
Chapter 5- 5 questions  
Chapter 6- 8 questions  
Chapter 7(marine) - 15 questions

Additional reference material to aid in fish I.D.:

1. Freshwater Fish Identification Slide Set and Script, Collins, Penny, OSU Curriculum Materials Service, The Ohio State University, (614-292-4848)  
2. Aquarium Fish, Mills, Dick, Dorling Kindersley, Inc. 232 Madison Avenue, New York, 10016. 1993.

#### Aquarium Management Practicum Scorecard #1

Name \_\_\_\_\_

School \_\_\_\_\_

Judges will score student on ONE of the following skills for a total of 20 points. All students will be judged on the performance of the SAME skills.

Water Testing: Specific Gravity

1. Identify the correct equipment - hydrometer \_\_\_\_/5  
- sea test
2. Use equipment correctly \_\_\_\_/5
3. Read specific gravity correctly \_\_\_\_/5
4. What is correct specific gravity for most marine tanks? \_\_\_\_/5

Water Testing: Read a PH Test

1. Select correct equipment - test strips \_\_\_\_/2
2. Run test correctly \_\_\_\_/3
3. Read pH correctly \_\_\_\_/5
4. Is range acid/neutral/basic? \_\_\_\_/5
5. Is this correct pH for this tank? \_\_\_\_/5

Water Testing: Nitrate Test Marine Tank (Color Block Method)

1. Select correct equipment \_\_\_\_/5
2. Ran test correctly \_\_\_\_/5

#### Aquarium Management Rules

3. Used non-contaminating techniques of adding chemicals and shaking vials \_\_\_\_/3
4. Read the level correctly \_\_\_\_/4

5. Is this an acceptable level? \_\_\_\_/3

Water Testing: Amonia

1. Select correct equipment - \_\_\_\_/5
2. Ran test correctly \_\_\_\_/5
3. Read the level correctly \_\_\_\_/5
4. Is this an acceptable level? \_\_\_\_/5

Total \_\_\_\_\_ /20

#### Aquarium Management Practicum Scorecard #2

Name \_\_\_\_\_

School \_\_\_\_\_

Judge will score student on ONE of the following skills for a total of 20 points. All students will be judged on the performance of the SAME skills.

Equipment Use: Siphon Starting

1. Select correct equipment \_\_\_\_/5
2. Siphon started with correct/safe procedure \_\_\_\_/5
3. Used gravel cleaner correctly \_\_\_\_/5
4. Little to no water spilled \_\_\_\_/5

Equipment Use: Start an Automatic Power Filter

1. Select correct equipment \_\_\_\_/5
2. Assemble equipment correctly \_\_\_\_/5
3. Use proper/safe procedure for starting the filter \_\_\_\_/5
4. Filter operates correctly \_\_\_\_/5

Equipment Use: Adjust a Heater

1. Select correct equipment \_\_\_\_/5
2. Use correct/safe procedure for installing heater \_\_\_\_/5
3. Explain how to adjust temperature \_\_\_\_/5
4. What is the ideal temperature? \_\_\_\_/5

Total \_\_\_\_\_ /20

Aquarium Management Practicum Scorecard #3

Name \_\_\_\_\_

School \_\_\_\_\_

Judge will score student on ONE of the following skills for a total of 20 points. All students will be judged on the performance of the SAME skills.

Troubleshooting: Decorating

1. Does tank have an appropriate plant selection/arrangement? \_\_\_\_/5

2. Does tank have appropriate selection/use of substrate material? \_\_\_\_/5

3. Does tank provide adequate hiding for both bottom dwellers and others? \_\_\_\_/5

4. Does this tank have adequate and appropriate decorations? \_\_\_\_/5

Troubleshooting: Filtration

1. Is under gravel filter installed/operating correctly? \_\_\_\_/5

2. Ability to correct problem \_\_\_\_/5

3. Explain how the UG filter works \_\_\_\_/5

4. Are additional filters necessary? If so, what type? \_\_\_\_/5

Troubleshooting: Overall

1. What is wrong with this tank? \_\_\_\_/5

2. Ability to correct the problem (s) \_\_\_\_/5

3. Identify type of lighting and cover used in this tank \_\_\_\_/4

4. Identify type of filtration used in this tank \_\_\_\_/4

5. Recommend changes to equipment \_\_\_\_/2

Total \_\_\_\_\_ /20

Aquarium Management Practicum Scorecard #4

Name \_\_\_\_\_

School \_\_\_\_\_

Judge will score student on ONE of the following skills for a total of 15 points. All students will be judged on the performance of the SAME skills.

Sexing and Feeding Fish

1. Explain how to correctly identify sex of fish \_\_\_\_/5

2. Identify and select correct type of food \_\_\_\_/5

3. Feed appropriate amount/length of time \_\_\_\_/5

Catching and Bagging a Fish

1. Select correct equipment \_\_\_\_/5

2. Catch fish efficiently/easily \_\_\_\_/5

3. Correctly prepare and secure fish in bag (proper air/water, tie, no leaks

\_\_\_\_/5

Selecting Tank Mates

1. Determine temperament of fish (community/aggressive) \_\_\_\_/4

2. Suggest other species that could live in same tank \_\_\_\_/5

3. Name tank furnishings and /or plants that would be good for this fish \_\_\_\_/3

4. Name tank furnishings and/or plants that would be bad for this fish \_\_\_\_/3

Total \_\_\_\_\_ /15