

CLASSIFICATION ANIMALS OF THE BAY & CREEK

“On Your Own” at the Virginia Aquarium



1. Scientists organize living things into groups. Each group has similar characteristics and is subdivided into smaller and smaller units in which the individuals are even more similar. This process is called *classification*.

The first level of classification is *kingdom*. There are five kingdoms:

- **Plants** (example – trees, grasses)
 - **Animals** (example – fish, worms, people)
 - **Fungi** (example – yeast and mushrooms)
 - **Protista** (example – amoebas and other single-celled organisms)
 - **Monera** (example – bacteria)
2. Representatives of all five kingdoms are found in the Owls Creek and the Chesapeake Bay watersheds. If you were studying just plants and animals, you would find almost 3000 different kinds around the Chesapeake Bay. Many of these plants and animals also live in the Owls Creek watershed. Some live in the water and some live on land.

Today you will be observing members of *Kingdom Animalia*. The animal kingdom is broken down into smaller groups called *phyla* (singular = *phylum*). There are many phyla of *invertebrate* animals. There is only one *vertebrate* phylum, Phylum Chordata.

- **What is the difference between an invertebrate and a vertebrate animal?**

Invertebrates → _____

Vertebrates → _____

3. Most of the animals in the Owls Creek and Chesapeake Bay watersheds are invertebrates. Today you will be looking for animals in four invertebrate phyla. Back at school or at home, you can use books or the Internet to learn more about the characteristics of each phyla.

Put a check in the blank when you have seen a member of the phyla listed below.



- _____ **Phylum Cnidaria** (pronounced “ni-dare-ee-uh”) = animals with stinging cells
Look for sea anemones in the Marsh Pavilion and jellies in the Cold water Aquarium area; and corals in the IMAX® lobby aquarium .



- _____ **Phylum Mollusca** = name means “soft-bodied”
Look for periwinkle snails, mud snails, and ribbed mussels in the Marsh Pavilion; whelks in the Chesapeake Bay Touch Tank; blue mussels in the Lobster Aquarium; and an octopus in the Cold Water Aquarium area. Other familiar mollusks are clams, oysters, and scallops.



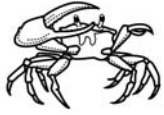
- _____ **Phylum Arthropoda** = animals with jointed exoskeletons
Look for fiddler crabs and grass shrimp in the Marsh Pavilion; horseshoe crabs and hermit crabs in the Marsh Pavilion and Chesapeake Bay Touch Tank; and a lobster in the Cold Water Aquarium area. There are more arthropods than any other kind of animal on earth. Insects and spiders are also arthropods.



_____ **Phylum Echinodermata** = animals with spiny skin
Look for sea stars in the in the Lobster Aquarium and for sea urchins in the Cold Water Aquarium area.



When you observed a mollusk, what adaptation did it have to protect its soft body?



Which group seems better at moving around – mollusks or arthropods? (Circle your answer). Why?

List the names of the invertebrates you observed today in the space below:

- | | |
|----------|-----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |
| 5. _____ | 6. _____ |
| 7. _____ | 8. _____ |
| 9. _____ | 10. _____ |

4. Each phylum is broken down into *classes*. For example, vertebrate animals belong to Phylum Chordata, which is divided into five classes:

- **Fish, Amphibians, Reptiles, Birds, Mammals**

Today you will be looking for animals from each chordate class.

Put a check in the blank when you have seen a member of the classes listed below.

_____ **Fish** = live in water and use fins to swim; breathe with gills; have scales on skin
Look for fish in aquariums in the Bay & Ocean Pavilion and the Marsh Pavilion. Highlights include local fishes in the Chesapeake Bay Aquarium, sharks in the Norfolk Canyon Aquarium, and seahorses in the Marsh Pavilion.

_____ **Amphibians** = moist skin and eggs; young different from adults; breathe with gills, lungs, or through skin
Look for tree frogs and toads in the Marsh Pavilion and along the Nature Trail.

_____ **Reptiles** = scaly skin; leathery eggs; young smaller version of adults; breathe with lungs
Look for snakes and turtles (snapping turtle, box turtles, diamondback terrapins) in the Marsh Pavilion. Look for sea turtles in the Sea Turtle Aquarium in the Bay & Ocean Pavilion.

_____ **Birds** = feathers cover skin; use wings to fly; lay eggs; breathe with lungs
Look for birds in the Aviary and along the Nature Trail.

_____ **Mammals** = fur covers skin; give birth to live young; nurse young; breathe with lungs
Look for marsh rats and river otters in the Marsh Pavilion. Look for harbor seals at the entrance to the Bay & Ocean Pavilion.



Look at a seahorse. What are the parts that look like ears? What does it use its tail for?



Look at the moist skin of a tree frog. Why would it need to stay out of salt water?
(Hint: Think about what the salt would do to its moist skin.)



Look at the turtles in the Marsh Pavilion. How can you tell which species are swimmers?



Look at the birds in the aviary. The ancient ancestors of birds were reptiles. What do you see on a bird that looks like something on a reptile? Hint: Look at birds' legs.



Look at the river otters. Sometimes they feed in rivers where the water is not clear. How can they find food on the bottom if they can't see it?

5. Each class of animals is broken down into *orders*, and orders are broken down into *families*. Each family is divided into *genera* (singular = *genus*). Finally, genera are represented by individual *species*. Together, the genus and species form the *biological* or *scientific name* of an animal. The scientific name usually comes from Latin or Greek. That's why it might seem difficult to pronounce.

Pick an animal that you are interested in. Look at the label by the exhibit to find its name. Write down its scientific name.

6. Each animal has only one scientific name, but may have many *common names*, which can be confusing. To avoid confusion, scientists always use the scientific name when talking about animals. You probably use the common name. For example, *Callinectes sapidus* is a blue crab.

What is a common name for the animal whose scientific name you wrote above?

Key
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Invertebrates → no backbone

Vertebrates → backbone

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Look for sea stars in the Lobster Aquarium and for sea urchins in the Cold Water Aquarium area.



When you observed a mollusk, what adaptation did it have to protect its soft body?

shell



Which group seems better at moving around – mollusks or arthropods? (Circle your answer.)
 Why?

arthropods = appendages to move

List the names of the invertebrates you observed today in the space below:

- | | |
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_____ **Birds** = feathers cover skin; use wings to fly; lay eggs; breathe with lungs
Look for birds in the Aviary, along the Nature Trail, and in the Coastal River Room.

_____ **Mammals** = fur covers skin; give birth to live young; nurse young; breathe with lungs
Look for marsh rats and river otters in the Marsh Pavilion. Look for harbor seals at the entrance to the Bay & Ocean Pavilion.



Look at a seahorse. What are the parts that look like ears? What does it use its tail for?

fins, tail is used to grab onto grasses



Look at the moist skin of a tree frog. Why would it need to stay out of salt water? Hint: Think about what the salt would do to its moist skin.

salt would dry their skin



Look at the turtles in the Marsh Pavilion. How can you tell which species are swimmers?

webbed feet



Look at the birds in the aviary. The ancient ancestors of birds were reptiles. What do you see on a bird that looks like something on a reptile? (Hint: Look at birds' legs.)

scales



Look at the river otters. Sometimes they feed in rivers where the water is not clear. How can they find food on the bottom if they can't see it?

whiskers (stiff hair)

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