

## Keeping Coldwater Fish in Aquariums

### WHY CHOOSE AN AQUARIUM AND NOT A BOWL?

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Ask many people what springs to mind when you say the word 'goldfish' and they will probably associate them with round bowls, a sprinkling of gravel, a garish ornament, and the odd bit of "weed". In many cases there would be no filtration or aeration and every couple of weeks, the unfortunate fish would be taken from the bowl, put into a bucket, while the water is discarded from the bowl and replaced with unconditioned tap water. In the time between these water changes, the goldfish would be seen at the surface gasping for air. This poor unfortunate goldfish, living in its unfiltered and un-aerated bowl (which no doubt is far too small) is in a permanently stressed state, and unsurprisingly will only survive for a few months (and "survive" in this instance does not mean "lives happily"). This is incredibly cruel, and is unacceptable in this day and age. The lifespan of the common goldfish should be around 25 years, by which time it should have grown over 30cm (1 ft) in length.

### SETTING UP AN AQUARIUM FOR COLDWATER FISH:

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It is best to opt for the largest tank that you can accommodate and afford as goldfish grow quickly and require lots of swimming space. One of the most common regrets many fish keepers make is not choosing a big enough tank to start with, as invariably goldfish will quickly outgrow many small 'starter tanks'. It is also best to invest in a purpose built stand or cabinet for your fish tank as once it is filled with water and decor, it will become very heavy and most items of household furniture are not designed to take such a load. Stands cabinets also raise the aquarium to a good height for children to view the fish, without them damaging the glass. The aquarium should not be placed in hallways and other sites adjacent to doors as they are draughty have a frequent passage of people walking past, and doors slamming nearby will cause unnecessary stress to the fish. The tank should be kept away from areas close to windows or a conservatory as the sunlight will cause problem algae growth in the tank and you may encounter excessive temperature fluctuations. Many children request that their pet goldfish's tank be sited in their bedroom - this is not always a good idea as the filter must be kept running 24 hours a day and this can create a bit of background noise which may keep the child awake at night. People are then tempted to either set up the tank with no filter or to turn the filter off at night - this is totally unacceptable as water quality will deteriorate.

Once you have found the right position for your tank, now is the time to attach a piece of background to the outside back glass of the tank. Background makes the fish feel more secure and also prevents you from seeing your wallpaper through the back of the tank! It will be difficult to attach the background once the tank is filled, so now is the best opportunity to do this. You will then need to add your chosen substrate. This is available in the form of aquatic grade gravel or sand, and there are many types and colours available to choose from. However, 'standard' aquatic gravel or sand are the best choices as they do not reflect bright unnatural colours, and therefore may make the fish feel more secure. Bear in mind that aquatic gravel/sand can be very dusty, and therefore should be rinsed thoroughly in clean tap water before being placed in the tank.

The filter is an extremely important piece of equipment that will support beneficial bacteria. It is this bacteria which break down the waste that fish produce and turn it into less harmful substances. If the filter (and bacteria) were not present, the fish would be swimming around in their own toxic waste and suffering. We would normally recommend the use of either an internal power filter which sits inside the tank, and for larger (and messier) aquariums, an external canister filter which sits outside the tank. Internal filters operate inside the aquarium, and are available in various sizes to suit different tank sizes. Water is drawn through a foam sponge cartridge by means of a small pump situated inside the filter. Bacteria colonise on this sponge and break down the waste produced by the fish. The filter should be sited just below the water level so that when the water is pumped back into the aquarium, this causes a 'ripple' effect at the surface. This ripple oxygenates the water, making the goldfish feel a lot more comfortable. An additional air pump can be used to help aerate the water, although if the filter outlet is correctly positioned, this is more of a decorative feature. The foam sponge cartridge should always be cleaned in mature water taken from the aquarium during a water change (we recommend a 20% change every fortnight). NEVER rinse the sponges in tap water - the chlorine and chloramine (bactericides in tap water) will kill all of the beneficial bacteria and will lead to huge water quality problems. Sponges should only be replaced if they lose their shape (give them a squeeze and they should spring back into shape). But do remember, only replace one sponge at a time, or in the case of small filters which only contain one sponge - cut the sponge in half and replace half at a time. This way you will not lose all the beneficial bacteria.

Decor such as rocks or bogwood should be placed in the aquarium prior to filling with water so that the tank does not overflow (note: bogwood should firstly be soaked in a separate container of water for a few days before adding to the aquarium to avoid tannins discolouring the water). Plastic plants can also be added at this stage, but if you intend to keep real plants, wait until the tank has been partially filled. Varieties such as *Elodea densa* and *Cabomba caroliniana* tend to do best in cooler water, although bear in mind that goldfish may nibble them as they like some green food in their diet. Most tanks come with a hood and lighting already installed. The lights should be on for 9-10 hours a day. This is natural for your fish and lighting left on for periods longer than this will probably result in nuisance algae.

Once the tank has been filled and a de-chlorinator added, the filter can be switched on and you should allow the tank to run for at least a week before adding any goldfish. We would recommend that you test your aquarium water after the tank has been up and running for a week, to ensure that it is ready for your first fish. Patience is of the utmost importance here - it is unfair on the fish to try and introduce them to the tank if it is not quite ready for them; you will end up losing them, something which can be completely avoided, not to mention the fact that you could also become very disheartened very early on. The water quality can be monitored by use of ammonia and nitrite test kits that can be purchased in-store, and some branches may even offer a water-testing service for a small fee (please ring ahead to check). If your aquarium water is ready, we would advise stocking the tank very slowly to avoid filter overload - one or two fish to start with, then if there is no deterioration in water quality after 2 weeks, then you can add another one or two fish.

With regards to acclimatising your new fish to their tank, this must be done carefully, as the shop's water chemistry may differ slightly to that of your own aquarium. You should turn the aquarium lights off, and float the bag on the surface of the water for 15 minutes to allow the temperature of the water in the bag to adjust to that of your aquarium. After this time, you should undo the bag, and roll the sides down slightly, so that the bag still stays afloat. Every 10 minutes, gently add a cupful of your tank water to the bag, so that the overall process takes around 40 minutes. Then, turn the bag gently onto its side, and allow the fish to swim out in their own time. Tempting though it may be to switch the aquarium lights back on, you should leave the lights off for a few hours to allow the fish to adjust to their new surroundings.

It is advisable to feed sparingly, especially in the early stages of stocking your tank (e.g. a very small amount every other day), in order to prevent pollution of the tank.

Manufacturers will probably state 'feed 2 or 3 times a day' on their food containers, but this may do more harm than good in a newly set-up aquarium. The bacteria in the filter will take weeks to colonise the sponge, therefore the less waste there is, the better equipped the filter will be to cope with breaking down this waste. You must make sure that you remove any uneaten food immediately. Once the tank is more mature, and when you are confident about monitoring your water quality with the use of test kits, you may be able to feed your goldfish with small amounts of food once or twice a day. You should vary this between flake foods, sinking pellet foods, and frozen foods such as bloodworm, which can aid their digestive system.

As mentioned previously, a 20% water change should be carried out fortnightly. If you have a gravel substrate this is best achieved by use of a 'gravel cleaner' (siphon) which will agitate the gravel and remove some of the waste products trapped between the gravel at the same time as removing some water from the tank. If you have a sand substrate, gravel cleaners cannot be used, and you will need to siphon the water out using a length of hose. This is also a good time to look in your filter and rinse the sponges in the water removed from the aquarium. The impellor which drives the motor of the filter should be taken out and cleaned every couple of months to remove the build up of lime scale and gunge which could stop it from working. A de-chlorinator must be added to the replacement tap water prior to adding it to the tank, as chlorine will harm the goldfish as well as the bacteria in the sponge. After a few weeks you may notice some algae build up on the glass, you can remove this as necessary with an algae removing pad.

It is worth noting that we do not recommend keeping 'fancy goldfish' (that is goldfish varieties with a 'fantail') with the common goldfish (single tailed) as the fancy varieties are slower swimmers and are generally out-competed for food when common goldfish are present. Therefore before you purchase your tank, you should decide whether you would like to keep common goldfish with other single tailed varieties such as shubunkins or sarasa comets, or maybe you'd prefer to keep several fancy goldfish (e.g. orandas, ryukin, pearl scales, moors, ranchu, lion heads etc) together.