

## Setting Up a Fish Aquarium

### Basic steps for setting up a fish aquarium.

*By David A. Lass*

A beautiful aquarium can make a wonderful addition to any home. Schools of fish gracefully moving in a densely planted freshwater tank can be relaxing, interesting and attractive. An aquarium, however, can also be a potential disaster waiting to happen.

Aquariums may contain many gallons (weighing many pounds) of water and decorations, not to mention fish, all confined by mere glass and silicone. They can break, be knocked over or both. And all that water is often in close proximity to electricity that is powering pumps and heaters, often in the form of multi-plug extension cords.

There's no getting around the fact that you have to be very careful setting up and operating an aquarium in your home. If you follow a few simple rules - and common sense - you should not have any problems.

Much of what I say here may seem obvious, but this is all information that bears repeating. I hope you will take time to think about making your aquarium as safe as possible. Although what I'm going to say applies to all tanks, in general we are talking about larger display tanks that hobbyists have in their living areas.

#### The Aquarium and Stand

A tremendous amount of thought, engineering and experience have gone into the development of the tanks we now use, both those made of glass and acrylic. All aquariums today come with warranties, and they virtually never leak. The very rare instance of a leaker will always show up immediately upon filling the tank with water. The better tanks come tested for leakage before they are sold, so the chances of getting a leaker are infinitesimal. If a tank holds water when first filled, it will hold water for a very long time. Very cautious hobbyists may initially fill the tank in an area that will not sustain any damage should there be a leak (such as a garage, backyard, etc.).

When it comes to stands, I have a very simple recommendation: Buy one from your local fish store. Don't try to make one yourself, unless you are an expert carpenter or metalworker. There are all kinds of stands and cabinets made specifically for aquariums, and they have been tested and serve their purpose well. The weight of the tank and fixtures must be supported by a well-designed, sturdy stand. Also, cabinet stands are designed to serve a storage function as well as treat your aquarium more like a piece of furniture. Please, buy one - don't make one.

#### Tank Placement

An aquarium on a stand and filled with water and gravel weighs at least 10 pounds per gallon and as much as 12 to 15 pounds per gallon. So, that 55-gallon tank you have a perfect place for in your living room will weigh 550 to 825 pounds. This means you have to make sure that the place on the floor where you put the tank can support that amount of weight. If the tank will be set on a poured concrete floor, there is no problem. If the floor is wooden, however, think carefully before finalizing the tank's location. If you have any questions, talk to someone in your town's building department, or have an engineer or builder look at it for you.

In a home with typical wood frame construction, you are generally better off putting your aquarium against an outside or other load-bearing wall where you know there is plenty of support. Placing a tank in the middle of a room is somewhat risky, unless you can get underneath the space (such as a first floor with an unfinished basement below) and shore it up, if needed.

Another thing to consider is the stability of the tank and stand. Here again, it is safer to place the tank against a wall. Avoid having the tank where someone could lean against it, bump into it or otherwise send it crashing to the floor.

Finally, make sure the tank does not receive direct sunlight. This is for aesthetics more than for safety, because if an aquarium gets any direct sunlight, the water will, sooner or later, turn green from algae. Avoid placing the tank in an area where it receives even partial sun, even if it is only for a few hours a day. I have a 65-gallon tank that is 15 feet away from a big picture window that faces west, and the afternoon sun is enough to turn the tank's water into pea soup if I don't run an ultraviolet sterilizer on it.

#### Viewing

Give a lot of thought as to how the tank will be viewed. After all, the main purpose for having an aquarium is to be able to enjoy it and its inhabitants. Consider viewing the tank from a distance and close-up. A beautiful large aquarium can be the focal point of any room, so make sure this is what you want. You may prefer the tank to be less conspicuous and not dominate a room, rather than be a focal point or centerpiece.

For close-up viewing of the fish and the tank, you want seating close to the tank. I also suggest making some special provision for places where children can sit and safely view the tank up close. If you cannot include places that are close enough, you may want to think about having a few pieces of small, movable seating that folks can pull up to the aquarium. It is frustrating having to bend over, kneel or squat in front of a tank for longer than a few seconds (especially if you're as old as I am).

#### Electrical Supply

Unless you want an unheated, unfiltered, unlit aquarium, you will need electricity for the tank. Depending on the kind of setup you have, you may need a lot of electricity. For your basic freshwater tank, you may only require a filter (power, canister, or an air pump and box filter), heater and simple light. This can usually be provided from an existing outlet using a multiple plug strip, if needed. If, however, you are considering a marine reef tank with pumps, filters and protein skimmers, you will need much more electrical power. The lighting for a reef tank will probably draw more watts than all the regular lights in that room. We are talking many hundreds of watts of metal halide and/or fluorescent lights, and all those lights make a lot of heat, so you will probably want a chiller of some sort to keep the temperature low enough for the fish and invertebrates to be at their best. By the time you're done wiring it, a reef tank could require its own dedicated electrical circuit.

Regardless of how modest or extensive your electrical setup is, be sure to provide all electrical equipment with a ground fault interrupter (GFI) circuit. This is a super-sensitive circuit breaker that cuts off the power in the event of any fault to ground, such as may occur due to some water on your hand coming into contact with an outlet, a malfunctioning heater inside the tank or potential electrical mishaps.

The GFI can be a breaker at the electric box for the circuit your tank will be on (they are required by code now for kitchens and bathrooms), or it can be a GFI wall receptacle that you plug everything into. It can also be an extension cord with multiple receptacles that has a GFI breaker on it. Whichever way you choose, please include GFI protection. It is inexpensive and absolutely necessary for your safety.

#### Equipment

Because a display aquarium will be an eye-catching focal point (as opposed to breeding or rearing tanks that are more utilitarian), you will want to think beforehand about the equipment required for the tank and how to make it as inconspicuous as possible.

The easiest way is to buy a tank/stand/ light assembly that includes space beneath the tank for a sump, with the tank drilled for overflow and return lines. Almost all top-of-the-line manufacturers offer a wide choice of setups like this. Having a sump allows you to locate the heater, filters and pumps in a cabinet beneath the tank, out of the way and where they can be serviced easily, while not detracting from the beauty of the tank itself.

If you prefer not to spring for a complete tank/light/cabinet with sump setup, you can still minimize the visual impact of the equipment. There are a number of excellent fully submersible heaters that can be hidden behind rockwork; snake the cord up the inside corner of the tank, where it will be less noticeable. They even make little suction cups that can keep the wires in place. Filtration can be done with a canister filter that sits outside or under the tank. The intake and return tubes can be inconspicuous at the top or side of the tank. With a little thought and some help from your friendly local fish store, you can have the equipment necessary to keep the fish healthy, while not detracting from the beauty of the tank.

#### Ease Of Maintenance

You should concern yourself with both tank and equipment maintenance. Being able to access the aquarium, filter(s) and so on will remove one obstacle to doing regular maintenance chores.

The two most important things, in terms of maintenance, are feeding and weekly water changes. Because you will want to give your fish a variety of foods, you need space to store cans and pouches. Do not store food inside the hood, where the lights make the temperature very high, which in turn will cause the nutrient value of the food to deteriorate quickly. Keep the food under the tank or someplace separate that is not too warm.

For doing water changes, you will need at least a siphon hose and bucket if you are going to carry water to and from the tank; or you will need room for a long hose setup like a Python to run from the tank to a water/drain source. The best



place to keep the siphon, as well as a net, test kits and other fishy paraphernalia, is in the cabinet under the tank, or near it.

Fish tanks are beautiful and interesting additions to the decor of any living space. There are many things to consider, such as placement of the tank or making sure the electrical supply is correct. However, with a little planning and forethought, you can avoid future problems, and your aquarium will provide you, your family and your friends with many pleasant hours of enjoyment.