

Read the following article and answer the questions.

Adaptations - Designs for Survival

From **shoreline tidepools** to its deep dark bottom, the Hudson **River** is a wild place. Here one can discover many kinds of plants and animals, each with its own **adaptations** for life in and along the river.

Adaptations help **organisms** do the things they must do to survive in their environments. Living things have to take in food and avoid being eaten. They need to survive summer's heat and winter's cold. They must **sense** what is going on around them.

Hard shells, warm fur, and sharp thorns are examples of how an organism's form or body can adapt it for survival. These are called **physical adaptations**. A catfish has whiskers with taste buds. With this physical adaptation, the fish finds food that it can't see in the darkness at the Hudson's bottom.



channel catfish



long eared owl

Color is another physical adaptation that can help creatures survive. The colors and patterns of this owl's feathers resemble the colors and patterns of tree bark. This makes the bird hard to see as it sits against tree trunks. Color and pattern that blends into the background is called **camouflage**.

Can bright color be a useful adaptation? Can't birds easily spot monarch butterflies and make a meal of them? A bird might try this once, but it won't do it again. Monarchs taste bad. Their bright color is a warning of that fact. This adaptation helps to protect monarchs from being eaten.



monarch butterfly

Behavior also helps animals survive. Monarch butterflies **migrate** south before winter, when the cold would be deadly and there are no flowers to provide food. American shad swim in **schools** for protection. The many fish darting here and there confuse **predators** by making it hard to focus on just one shad. Migration and schooling are examples of **behavioral adaptations**.



1. What is an **adaptation**?

2. Give two examples of animal adaptations from the article. Explain how each helps the animal survive.

3. Is each of the following a **physical** or **behavioral** adaptation?
(All of these organisms live in the Hudson Valley.)



(a) a map turtle's shell.



(b) beavers building dams.



(c) prickly pear cactus spines.



(d) a black bear's deep winter sleep.