



BAY CRITTERS:

Learn about fish by just looking at them.

Investigation Questions

1. What can we learn from the appearance of a fish? How does the appearance of a fish tell us about its habitat and diet?
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Adaptations

Imagine you are a fish in a saltwater marsh, a sandy beach, or even a small river in the Chesapeake Bay watershed. What do you think you would need to survive? What predators would you avoid?

Traits that help an organism survive are called adaptations. Adaptations may vary from species to species. An example of a type of adaptation is camouflage. Camouflage is a trait that an organism possesses that allows it to blend in with its surroundings. One type of camouflage, called countershading, is when an organism is darker on top and lighter on the bottom. Can you guess why that occurs?

It is so the animal blends in with darker surrounding below to confuse predators, like osprey, above. The organism is lighter on the bottom so that it blends in with the lighter surrounding above it to confuse predators, like striped bass, below.

In this lesson we are going to focus on making observations and using critical thinking skills to make educated guesses about where fish live and how different adaptive traits help fish survive. Even without the use of a field guide to look up a specific species, there is a lot you can learn about a fish just by looking at it!

Investigate

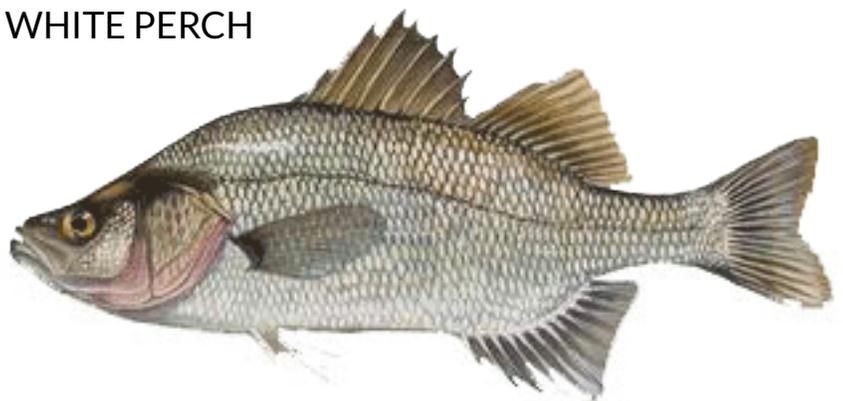
Watch the [Fish Adaptations video](https://www.cbf.org/TK).
[cbf.org/TK](https://www.cbf.org/TK)

You can also refer to the picture of the white perch here.

Use the drawings in this document to help guide your investigation answers below.

Imagine you are a white perch trying to avoid getting eaten by an osprey from above or a bigger fish from below. You can't live your life in fear though; you need to eat, too. What characteristics do white perch have that help them avoid getting eaten? Practice a few fish adaptations at home through the following fun activities.

WHITE PERCH



Answer the questions along the way. If you want to take a deep dive into fish and their adaptations, then be sure to check out the additional resources included at the end of this lesson.

MOUTH PLACEMENT

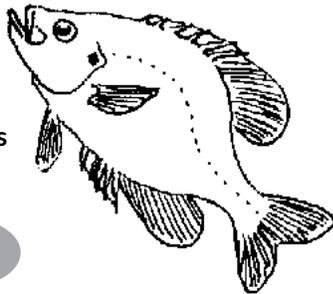
Take a look at the white perch from the video. Where does its mouth point? Is it upward facing, straight out, or downward facing? Use your hands to symbolize a giant mouth. Ask someone in your house to pass you a soft ball (not a softball, some kind of cushioned or inflatable ball like a volleyball) in the air. Have your hands ready to catch it, but keep your elbows locked upward. Here you are a fish with an upward facing mouth. What kinds of things do you think they would eat in the water based on this adaptation? Next, have them throw it again in the air, but this time your mouth will be straight in front of you, like a perch. Where does the food need to be for you to catch it like this?

Fish are designed to feed at different levels of the water column and to eat different type of food.

SUPERIOR MOUTH

Feeds at the Surface

Lower
Jaw
Extends



Front View of Open Mouth: Horizontal Oval for scavenging and eating large crustaceans



TERMINAL MOUTH

Feeds Head On

Jaw Extends
on Top and
Bottom



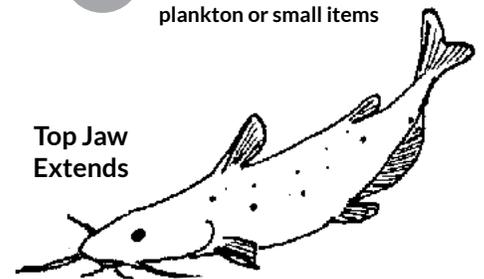
Front View of Open
Mouth: Vertical Oval
for eating fish or
filtering plankton



INFERIOR MOUTH

Feeds at the Bottom

Front View of Open
Mouth: Round
for selective eating of
plankton or small items



Top Jaw
Extends

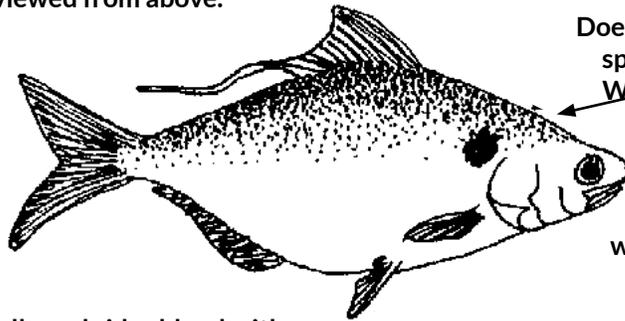


1. In what direction does a white perch's mouth point?
2. What kinds of things do you think a fish with an upward facing mouth, like the oyster toadfish, would eat based on this adaptation?
3. In the mouth placement activity, when your mouth was straight out in front of you, where did the ball need to be for you to catch it? What might this tell you about what perch actually eat?

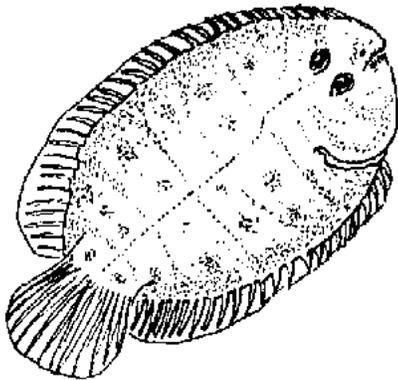
CAMOUFLAGE

Colors and markings help fish blend in with their surroundings.

A dark back blends with water color when viewed from above.



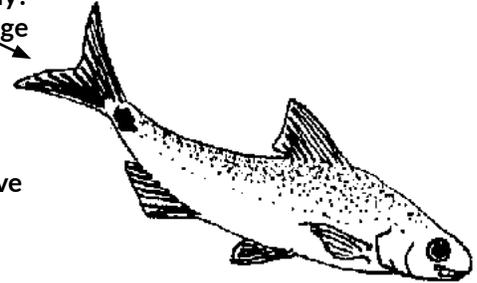
A white belly and sides blend with sunshine when viewed from below.



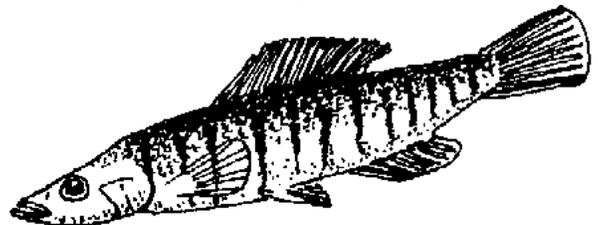
Mottled brown back and sides help fish blend into crevices or bottom sediments.

Does your fish have a spot on its body?
What advantage

would that give a fish?



An olive green back and sides with vertical stripes help fish blend into aquatic grass beds.



4. Do you remember the term for referring to the type of camouflage in which a fish's top and bottom are colored differently based on its environment?
5. What kinds of predators might a white perch be hiding from in the water?

In the investigation activity, what color bottoms did you choose for your white perch outfit?

6. What kinds of predators might a white perch be hiding from in the sky?

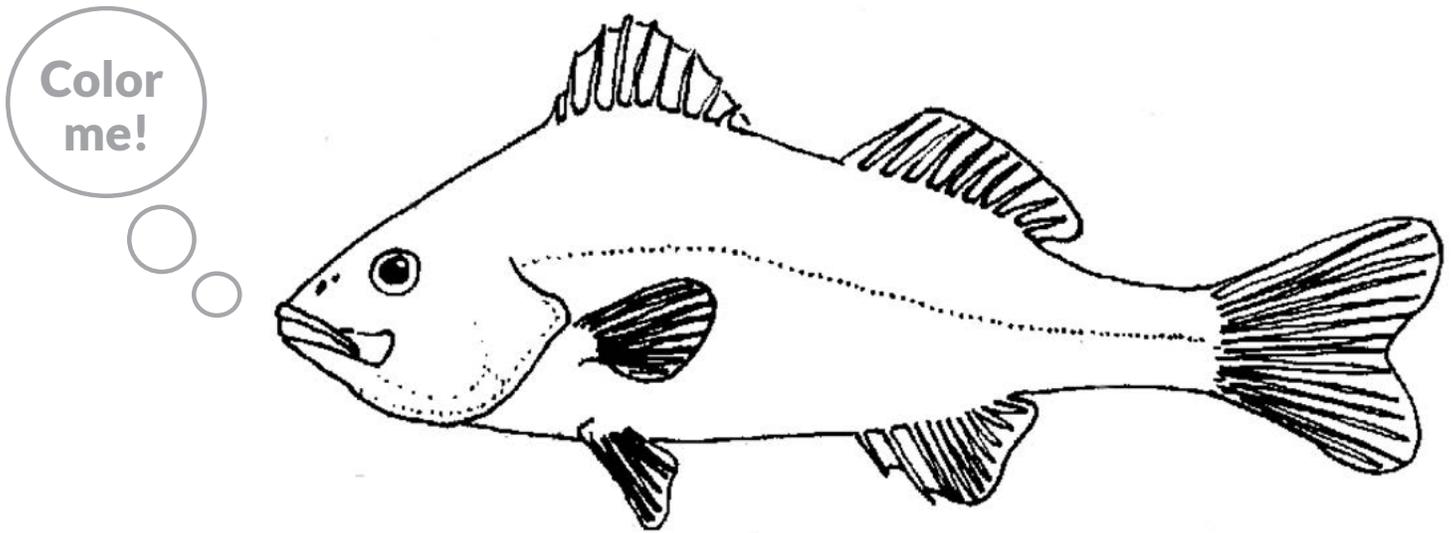
What color top did you choose for your white perch outfit?

SIGHT

7. When was it most difficult to catch the ball, when it was high in the air, middle, or on the ground?

Thinking of this, what do you think a white perch eats?

8. What can the location of a fish's eyes tell you about where it swims in the water column?



DIVE DEEPER:

Check this Out

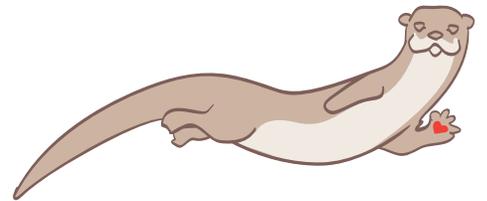
Follow this link for more in-depth information.

[Fish in their Environments](#)

Design a Fish

Be creative with this cool activity.

[Design a Fish](#)



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INVESTIGATION

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