

# Best Practices

Wildlife

# Texas Youth Hunting Program











# Duck Nesting Boxes

## Building a Wood Duck Nest Box

(Plan from Ducks Unlimited)

### Tools and Materials Needed

- handsaw or table saw
- drill and 1/2" bit
- jigsaw screwdriver
- sandpaper
- pencil
- measuring tape
- straight-edge
- 24 wood screws
- wood 1 each 1 x 10 x 12'

1. Measure and cut your wood to produce six pieces. Number the pieces after cutting.
  1. 31" (Back)
  2. 23.5" (Side)
  3. 7.75" (Floor)
  4. 23.5" (Front)
  5. 23.5" (Door)
  6. 14" (Roof)
2. Attach the back (1) to the side (2) using four screws fastened from the back of the box. See exploded view.
3. Drill five 1/2" drainage holes into the floor (3). Attach the floor by fastening two screws through the back and two through the side.
4. Draw the entry hole on the front (4) using a pencil (4 1/2" x 3 1/2" oval). Drill a pilot hole and cut out the entry hole using a jig saw. See detailed view. Proper entry hole dimensions are critical. *-Center and drill 4 inches from top*
5. Score the inside face of the front (4) with a saw. The horizontal slots will provide footholds when the ducklings climb out. You can also use hardware cloth.
6. Attach the front (4) using six screws.
7. Round the top outside edge of the door with sandpaper (5). See exploded view. Fasten the door at the top with one screw from the front and one from the back. The two screws form the hinge and allow the door to open. Pin the door shut with a nail from the front or add a latch.
8. Attach the roof (6) using four screws from the top and three screws from the back (be careful not to screw into the door). The box is now ready to install. Don't forget to put a 4-6 inch layer of wood shavings into the box for nesting material.

### MATERIAL MEASUREMENTS—not to scale!

### DETAILED FRONT VIEW—not to scale!

### EXPLODED VIEW—not to scale!

Hinge for Cleanout Door



# Duck Nesting Boxes



# Duck Nesting Boxes





# Fish Dissection







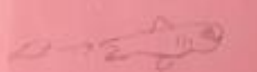

# Aquarium Nutrition Pamphlet

## Fish Reproduction Research


maturation - when a fish is in process of being sexually mature.

ovulation - when a fish lays an egg from ovaries.

Spawning - Release or deposit of an egg



## Reproduction of Fish






By 2050, the world population might be 9.7 billion people! To accommodate this population, food production must be extensively increased! By nearly 70%!  
Aquaculture can help! But in order to do that, we have to know the 'birds and the bees' of fish!

By: Amber Kashin, Lucas Defeat

## Male Reproduction

Reproductive organs used:

- Testes: Store the sperm and create Milk
- Sperm containing secretion of milk
- Efferent ducts: Connects the testes to the epididymis and transports sperm
- Epididymis: Stores mature sperm and enables sperm to become motile and fertile
- Seminiferous tubules: Release the sperm outside the body to fertilize eggs



## Methods

### Sexual reproduction

- Heterosexual: Male and female are separate organisms
  - Seahorse
  - Carp
  - Betta
- Hermaphroditic: Both sexes contained in one body
  - Clown fish
  - Parrot fish

### Asexual reproduction

- Non sexual: It reproduces itself
- Hermaphroditic (see above)


### Parthenogenesis

- Reproduction without fertilization
  - Herring
  - Sand lance
  - Hammerhead
  - Zebra shark
  - Bonnethead

## Female Reproduction

Reproductive organs used:

- Ovary: House the ova (eggs) and are located in the body cavity. Connects to the Peritoneum
- Peritoneum: Membrane lining the abdominal cavity
- Oviduct: Draws mature eggs from the ovary and delivers eggs from the ovaries to the outside of the body
- Ova: egg fertilized outside the body by sperm





# Fish Nutrition Children's Mat

Fish require very high in protein.

Protein makes up the soft structure-tissue in animals.

Salmon migrate every year to breed & lay eggs.

Fish need vitamins in very small amounts.

Carbohydrate is a major source of energy in fish.

Answers: Word Scramble: Fish, Diet, Protein, Ocean, Eel, Tuna

Word Bank: Vitamins, Diet, Protein, Fish, Catfish, Pellets, Protein

Crossword: 1. Vitamin, 2. Diet, 3. Carbon, 4. Food, 5. Pellets

The largest fish is the great white shark.

Fish are like reptiles & amphibians. They can't control their body temperature.

Fish are Cold Blooded

Fish have a good sense of taste, sight & touch.

Joasmine & Carter

**Fish**

- Water does most of their breathing
- gasses are called through the mouth
- fish take gills
- Respiratory

**Humans**

- Respiratory from mouth
- Humans take gasses through the mouth by exhaling
- Carbon Dioxide
- Exhale the body

**Macronutrient**- needed in large amounts for growth  
Nitrogen, Hydrogen, Phosphorus, and Calcium

**Micronutrient**- needed in small amounts for growth and metabolism  
Copper, Sodium, Chlorine, and Zinc

**Bioenergetics**- the balance between energy from food and energy used

**Factors we might need to consider to properly feed fish:**

- Fish growth
- Feed rate
- pellet size
- feeding frequency

**Aquatic feeding guidelines:**

- The smaller the fish, the higher the percentage of body weight he eats everyday
- The feed to body weight ratio decreases as the fish gets larger
- As the density of the fish increases, so should the feeding rate

**Types of Common Fish Feed:**

- Pellets- most nutritionally complete diet, cook, and provide uniform nutrition, may be dry, moist, or semi-moist, 5-10% (10-15%)
- Flakes- used largely in fancy fish, sink very slowly, needs large quantities in order to meet the nutritional needs of fish (10-15%)

**Feed conversion:** how much feed it takes to get them to gain weight

**Feed efficiency:** measures how well fish use the ration

- Both are important because we use both as benchmarks for profitability

**Key for Crossword**

Answers: 1. Vitamin, 2. Diet, 3. Carbon, 4. Food, 5. Pellets

## FISH FACTS

The feed to body weight ratio decreases as Fish get larger.

Higher density fish have a higher feeding rate.

Carbohydrates are a fish's main source of Energy.

Pellet food sinks quickly; flakes do not.

Bioenergetics is the study of the balance of food intake and energy used.

The type of food a fish eats and the Amount varies among fish.

Micronutrients are needed in a small Amount.

Macronutrients are needed in a large Amount.

Did you know? Icthyophobia is the fear of fish.

Did you know? The largest living fish is the whale shark.

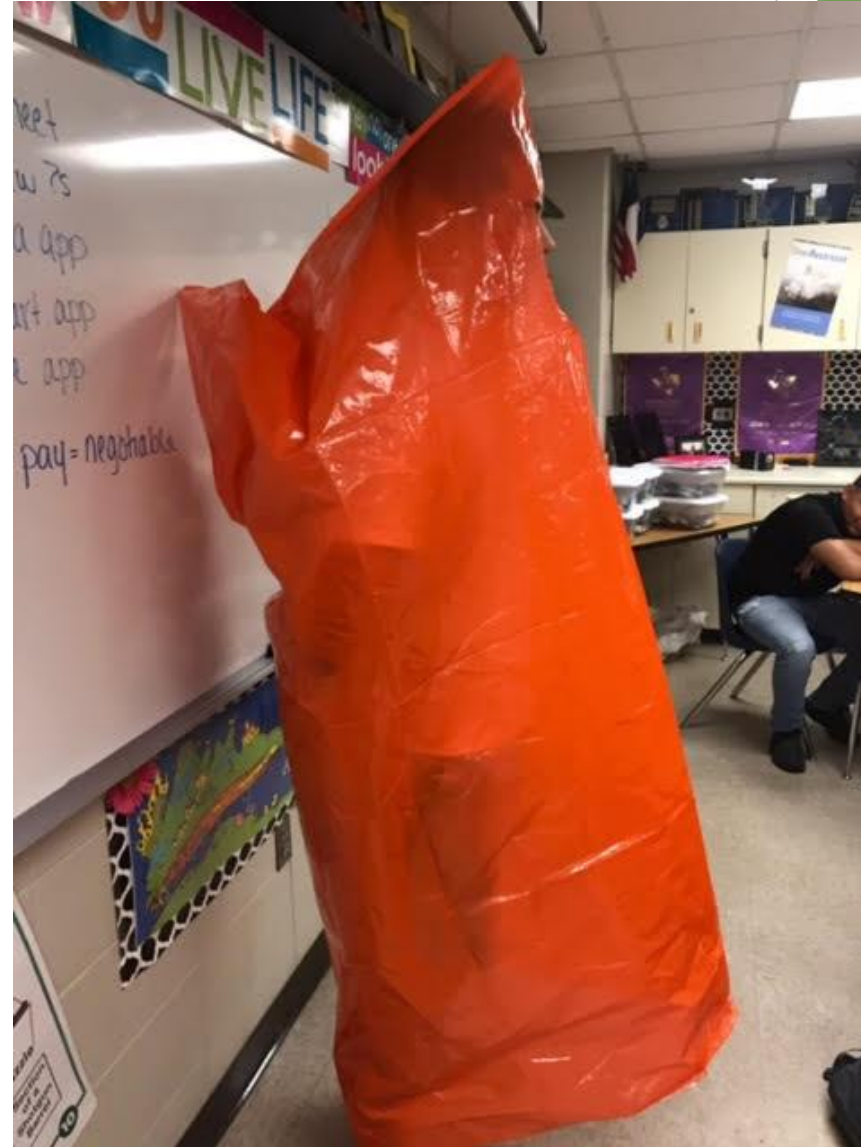
**Fish Identification Key:**

- Catfish
- Swordfish
- Shark
- Bass

# Safety and Survival Kits/Demonstrations



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# Fishing Rods



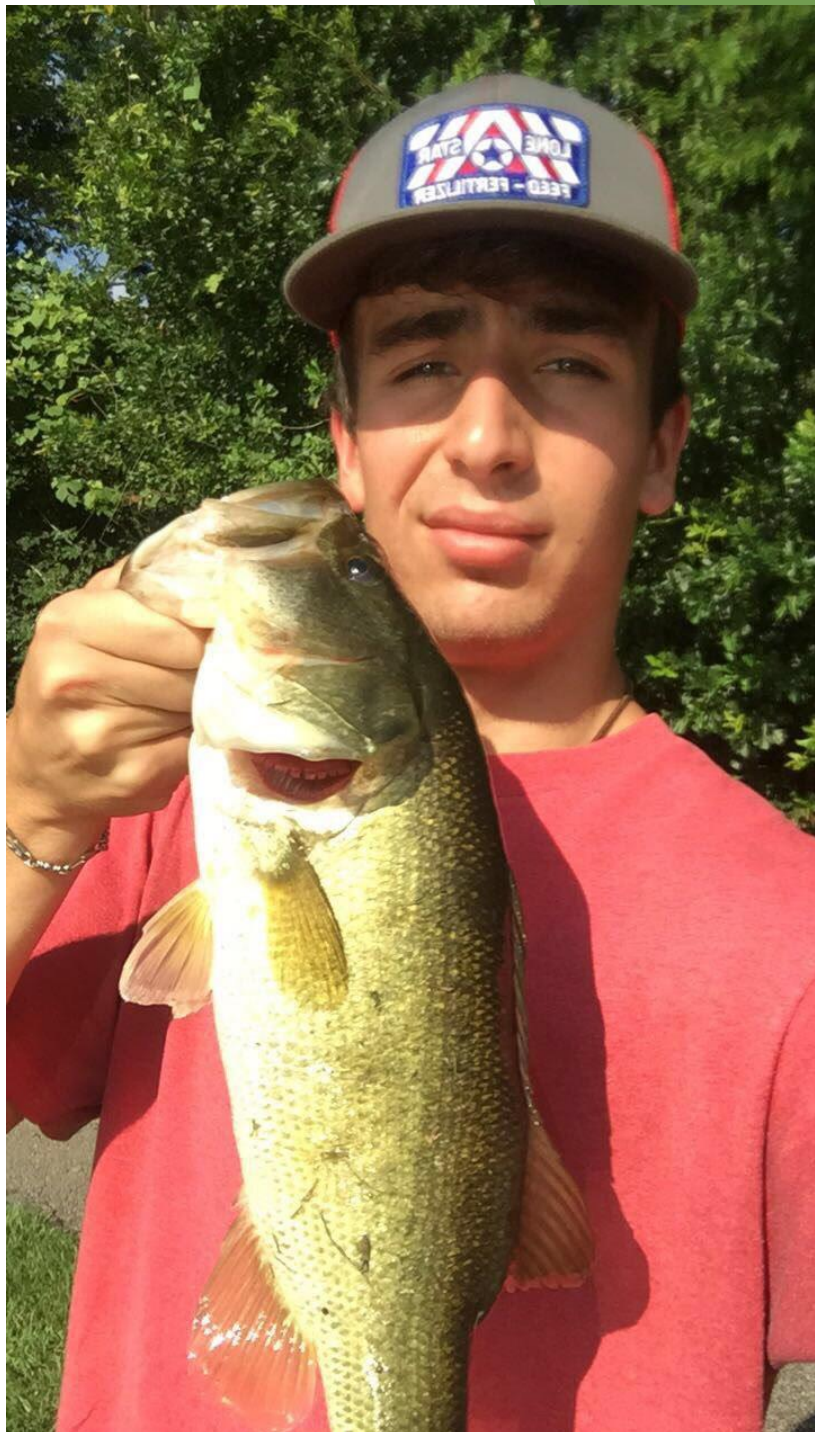














# Best Practices

Advanced Animal Science

# Brain Cap

