

WHO IS IT FOR?

- ◆ Young Scientists . . .
- ◆ Evolving Mathematicians . . .
- ◆ Emerging Linguists . . .
- ◆ Sprouting Historians . . .
- ◆ Budding Artists . . .

TARGETED LEVEL:
(Third Grade)

THE CHALLENGE:

The students will . . .

- ⇒ Identify the basic needs all living things require to live.
- ⇒ Identify adaptations living things use to survive.
- ⇒ Create a model of an aquatic insect habitat.

SAFETY ISSUES & CONCERNS:

* None

WHAT'CHA NEED?

Per student:

- 1 Dog/Fish sheet
- 1 sheet 9x11" drawing paper
- crayons, markers, colored pencils

Per class:

- Picture of dragonfly larva (provided)
- Picture of dragonfly adult
- Resource books

TIME NEEDED FOR THE ADVENTURE:

Minimum of 45 minutes.

Home:

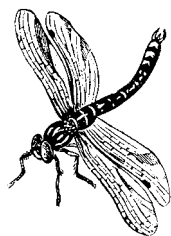


Where the Habitat is!

Pre-Visit Activity

All living things have basic needs, which must be met in order to survive. The objective of this lesson is to focus on the basic needs of food, water, air and shelter, for one very ordinary yet very fascinating dragonfly. This lesson will also help the students begin to recognize that the place where organisms find all of the things they need to survive is known as its habitat.

A dragonfly is an insect that has different stages in its life. A dragonfly larva is an immature or "baby" dragonfly. It lives its immature life completely in the water. When it is ready (usually several years later) the larva climbs out of the water and turns into an adult. This process is known as metamorphosis. The adult lives its life totally out of water. Because the dragonfly larva and the dragonfly adult look completely different some often think that they are two different insects. The truth is - though they look vastly different, they truly are one and the same insect.



Creatures that live on land, such as dogs, get their oxygen by breathing in air through their lungs. Organisms, that live underwater, such as a dragonfly larva, use special adaptations called gills to filter oxygen from the water. The oxygen that is in the water is called dissolved oxygen.

The concept of unseen oxygen being present in water is often difficult for students to understand. To help students visualize this concept you can provide a demonstration, using sugar and water. Pour the sugar into the water and continue to stir until the students can no longer see the crystals. Explain to the students that though the sugar cannot be seen in the water, it is still there, it has simply *dissolved* and become a part of the solution. Another way to demonstrate that there is air in water is by boiling water. The bubbles that form at the bottom of the container and rise to the top as it is heated are bubbles of air!



WORDS TO KNOW?

1. Habitat
2. Larva
3. Oxygen
4. Dissolved

DID YOU KNOW . . .

Some dragonfly larva spend 4 to 5 years in the water before turning into an adult?

EXTRA STUFF?

Related books/stories and on-line sources:
Caduto, Michael J., 1985, Pond and Brook: A Guide to Nature Study in Freshwater Environments. Prentice Hall, NJ.

Jennings, Terry, 1985, The Young Scientist Investigates Pond Life. Oxford University Press.

Reid, George K., 1987, A Golden Guide to Pond Life. Western Publishing Co.

TEKS CONNECTIONS:

Science TEKS - Third Grade:

3.8 (A) – Students will observe and describe the habitats of organisms within an ecosystem.

3.9 (A) – Students will identify characteristics among species that allow each to survive and reproduce.

3.3 (C) – Students will represent the natural world using models.

Denton ISD Science S.P.O. – Third Grade:

S5.2 The student will observe and describe the habitats of organisms within an ecosystem and how environmental changes affect organisms.

S6.2 The student will observe, identify and analyze how different characteristics help a species survive and reproduce.

PROCEDURES:

Ready, Set, Go . . .

1. Introduce or review the basic needs that all living things need to survive: food, water, air, and shelter. Using the examples of the dog and the fish on the provided sheet, discuss and draw a picture for each animal's needs. This can be done together as a class or individually and then checked together as a class.

This would be a good time to explain how underwater animals breathe.

Discussion of how this occurs or use of the demonstrations in the background information section may help students understand the process.

2. Show the picture of Doug the Dragonfly. "This is Doug the Dragonfly. Does he look like any dragonfly you have ever seen?" Introduce Doug as a **larva** explaining that this is a stage in Doug's life much like childhood. He is not yet an adult and will look very different when he grows up. (Show picture of adult dragonfly.) "Doug lives underwater in a pond. He needs your help to find out how to get the basic things he needs."
3. Draw a chart for the class showing the components of Doug's habitat: Food, Water, Air, and Shelter. Fill in how Doug meets each need during the discussion that follows.
4. "Draw a picture that shows where Doug can live and have all of the things he needs to survive. You may want to add other animals that would live in the water with Doug." (Examples: other types of aquatic insects, fish, or freshwater clams). Students may also want to show the terrestrial area or banks along the water and add other animals that would live there. (Examples: adult dragonflies, turtles, frogs, or salamanders). Books showing pond life may be helpful in giving students ideas. (See *Extra Stuff* to the left).

*"We are going to draw a picture showing a place where Doug can get all of the things he needs to live (**habitat**). What do we know about Doug? Do we now know that he lives underwater? This is where he gets his **water and air**. (You may want to state that Doug lives underwater and breathes like a fish.) He eats other insects that are smaller than him. (**food**) He hides under leaves, rocks and sticks that pile up in the water. He also likes to hide in between the leaves of plants that live in the water." (**shelter**)*

5. After students have completed their picture, you may want to have them write about all of the things they have drawn. They may do this by describing why each picture drawn in the picture helps Doug live *and/or* by filling in a chart listing the items in the picture that are needed in Doug's habitat.

Assessment:

Each picture should include representation of the basic components of the habitat: food, water, air and shelter.

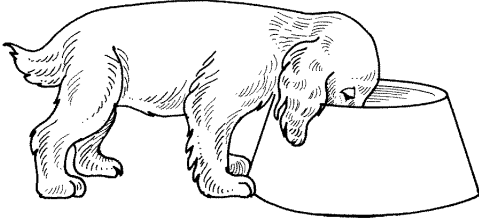
The Bottom Line: All living things require the essential, components of a habitat, in order to survive.

Home: Where The Habitat Is

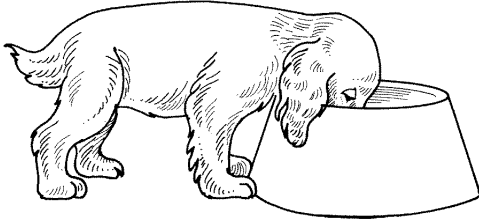
All living things need FOOD, WATER, AIR and SHELTER to survive. Draw how each of these animals gets each of these things.

DOG

FOOD:



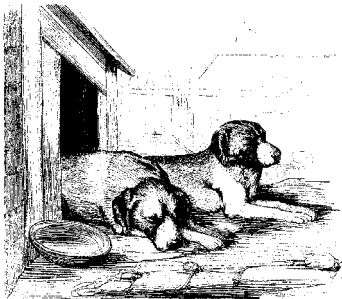
WATER:



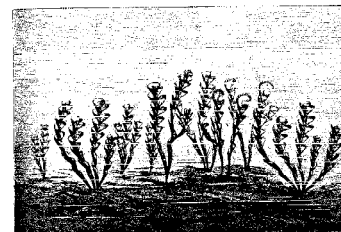
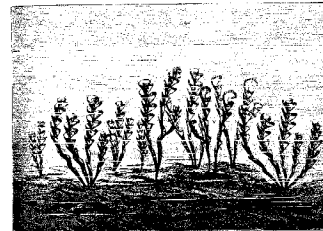
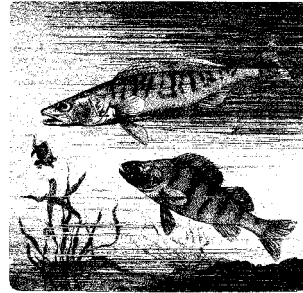
AIR:



SHELTER:



FISH



Home: Where The Habitat Is

All living things need FOOD, WATER, AIR and SHELTER to survive. Draw how each of these animals gets each of these things.

DOG

FISH

FOOD:

WATER:

AIR:

SHELTER: