

Water temperature

Although aquatic organisms can tolerate the gradual increase in water temperature, their development and resistance to diseases is more favorable when optimum heat is provided.

Fish usually can endure temperature fluctuations of 0.5-1 C° for 24 hours.

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- Although coldwater fish are tolerated to a maximum of 22 degrees Celsius, tropical fish live between 24-28 C° and are stressed when the temperature falls below 20C°.
 - Thermostatic heating systems are needed in tropical fish that should be lived in a specific temperature range.
 - Heating systems should be in places that are inaccessible to prevent damage to the fish or system, and the glass part should be kept in a protected manner.
 - In cold water fish, water temperature should be kept between 20-22 C° in summer. When these degrees are exceeded, the ice cubes are placed in the aquarium in the nylon bags and the aquarium can be cooled. Cooling systems can also be used in summer months for these aquariums.

Lighting

- **The creatures and plants in the aquarium need light and darkness at regular intervals. Lighting should not be done by placing the aquarium in a place that takes sunlight because the water temperature cannot be controlled and algae formation cannot be avoided in this situation.**
- **In aquariums, artificial light sources should be used. Normal bulbs cannot be used due to excessive heat.**
- **Most suitable are fluorescent and HQI lamps. 10 hours of lighting 14 hours of darkness is ideal for the prevention of algae formation in aquariums.**

Lamps known as HQI are mercury vapor metal halogen lamps.

T8 Fluorescent lamps are 26 mm in diameter. T5 fluorescent is only 16 mm in diameter.

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- **In order to adapt the fish to the light and darkness environment, it has to be turned on or turned off the room light before touching on the aquarium light . It is important for the fish not to be disturbed by the light.**
 - **Application of ultraviolet lamps for a few hours in marine aquariums is important for the treatment of turbidity and some skin diseases in fish.**
 - **The service life of lamps is still limited to one year. Any type of lamp must be replaced with a new one after one year.**

T5 lamps are suitable for aquariums up to 75 cm in height. T5 Fluorescents must be arranged to illuminate the entire aquarium. HQI lamps provide spot lighting unlike T5 lamps.

Aquarium size: 100 cm length: 1 HQI lighting

Aquarium size: 120 cm length: 1 - 2 HQI lighting

Aquarium size: 150 cm length: 2 - 3 HQI lighting

Aquarium size: 160 cm length: 3 HQI lighting

Aquarium size: 200 cm length: 3 HQI lighting

For a good light, only the light source is not important. It is also very important to use Reflector at the same time. Tests have shown that the use of a good reflector increases the efficiency. This can result in an increase of up to 3 times depending on the reflector used.

The HQI lamp in the middle and the T8 use as additional light along the front and back.

SET UP AN AQUARIUM

1 Choose a fish tank.

- A 210 L tank is a standard size that will be allowed to have a variety of fish for beginners
- It could be also gone with 75 or 95 L tank for a starter tank and keep just a few hardy fish (Mollies, guppies, platys, tetra, small cory cats and no cichlids to see if you like the hobby.
- It is not recommended to start out with anything less than 40L. It is actually harder to maintain good water quality in a small tank.

2 Get an aquarium stand.

It has to be made sure that the stand is either rated for the size of tank or that it has been custom built to be very sturdy. It is vital to the integrity of the tank it will hold that it be sturdy enough to hold the tank's weight. In addition, it is not safe to have an edge of the tank sticking out over the side.

It has to be made sure that the choosing equipment is rated for the size of tank.

3 Decide where to put the aquarium and stand.

Choosing the right spot is important for the health of fishes. It has to be placed in a space where the temperature remains pretty consistent and the amount of light doesn't get overpowering.

Allow at least 15 cm between the wall. Too much sunlight will cause excessive algae growth.

Choose a location **near an outlet**, and keep in mind how far you will have to haul water for weekly tank maintenance! Set up your tank stand ideally **on a wooden floor, not a rug or carpet.**

4. Decide which filtration system you would like to use.

The most common and easiest are either under-gravel filters or power filters that hang on the back of the tank. (recommended for first-time owners over **under-gravel filters**)

If it is choosed an under-gravel filter, it has to be made sure that the air pump or powerhead must be strong enough for the size of the tank. In this case, bigger is better. It doesnt be used an under-gravel filter, if it is planed on having sand or other fine substrates.

If it is decided to go with a power filter, it has to be selected one that will circulate enough water for the size of tank. (Ideally, it should filter water 5 or more times per hour, depending on tank capacity.

5. Fill the bottom with gravel. Having about 5 to 8 cm of gravel on the bottom is essential to a healthy aquarium and helps fish keep their orientation in the water.

Sand is optimal for fish and invertebrates that like to burrow but it needs to be stirred on a regular basis to prevent dead spots that can wreak havoc on your tank or ruin a filter. Beginners are better off using gravel.

Wash gravel through and through. Make sure to use no soap - it is very harmful to fish and will kill them.

6. Set up chosen plants and decorations.

It has to be arranged them how it is liked at this point because once the water and fish are in the tank, it must be as little stress as possible—and that means no hands in the tank.

7. Adding Water and Heat

Once sure that all the decorations are just the way wishing, the tank can be filled up to just under the rim of the tank, leaving a gap of 2.5 cm.

The reservoir of the filter is filled with water, and plugged it in! Water should smoothly (and quietly) circulate after a couple of minutes. If it is bought an under-gravel filter, water should start moving vertically in the lift tube(s).

Install the heater on the inside of the tank. It will attach with suction cups. Try to position it near or at the mouth of the filter expelling water. This way the water will be evenly heated. Remember to turn on the heater only after water is added to the tank. Give the heater time to adjust the temperature before cycling the tank.

8. Add water dechlorinator.

Tap water contains chlorine and other chemicals that will kill fish, so it's necessary to add a **neutralizer** unless using distilled water off the bat. Add the dechlorinator according to the instructions on **the bottle**. This is also the time to add a starting dose of SafeStart or another bacterial catalyst which will speed up the growth of good bacteria.

Cycle the tank, preferably for at least a few weeks. For instructions on the fishless cycle (the most humane way to grow the beneficial bacteria all tanks need) During the cycle, need to monitor the water parameters (pH, High pH, Ammonia, Nitrite, and Nitrate). When the numbers for Am., Nitrite, and then Nitrate spike and lower to 0, it is completed initial Nitrogen Cycle and fish can be added in the water.

9. Choose fish. Discuss what type of freshwater, tropical fish you want to have with the salesperson. They should give you tips on which types can and can't get along, and so forth. **Look for a locally-owned fish store in the area, since they tend to provide the most accurate information and high-quality fish.** Quality pet stores usually have compatibility charts for freshwater and saltwater fish.

Transport the fish home safely. The salesperson will have filled a plastic clear bag with water, then fish, then blow it up with oxygen. Go straight home. The fish can only survive on the water and oxygen they've been given for maybe 2 1/2 hours.

After the pet store worker catches your fish, bring the fish home and set the bag in your tank. Let it sit there for about 20 or 30 minutes. Then open the bag and let some of the water from the tank in. Be sure to not let any water from the bag into the tank!. Gently net the fish out and pour all the pet store's water in the sink. The reason you do not want to add pet store water into your tank is that the store water may contain unwanted contaminants like parasites, fungus, or freshwater snails.

10. Introduce the fish to your aquarium. **Start with two or three fish the first ten days, then get two or three more,** wait another ten days, etc. If you put too many fish at once into a new tank, the water will not be able to adequately cycle, and will quickly turn toxic.