4th Grade **45 Minutes**

FISH DISSECTION

Oregon Science Content Standards:
4.1 Structure and Function: Living and non-living things can be classified by their characteristics and properties.
4.1L.1 Compare and contrast characteristics of fossils and living organisms.
4.2 Interaction and Change: Living and non-living things undergo changes that involve force and energy.
4.2L.1 Describe the interactions of organisms and the environment where they live.

Ocean Literacy Principles:
5. The Ocean supports a great diversity of life and ecosystems

Goals:
- To learn internal and external fish anatomy
- To see the inside of a fish firsthand
- To do a hands-on dissection

Concepts:
- Fish have many organs for many different functions.
- Fish share a lot of the same body parts as people, but some are used differently.
- Fish breathe through gills and use fins to move.

Materials:
- Fish (6-10 inch anchovies or other species can be bought at bait shops) enough for one per each group of 3-6 students
- Scissors—one per each group
- 1 knife—for the teacher to get the cut started on the ventral side (bottom) of each fish
- Trays or sturdy paper plates, one per each group
- Wax paper or newspaper to cover trays or desks
- Rubber food gloves (be aware of any latex allergies) for each student if desired
- Large plastic trash bag
- Internal and external anatomy worksheets for each student

OIMB GK12 CURRICULUM

Lesson Plan:

1. Go over with the students the importance of respecting the fish they are about to dissect and explain that dissections are done to learn about the animal. Emphasize that they need to use care during the dissection, for their own safety and to respect the fish.
2. Review the internal and external anatomy of fish so students know what they'll be looking at when they dissect the fish. Have the students label the anatomy worksheets.
3. Give each group (3-6 students) a tray covered with wax paper or newspaper to keep the fish off the desks. If trays are not available, sturdy paper plates will work.
4. Give each student a pair of food gloves, and each group a pair of scissors.
5. Pass out a fish to each group and have them start by touching it and identifying the parts on the outside of the fish such as the fins, gills, scales, eye.
6. Have a responsible member of each group start the cutting. If this is difficult, the teacher can start the cut with a sharper knife.
    a. Begin cutting at the fish's anus and cut a slit along the ventral surface (bottom) of the fish all the way up to just under the gills.
    b. From there, cut a slit up the side of the fish near the gills and another up the side from the anus region—this should leave a flap that can be lifted.
    c. Groups can lift and cut off this flap to see the inside of the fish.
    d. The most obvious organs are the stomach and intestine, and the next largest is the liver. Students should try to find each part they labeled on their worksheets.
    e. The gills are under the gill flap, and the heart is just under the gills towards the ventral surface of the fish.
    f. After finding all the parts, groups may cut out the eyes or look for the brain.
7. Once groups have finished dissecting the fish and are getting distracted, have them clean up, throwing all the disposable supplies and the fish in a plastic trash bag. Afterwards, seal up the trash bag and remove it from the classroom so the room does not smell the rest of the day.

Assessment: In order to see what the students learned, give them another copy of the same anatomy worksheets the next day and have them label the parts from memory and/or review the parts and have the students identify their function.

Tips: Most students love to explore the different parts of the fish, so after they are finished finding all of the parts that are on the worksheet, most enjoy having a bit of freedom. Emphasize how important it is to be careful with the scissors and to not take home any fish parts—they will stink if they get forgotten in backpacks.

GK12 Fellows: Holly Keammerer, Sara Matthews, Josh Lord

NAME:_____

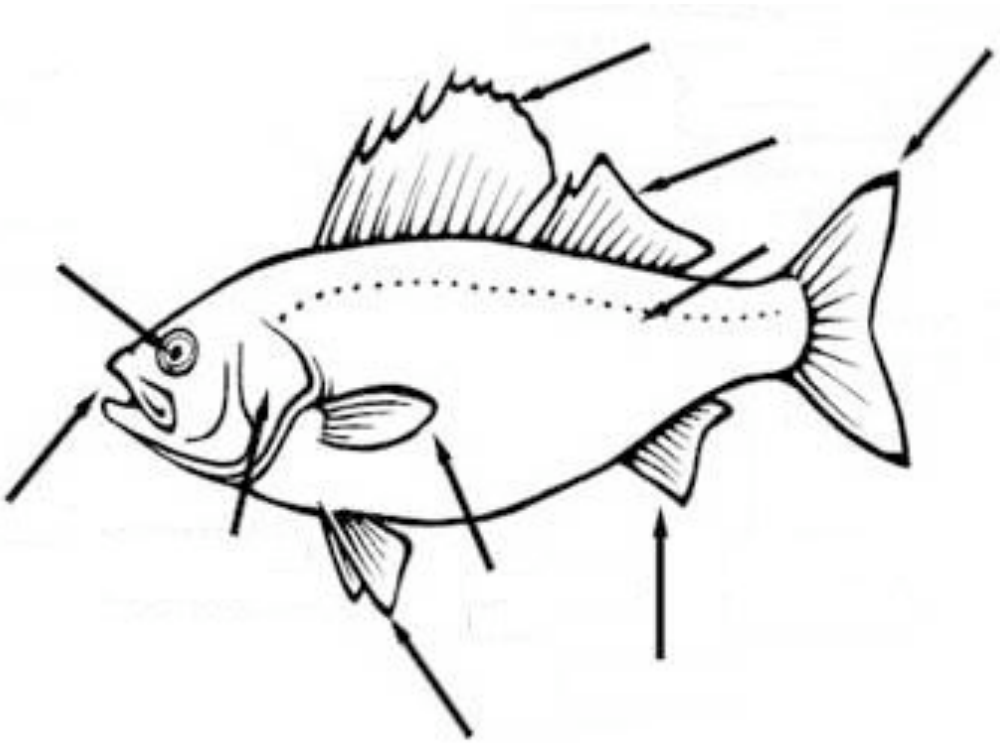
Fish External Anatomy

- "External" = outside
- "Anatomy" = structure of an animal or plant

Instructions: Label the parts of the fish using words from the word bank. Write the name of the part next to the arrow. Draw some scales on your fish! Color your fish if there is time.

Word Bank

Eye	Gill cover	Dorsal fin	Pectoral fin	Pelvic fin
Jaws	Lateral line	Caudal fin	Anal fin	



Images modified from:

http://www.tpwd.state.tx.us/learning/webcasts/rivers02/fish_swim.phtml

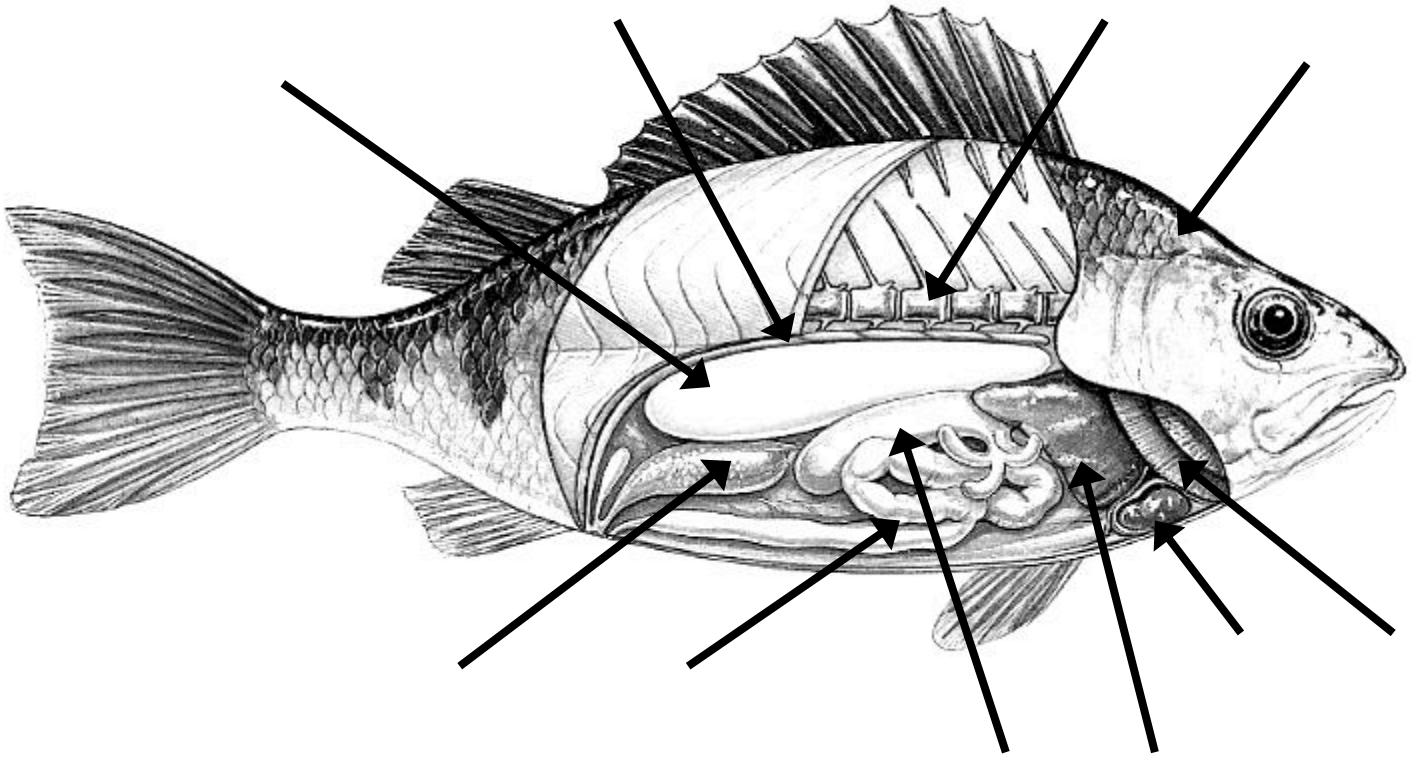
Name: _____

Fish Internal Anatomy

- "Internal" = inside
- Anatomy" = structure of an animal or plant

Instructions: Label the parts of the fish using words from the word bank. Write the name of the part next to the arrow.

Gills	Brain	Intestine	Gonads	Backbone
Heart	Kidney	Liver	Stomach	Swim bladder



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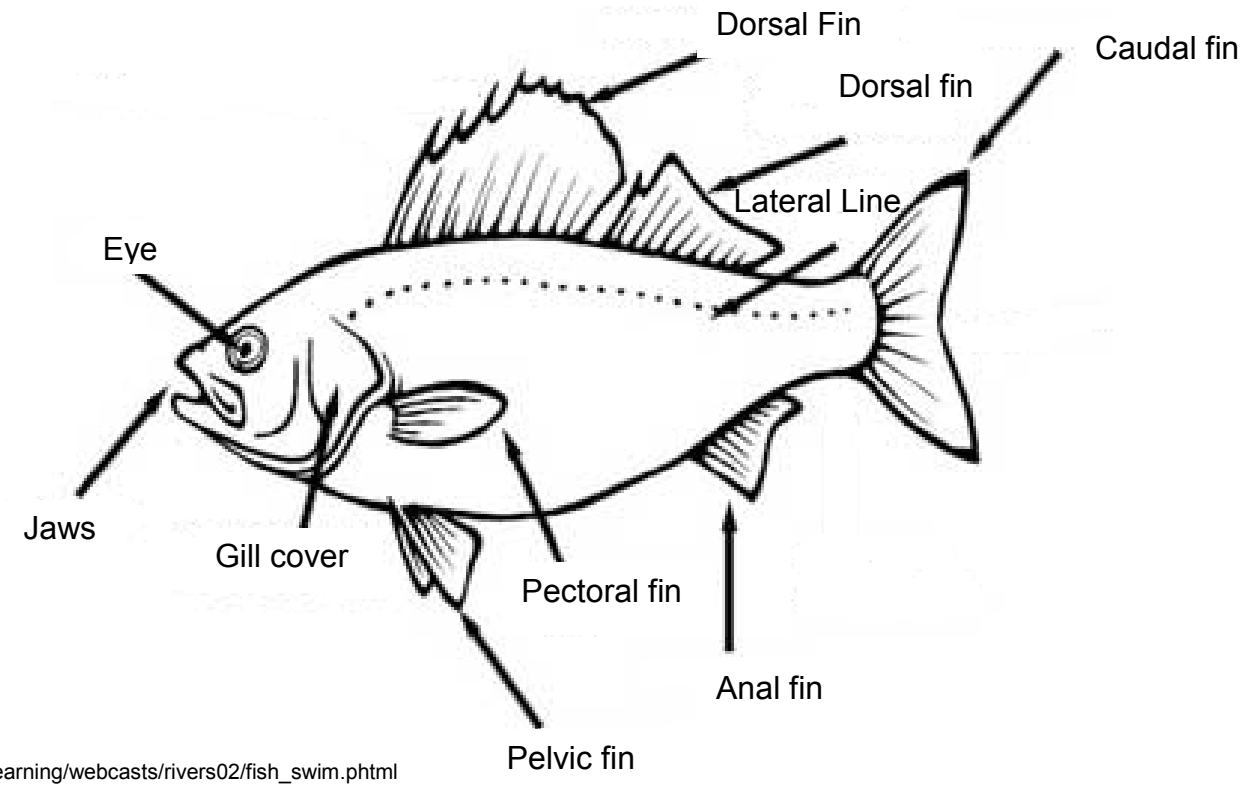

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