

Student Instructions for Adding Animals to the Aquarium

1. Dip an inch or two of water from the holding tank into your clear plastic cup.
2. Use a spoon to scoop two snails out of the holding tank into your cup.
3. At the distribution center, catch two mosquito fish in the net. Turn the net inside out and touch it to the water in order to put the fish into your cup.



4. At your work area, use your hand lens to observe the animals in the cup. Notice their size, shape, and color. Watch how they move.

5. With your dropper, move some of the water from your own aquarium to the cup. Work slowly and carefully, adding the water a little at a time until the cup is about half full. This will help your creatures get used to the water in your aquarium before you put them into it.

6. Now pour the animals gently into your aquarium.

7. Use your hand lens again to observe your animals. Record your observations in Table 2. Make a new drawing of your aquarium to show how it looks today. Label everything in the drawing.

8. Observe your aquarium every day and make daily observation records in your science notebook.



Reading Selection

Mosquito Fish: Strong Little Fish

You may have seen guppies in aquaria before. But have you ever seen a **mosquito fish**? Mosquito fish look a lot like guppies. But in some ways, they are different.

Mosquito fish are strong little fish. They don't mind sudden changes or movements. They can survive a wide range of temperatures, from 4°C to 38°C (40°F to 100°F). And they can live in almost any body of fresh water—lakes, ponds, ditches, streams, and even mud holes. That's why they'll do so well in your ecocolumn.

Do you remember what *terra* meant? Think of the word “territory.” Mosquito fish are very **territorial**. They will fight off other types of fish in their tank. Remember this after the unit is over.

What's in a Name?

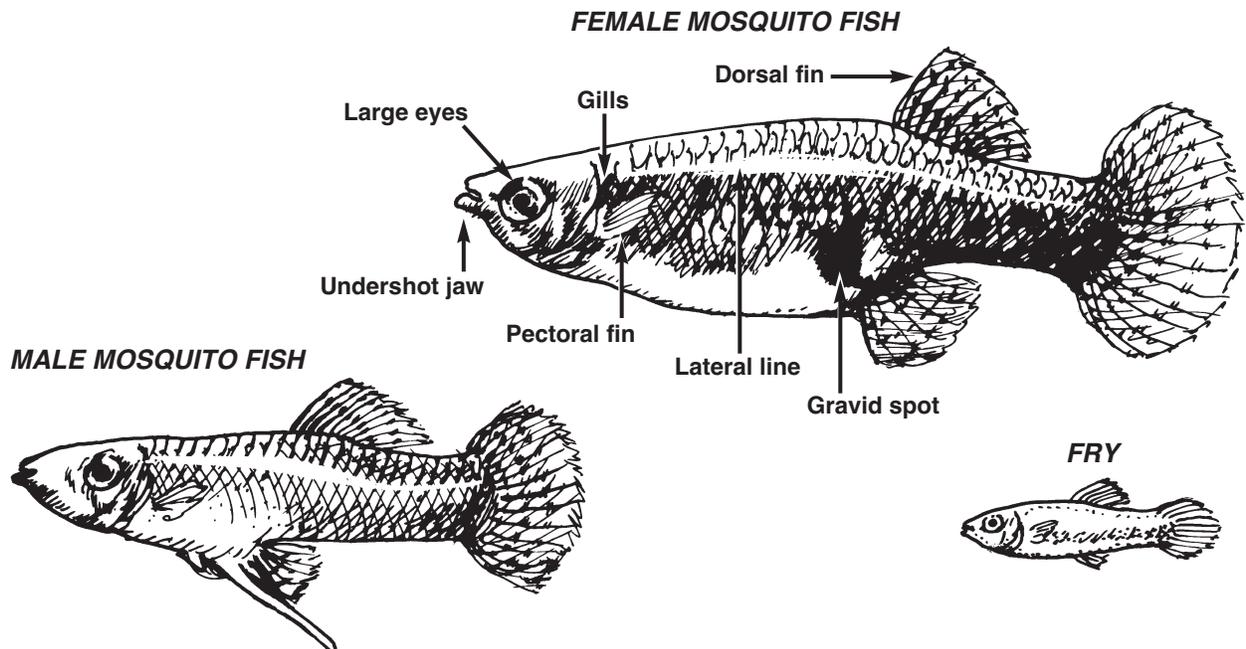
The scientific name of the mosquito fish is *Gambusia*. It lives along the southeastern coast of the United States, in places like North Carolina.

How do you think the mosquito fish got its name? Well, feeding these fish is no problem at all. They like live food—like elodea—the best. In lakes they will eat beetles. But they are most famous for feeding on mosquito **larvae**. This immature form of mosquito wriggles around in the water. Before the larvae become adult mosquitos and can fly away, the mosquito fish eat them. This helps lower the number of mosquitos in the air. Do you know why this is important?

It's important because mosquitos can carry diseases. With fewer mosquitos, there is less chance of spreading disease. No wonder this fish has been brought into more than 70 countries throughout the world!

Who's Who?

The mosquito fish in your aquarium will be either adult males, adult females, or immature **fry** (young mosquito fish). As you observe them, try to figure out which kinds you have.



Notice too, the characteristics all mosquito fish share:

- Their bodies are covered with protective scales that overlap like roof tiles or shingles. Use your hand lens to see them better.
- They have large round eyes and see very well.
- They have a dark line (called the **lateral line**) running the length of their bodies. The lateral line is made up of sensitive nerve endings that detect pressure in the water.
- Like all fish, they breathe by pumping water through their mouth and over their gills. How many times a minute does your fish breathe?

The adult male mosquito fish grows to a length of 3.5 cm (1½ in). He is usually a pale gray color. Sometimes he will have a faint blue color that looks like shiny metal when light hits it. His body is slim and his tail is round. The dorsal fin and tail often are marked with rows of tiny dark dots.

Females: Mosquito Fish or Guppy?

The female looks a little different from the male. She is much larger than the male and can grow up to 6 cm (2½ in) long. Like the male, she is a drab grayish blue color. But

she may have a black spot on the tail. Her fins and tail are rounded, and her body is plump. Like the male, her dorsal fin and tail may have rows of tiny dark dots. The dots in the tail are the only difference between the female mosquito fish and the female guppy. Otherwise they look alike.

When the female is pregnant, her abdomen becomes very swollen. A black spot, called the **gravid spot**, appears on each side of her body just above the rear fin. She may have as few as three fry. Or, she may have over 200 at one time (but that is very rare). An average number of fry is 40 to 50.

Small Fry Head for Cover

Mosquito fish are **live-bearers**. This means their fry are born alive and fully formed. They are less than 1 cm (¼ in) at birth. They resemble females in that they are rounded and dull colored, but they are more transparent.

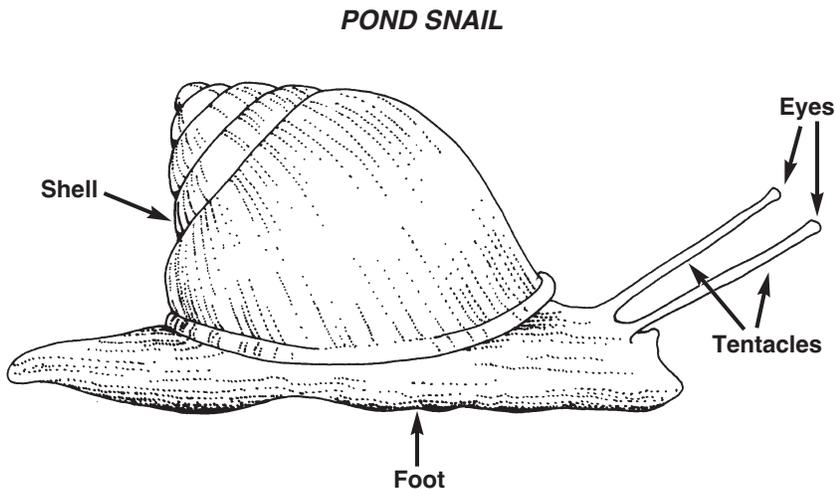
Can you think of a reason why dull coloring is an advantage for a baby fish? Like most live-bearers, mosquito fish like to eat their fry. To survive, the baby fish swim immediately to plants for protection (yet another reason why elodea is important to your aquarium). Then, they'll grow very quickly. Within a week or two they will be too large for their parents to swallow!

Reading Selection

Snails: A Head at the End of a Foot

Snails are found all over the globe. There are more than 1,500 kinds that live on land, 35,000 kinds in the sea, and 80,000 kinds in fresh water. Snails belong to a large class of animals called **gastropods**. This odd sounding name has an equally odd meaning: “stomach foot.”

Gastropods have certain features in common. For instance, most have a soft body protected by a shell. A part of the soft body that sticks out from the shell is called the “foot.” It is made mainly of muscles and helps the snail move. The snail’s foot also releases a thin film of mucus. The snail glides over this film.

**Like an Antenna**

The head (at the end of the foot!) has a set of tentacles with eyes. Snails can pull in these tentacles; you may be able to observe your snail moving them up and down, like a car radio antenna. The snail sees poorly. It can probably only tell the difference between light and dark. Snails are silent and cannot hear.

The snail’s mouth is on the underside of the head. Look for it when your snail glides along the side of the aquarium. The mouth is a small opening that opens and closes. Inside is a tongue called a **radula**. The radula has tiny teeth that file down the snail’s food into bits.

Looking for Baby Snails

Most snails reproduce by laying eggs. You may be lucky enough to find some in your own aquarium. Examine the plants and the sides of the aquarium. Do you see a small jellylike mass containing tiny, developing snails? Look carefully close to the water line. Use a hand lens to watch them grow inside the “jelly” for a week or two. Then they will simply walk out, little copies of their parents.

As the baby snail’s soft body grows, its outer shell does, too. The snail makes its own shell, much the same way you make your own fingernails. To do this, the snail needs calcium from the environment. (Why do you think it’s important for you to drink milk?) Inside the snail’s body, an organ called the **mantle** secretes the shell.

Pond snails are **scavengers**.

They eat the soft tissues of dead plants and animals. You might call them the “cleanup crew” of their environment. Pond snails also will eat algae and live plants. In turn, snails are food for fish, turtles, ducks, large insects, and mammals.

Record Sheet 4-A

Name: _____

Date: _____

Aquarium Observations

Record today’s observations of your aquarium. Use a hand lens to observe closely. Then, record what you see as accurately and completely as you can.

1. Record observations on your aquarium plants and algae below. Note any changes that have occurred since the last time you observed.

Table 1

| | Observations | What Has Changed? |
|----------|---------------------|--------------------------|
| Elodea | | |
| Duckweed | | |
| Algae | | |

Record Sheet 4-A

Name: _____

Aquarium Observations *(continued)*

2. Record observations of your animals.

Table 2

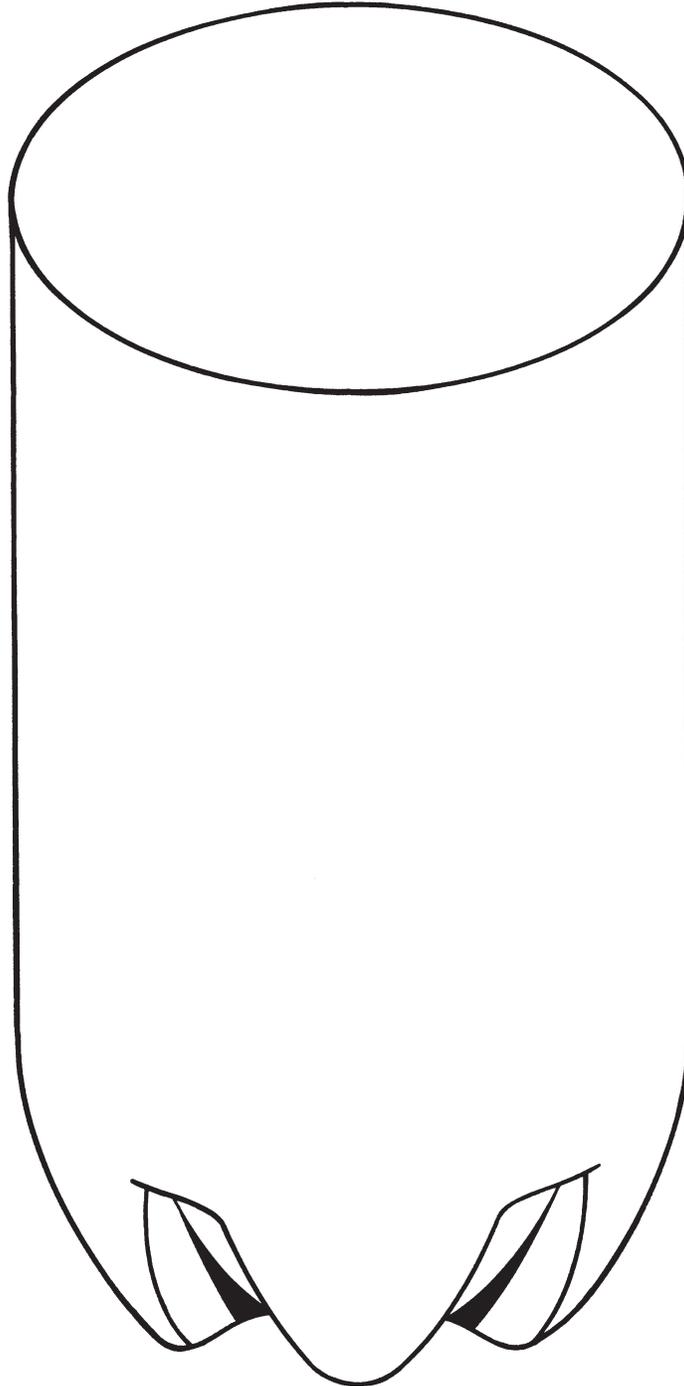
| | Snails | Mosquito Fish |
|--------|---------------|----------------------|
| Size | | |
| Number | | |
| Color | | |
| Motion | | |
| Shape | | |
| Other | | |

Record Sheet 4-A

Name: _____

Aquarium Observations *(continued)*

3. In the space below, draw and label your aquarium and everything in it.



4. Observe your aquarium every day. Place your daily observations in your science notebook.