

## **Biomes Marine Biology Center**

### **Yearlong Aquarium Program**

This program gives your school a marine life aquarium for the entire school year. We provide all of the equipment, food and animals for your tank and will visit your school approximately every three weeks to add new animals, restock your food supply and do routine maintenance on your tank.

All of the animals you will have are native to and collected in Narragansett Bay. We will decide which species are included based on hardiness and compatibility. We will also supply you with a set of information cards which include a picture and facts about each animal.

We try to have all tanks installed and running by October first of each year. Because your initial group of animals will be wild caught we cannot start tanks later in the year. The aquarium will be taken down and the animals returned to the Biomes Center at the end of the school year.

Below are some guidelines and hints to make the most of this program.

#### **About Your Aquarium:**

Your tank is a 40 gallon glass aquarium. It will come with a full plastic hood and fluorescent light. The water is made at our center out of artificial sea salt mixed with tap water.

#### **Before we arrive:**

There are a few important things you should have ready on the day we come in to install your aquarium. Please have these things ready before we arrive so that the animals can be introduced to the tank as soon as possible.

1. You should have a sturdy table or countertop that will hold a 40 gallon "long" aquarium. These tanks measure 48" x 12" x 16". Keep in mind that this tank, once filled with gravel and water, will weigh approximately 455 pounds and the table should be rated to hold this weight. You may wish to cover the table with a large sheet or tablecloth to protect the table and make the display more visually pleasing. Keep in mind that once the tank is filled with water it cannot be moved again.

2. We will need a plastic electrical strip to plug in the lights and filters and this needs to be provided by your school. The location of the tank should be near a grounded (preferably GFI) outlet to avoid having cords exposed that could be tripped over.

3. Because we use fish local to our waters, the tank should be placed away from heat sources such as radiators or south-facing windows. Being away from natural light will also reduce the amount of algae that will grow on the glass and decor.

4. You will be feeding your animals frozen food so a freezer, or a refrigerator with a freezer compartment, should be available. We will supply the food in individual two-ounce jars with screw caps. These jars will be placed in a covered plastic bin (about the size of a shoe box). There is no risk of contaminating anything else kept in the same freezer, so a teacher's room or cafeteria freezer is fine to use to store the food.

#### **When we arrive:**

On the day we arrive we will have everything we need to set up your tank, including the tank, gravel and decor (shells, plastic plants, etc.), filters, pails of pre made sea water, jars of frozen food and your first set of animals. If someone is available to help us carry these items into the school, it would be very helpful.

#### **Your responsibilities:**

We try to make the care of these animals as simple as possible so that you and your students can enjoy and learn from them with as little maintenance on your part as possible. However, there are a few very important things that must be done each day. It is probably best to get a responsible volunteer to do these, as well as a second person to cover when the volunteer is absent. If these animals are cared for properly during school days they will remain healthy enough to get through weekends without being fed.

1. Lights. The lights can remain on throughout the school day so that the tank may be enjoyed by all students and staff. They must be turned off at night and over weekends. This is very important since leaving the lights on all night will result in rapid algae growth in the tank. This algae is not harmful to the fish, but it will make the tank look unappealing and "dirty".

The lights are turned on and off simply by clicking on the push-button behind the reflector.

2. Feeding. Again, it is extremely important that this be done every school day, especially considering they most likely will not be fed on weekends and during holidays. You will feed one, and only one, jar of food each school day. More details on feeding will be described below.

### **Animal identification cards.**

Each time we introduce a new species to your tank we will supply you with an animal id card for that species. These laminated cards will be kept together in a metal ring and should be left near the tank for anyone to use.

Each card has a picture of the animal and some basic information such as size, protective methods, feeding behaviors and habitats they are found in. More information about these animals can be found in the “Our Animals” section of [www.biomescenter.com](http://www.biomescenter.com).

### **Cleaning the glass**

Although we will clean the inside and outside of your tank when we visit, you may wish to periodically clean the outside glass of fingerprints. Use a paper towel and glass cleaner. To be sure no cleaner gets into the water, spray the paper towel first instead of the glass.

### **Deaths**

Although we do our best to keep all the animals healthy, some losses will inevitably occur. We have supplied you with a green, long-handled net to remove any animal that dies. It is very important to remove any dead animals as they will pollute the tank. Simply wrap the fish in paper towels and throw it away. Your animals are small enough that you will not have to worry about any smell once they are thrown away.

### **Filters**

The aquarium filters we use are vital to removing wastes and toxins produced by fish, as well as oxygenating the water. Without the filters the water will become stagnant and unable to support life. We use multiple filters so that if one stops working the others will keep the animals alive until it can be fixed or replaced. If you notice a filter is not working, please call us so we can be prepared to fix or replace it on our next visit.

Most aquarium filters are powered by a motor that spins a magnetic impeller. This impeller is what pumps the water into the filter. Occasionally this impeller will become stuck, especially if your building has lost power for any length of time. The impeller can usually be fixed by simply tapping on the filter. If this doesn't work you should call us so we can bring a replacement as they do wear out eventually.

## **Feeding**

As stated above, this is perhaps the most important thing you'll need to do to keep the animals healthy. Unlike tropical freshwater fish, most saltwater animals will not eat goldfish flakes. They need a variety of frozen foods such as shrimp, chopped clam, chopped squid, etc. These need to be kept frozen until just before you feed them each day.

We will prepare the food ahead of time and keep them in individual and sealed glass jars. There will be enough jars to sustain your tank until our next visit. If for some reason you do run out of food before we come in to maintain your tank please call us.

The procedure for feeding is very simple. Each day remove one jar of food from the freezer. Remove the top and add a small amount of tank water by dipping the jar into the aquarium. The food will thaw in a couple of minutes. Once it is thawed pour the contents into the tank. You should add all the food at once rather than pouring in a little at a time. This will give all the fish a chance to get some rather than a couple of the most aggressive feeders getting the majority of it.

It is important that the food does not stay thawed for more than several minutes. If the food warms up it will quickly spoil and will not be eaten by the fish and will build up and pollute the tank. (It is a myth that scavengers will eat spoiled food. Even crabs will not touch food that has gone bad.)

## **Storing the used jars**

After each feeding rinse the jar well by swishing tank water into it and pouring it back in to be sure all the food is used. You may place the empty jars back into the freezer container. We prefer that all jars, both full and empty, are stored in the container we supply for the jars.

## **Weekends and Holidays**

As long as the fish are healthy they will survive fine even over a long three day weekend. If a holiday lasts more than three days someone should be assigned to feed the animals at least every other day.

One way of helping the fish get through the feeding break is to put the food in the tank late in the day on Friday and then first thing in the morning on the day you return. Do not double-feed! Feeding the fish extra jars will not help them get through the weekend. The extra food will not be eaten and will spoil and pollute the tank.

It is very important that the lights be shut off during weekends and holidays. As a rule, if students aren't in the building the lights should not be on.

## **Adding your own animals**

Please do not do this. We have selected the animals based on what the tank can hold and how the species interact with (ie: not eat) each other.

On the other hand, no animals should be removed from the tank either (unless of course it has died). Many of the animals we will give you do not respond well to handling. When doing lessons for your students have the class come to the animals rather than bringing the animals into the classroom.

## **Algae**

Algae is a natural part of the marine ecosystem and it will grow in your tank. Usually this will show up as a red, green or brown "film" coating the glass, shells and gravel. We will remove most of this when we visit, although a little bit of algae is actually beneficial to the aquarium so you should not be concerned about a little of it left here and there. In fact, we will often allow the algae to grow on the back glass where it doesn't interfere with viewing the animals.

If you notice excessive algae growth, or visitors describe the tank as looking "dirty", this is because the tank is either getting too much sunlight from the windows or the light has been left on. Once the algae takes hold it is very hard to get rid of it. For example, a light left on over an entire weekend will cause the algae to grow very quickly. Even after being cleaned and the light shut off regularly again, the algae will still grow back

just as quickly. The best thing to do in this case is to leave the light off for several days until the algae dies back. (Having the light off for long periods will not harm the fish).

### **When we visit**

During our visits we will do routine tank maintenance so that you don't have to. This includes changing some of the water, cleaning and inspecting the filters, cleaning the glass and decor of algae and removing salt residue from the hood.

We will also replace the food jars. Please have the empty jars accessible so we can remove the old ones and add the new ones to the freezer. We will be able to tell by how many jars are used up since the last visit whether or not the feeding is being done correctly. We may ask to speak to the contact person at your school to make sure whoever is in charge of feeding is doing it regularly. (Forgetting to feed the fish is the main cause of losses to the tank).

During some of the visits we will add new fish or replace any that have died. Whenever adding a new fish we will also add a new ID card.

### **Questions**

If you have any questions or problems you can contact Mark or Rebecca at (401) 295-4690 or by e-mail at [Mark@biomescenter.com](mailto:Mark@biomescenter.com).

### **Payment**

The price of this program is found in the "School Programs" section of this web site. We will bring an invoice with us when we set up the aquarium and payment should be made on that day or mailed net 30 days.