

# Dead Perch Parts

**Adapted from:** An original Creek Connections activity created from the Fish Anatomy model.

**Grade Level:** Intermediate or advanced

**Duration:** 30 minutes

**Setting:** classroom

**Summary:** Students examine a diagram of a Perch and attempt to match the perch's body part with its function while filling in the blanks on the worksheet.

**Objectives:** Students study the internal and external anatomy of a Perch and learn the functions of the fish's specific organs

**Vocabulary:** Anatomy, Anal Fin, Anus, Caudal Fin, Dorsal Fin, Eye, Gill Rakers, Gill, Gonad, Haemal, Spine, Heart, Intestine, Kidney, Liver, Mouth, Neural Spine, Swim, Bladder, Ventral Aorta, Vertebrae

**Materials (Included in Module):**

- Worksheet, answer key, diagram
- Model of a Perch

**Additional Materials (NOT Included in Module):**

- Overhead projector,
- Photocopies of original worksheet are needed
- Photocopies of Word Bank (optional)

## ACADEMIC STANDARDS:

### 4<sup>th</sup> Grade

- 3.3.4.B. Know that living things are made up of parts that have specific functions.

### 7<sup>th</sup> Grade

- 3.3.7.A. Describe the similarities and differences that characterize diverse living things.

### 10<sup>th</sup> Grade

- 3.3.10.A Explain the structural and functional similarities and differences found among living things.

### 12<sup>th</sup> Grade

- 3.3.12.A Explain the relationship between structure and function at all levels of organization.

## BACKGROUND:

Fish are very important to waterway ecosystems and they play many valuable roles in the French Creek Watershed. They help maintain the balance needed for organisms to survive and the waterway to remain healthy. In the study of science, fish provide an excellent example for an understanding of **anatomy**. Anatomy is all the parts found in the structure of a plant or animal. One fish that is useful in studying anatomy is the Perch, which lives in the French Creek watershed. Perch are one of 130 species that belong in the perch family (Percidae). "These freshwater fish can be found in streams, lakes, ponds and rivers with clear water and aquatic vegetation. They can be identified by their oblong bodies and golden yellow or brassy colored scales. There are also 6–7 dark vertical bands that run from the dorsal area to near the belly. The heaviest perch on record weighed 4¼ lb (1.9 kg), but the average weight is about 2 lb," (Carolina Biological, 1998).

The anatomy of a fish is best studied with the use of a side-view internal diagram or an incased specimen that has been cut in a way that reveals the fish's internal anatomy. Each part in the internal and external anatomy of a Perch serves a purpose in the fish's daily function. For example, the **ventral aorta**, located near the heart, controls blood flow and the **anal fin**, located on the exterior of the fish, helps the perch to swim by working as a steering mechanism.

### **OVERVIEW:**

Students will examine a model of the Perch's anatomy and answer a worksheet to learn the main functions of each part. Students should, with some practice, be able to remember the basic order of the anatomy of the perch.

### **PROCEDURE:**

#### **Teacher Preparation:**

1. Photocopy the original worksheet and also the fish diagram if desired.
2. Photocopy the word bank if the students are first being introduced to fish anatomy.

#### **Student Experiment or Activity:**

1. Students are to examine the perch model provided in the module to get a good look at the structure of the fish.
2. Students should work through the fish parts worksheet to determine the different functions of each part of the fish. Each question asks for the name of the part and the number of the part on the model and fish diagram. Students should fill in both blanks. If the students are new to the activity then it may be helpful for them to have a copy of the Word Bank to work with.
3. Once all of the questions are answered on the worksheet, students should go over the answers together or with the teacher.

### **DISCUSSION:**

Does the fish have parts for breathing on the inside of its body like we do? *No, the perch and other fish have gills for breathing.*

What body part keeps the perch from sinking in the water? *The air bladder controls the specific gravity of the perch.*

### **EVALUATION:**

- Collect fill-in-the-blank worksheets, or go over answers as a class.
- Use words like Identify, Explain, Describe
- You can also quiz students on the Discussion questions above. If you have some additional ones that could be used in an exam or quiz please let Creek Connections know.

**EXTENSIONS AND MODIFICATIONS:**

- Compare the anatomy of a fish to the anatomy of another aquatic organism, for example a frog, turtle or water snake. What similarities and differences do you notice? What adaptations are specific to each organism? How do these adaptations help each creature survive in its habitat?
- Dissect a fish with the class. Determine if students can identify the anatomical structures when examining a real fish.

**NOTES (PLEASE WRITE ANY SUGGESTIONS YOU HAVE FOR TEACHERS USING THIS ACTIVITY IN THE FUTURE):**





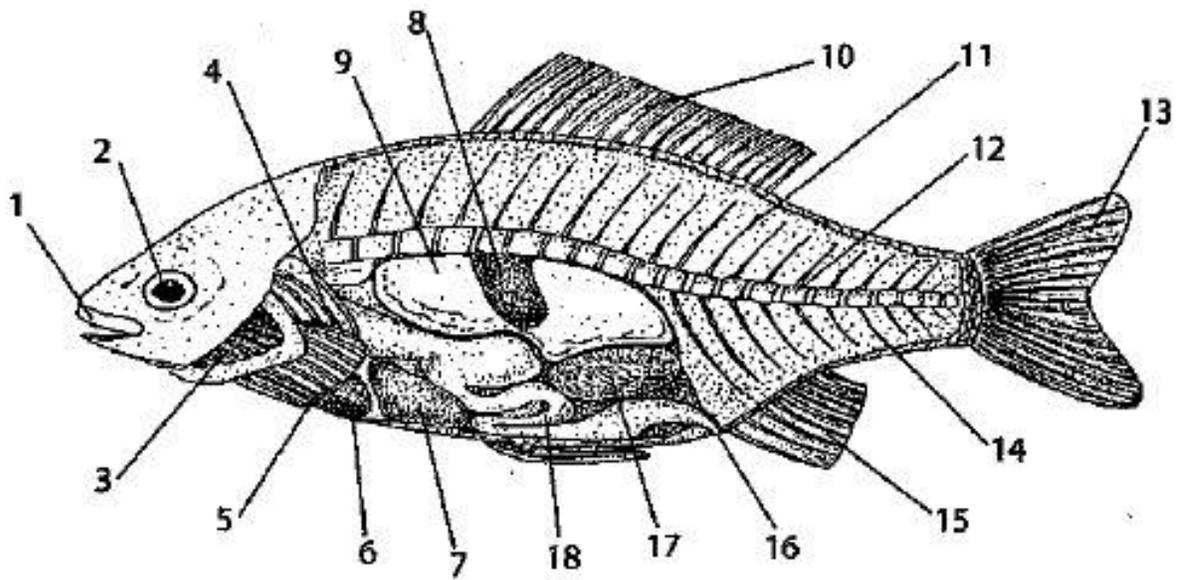
## WORK SHEET : DEAD PERCH PARTS

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Name \_\_\_\_\_ Date \_\_\_\_\_

Try to guess the parts of a dead Perch! Listed below are descriptions of various internal and external parts that you would find on and in a perch (as well as most other fish). Fill in the blank with the "dead Perch part" and then try to match it with a number on the *Perch Anatomy* model or worksheet.

1. The \_\_\_\_\_ is important for cleaning the blood of excess ions (such as sodium) in the bloodstream. #\_\_\_\_
2. The \_\_\_\_\_ is the reproductive organ in fish. In males, sperm is produced here and in females, eggs are produced. #\_\_\_\_
3. The \_\_\_\_\_ is the site of gas exchange for a fish. Water flows over this bringing oxygen to exchange in the capillaries located within. Carbon dioxide is released from the fish's blood. #\_\_\_\_
4. The \_\_\_\_\_ is a very large organ that has many functions. One important function is to produce bile which is used in the digestive system to help break down fats. #\_\_\_\_
5. The \_\_\_\_\_ helps the fish control its depth in the water column. #\_\_\_\_
6. The \_\_\_\_\_ is the opening of the oral cavity. Food enters this for the digestive system. #\_\_\_\_
7. The \_\_\_\_\_ contains part of the nervous system below the vertebrae. It also functions as part of the support system of the fish. #\_\_\_\_
8. The \_\_\_\_\_ contains part of the nervous system above the vertebrae and also functions as part of the support system of the fish. #\_\_\_\_
9. The \_\_\_\_\_ is where the final digestion takes place and nutrients are absorbed into the bloodstream. #\_\_\_\_
10. The \_\_\_\_\_ is an important sensory organ for the fish. It collects visual data from the fish's surrounding environment and transmits it to the brain. #\_\_\_\_
11. The \_\_\_\_\_ brings de-oxygenated blood to the gills for gas exchange.
12. The \_\_\_\_\_ protect the fragile gills from particulates in the water. #\_\_\_\_
13. The \_\_\_\_\_ is important for the fish to maintain its balance and position as it swims. #\_\_\_\_
14. The \_\_\_\_\_ is an important part of the circulatory system by acting as a pump to deliver blood to tissues and cells of the fish. #\_\_\_\_
15. The \_\_\_\_\_ is important for the fish to maintain balance and position as it swims. #\_\_\_\_
16. The \_\_\_\_\_ is also important for movement or swimming and is located near the anus. #\_\_\_\_
17. The \_\_\_\_\_ are important for protecting the spinal cord of the fish. This is also made out of cartilage. #\_\_\_\_
18. The \_\_\_\_\_ is where waste materials exit the digestive system. #\_\_\_\_



## Dead Perch Parts

### Word Bank

Anal Fin  
 Anus  
 Caudal Fin  
 Dorsal Fin  
 Eye  
 Gill Rakers  
 Gill  
 Gonad  
 Haemal Spine  
 Heart  
 Intestine  
 Kidney  
 Liver  
 Mouth  
 Neural Spine  
 Swim Bladder  
 Ventral Aorta  
 Vertebrae



## KEY : DEAD PERCH PARTS

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1. Kidney (#8)
2. Gonad (#17)
3. Gill (#4)
4. Liver (#7)
5. Swim Bladder (#9)
6. Mouth (#1)
7. Haemal Spine (#14)
8. Neural Spine (#11)
9. Intestine (#18)
10. Eye (#2)
11. Ventral Aorta (#5)
12. Gill Rakers (#3)
13. Dorsal Fin (#10)
14. Heart (#6)
15. Caudal Fin (#13)
16. Anal Fin (#15)
17. Vertebrae (#12)
18. Anus (#16)