



FLUVAL

AQUARIUM CARE GUIDE

Includes simple
STEP-BY-STEP
INSTRUCTIONS
on how to set up a
new aquarium and keep
it looking great

FLUVAL
NUTRAFIN

GLO

MARINA

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Keeping fish is a relaxing and absorbing hobby and a source of endless fascination for the whole family.

Creating and maintaining the perfect aquarium environment can be easy, as long as a few basic principles are followed. This guide tells you everything you need to help you get the most from your new aquarium. Just follow each step and you'll be rewarded with happy, healthy fish and years of enjoyment and interest. Above all, don't try to rush or miss out any stages.

What kind of aquarium?

Like any pets, keeping fish requires planning, patience and care. Decide on the kind of aquarium you want some time before you acquire your first fish. There is a wide variety of fish species suitable for a first aquarium, but you need to decide on the kind of habitat you want to create.

In this guide we'll be looking at two types of aquariums: COLDWATER AND TROPICAL...



STEP 1

A CHOICE OF HABITATS



COLDWATER

Coldwater fish can live in unheated tanks. They are less expensive to keep and yet still provide a bright, attractive display. Coldwater fish have always been popular with the experts, but they are also ideal for children and beginners.

TROPICAL

A heated tropical aquarium can be maintained with the minimum of effort or expense. A warm water environment allows you to choose from a wide variety of colourful and exotic fish.

MARINE

Marine aquariums require special care and commitment and space does not allow inclusion in this guide. If you are interested in keeping these exotic fish, ask at your local pet shop or aquatics supplier for specialist advice.

The basic equipment to get started

Nothing quite beats the clarity and visual beauty of a well-kept aquarium. But that clarity is the result of a number of essential pieces of equipment, without which your fish will not thrive, and your aquarium will always be lacklustre and murky. Remember, your aquarium must provide a complete environment for your fish, one that needs to be effectively maintained at all times.

AQUARIUM

Aquariums can be made of glass or acrylic and come in many shapes, sizes and dimensions. Glass is preferable, due to its ability to resist scratches. In general, select the largest size aquarium possible and you will get a more stable environment and a greater choice of fish and plants.

CANOPY

The surface of the water in your aquarium plays a vital part in the lives of your fish. It is where many of them find their food, and where much of the oxygen and carbon dioxide are exchanged. It is important to protect it carefully. Canopies provide a secure, stable cover that reduces evaporation and contamination. It also provides safe and suitable housing for lighting, essential for natural plants to grow and fish to thrive.



A STURDY BASE

Aquariums weigh a lot more than you'd think. Water is extremely heavy - roughly 1 kilo per litre - which means that the water in a fairly modest 40 litre tank will weigh close to 40 kilos (over 6 stone)! Add to that the weight of the tank itself and other contents like gravel, rocks and ornaments and you have an item which needs careful planning as to its position in a room and the furniture used to support it. A strong base is vital as any uneven support across the base of the tank can prove disastrous. **Fluval aquariums should only be used with the correct Fluval stand.** Wrought iron and angle stands, together with hi-fi, video, TV cabinets, other articles of furniture and self-assembly furniture are NOT suitable for use with Fluval aquariums. **TO DO SO WILL AUTOMATICALLY INVALIDATE THE GUARANTEE.** Polystyrene pads must

NOT be used with Fluval aquariums. The black polyurethane pad which accompanies the **Fluval Osaka Aquarium Kit** **MUST** be used.

FILTRATION SYSTEM

The only way that waste products can be removed from the water in your aquarium is through filtration. Efficient filtration is essential to make sure your aquarium stays clear, clean and free from toxins, without the bother of continually changing the water. *See pages 8-11*

HEATER

All fish are cold-blooded - which means their bodies are the same temperature as the water around them. Coldwater fish, like goldfish, do not need a heated environment. But tropical fish need the constant correct temperature provided by a submersible heater. This is important as sudden changes can cause stress and disease. *See page 15*

THERMOMETER

You'll need to keep a close eye on the temperature of your water. Choose a thermometer that is easy to read and suits your aquarium. *See page 15*

TEST KITS AND WATER TREATMENTS

Ensure your water is perfect by using Nutrafin water treatments to remove and neutralise any chemicals in your tap water that may be harmless to humans, but deadly for fish. **Nutrafin Aqua Plus** is specifically formulated to condition water as soon as it is added to the tank, while **Nutrafin Cycle** helps prepare the filter for your fish and maintains the aquarium's natural biological balance. **Nutrafin Waste Control Biological Cleaner** breaks down organic waste to allow the filter to collect it more easily. At the start and once established, you will need to test your water regularly with **Nutrafin Test Kits**. *See pages 24-27*



ROCKS, GRAVEL & DECORATION

It is advisable to buy rocks, ornaments and gravel that have been specifically designed for use in an aquarium. There is a vast selection to choose from, and you can make your aquarium truly unique by combining textures, shapes, colours and arrangements. Always rinse everything thoroughly before you place it in your aquarium. **Never use naturally calcareous sand.**

See page 18

PLANTS

Healthily growing natural plants are dynamic, look great and enhance the quality of your water, aiding filtration, absorbing carbon dioxide and producing oxygen. **Nutrafin** offers a range of supplements, plant fertiliser and a natural CO₂ system which all help to make looking after live plants easy. *See pages 20-22*

Filtration: the key to life

Filtration is essential if your fish are to thrive, and your aquarium is to become the stunning visual display it should be. In nature, most fish and plants exist in an environment of continually changing water supplies - flowing rivers, large ponds, lakes and estuaries. In the natural world, such a small, static body of water could not support the concentration and variety of life found in even the most modest tank. The key to life in such an artificial environment is filtration. Filtration removes waste products from the water and circulates clean water back into the aquarium. If they are not removed regularly, the change in the chemical balance of the water could prove fatal to fish. There are three main types - **Mechanical, Biological and Chemical**....

Any substantial aquarium needs some form of filtration and aeration. Even coldwater tanks benefit from the sophisticated and affordable electronic equipment now available.



What does a filter do?

A filter
removes
waste

A filter
improves
oxygenation

A filter
circulates
and cleans
the water

A filter
maintains
biological
balance



Mechanical Filtration

Put simply, this works like a sieve. Water is pumped through fine 'filter media', which traps debris. Over time this filter becomes clogged and the debris must be regularly removed. Mechanical filters improve oxygen levels, provide stable conditions and reduce the build-up of dangerous nitrates.

Biological Filtration

The filter becomes a useful home for beneficial nitrifying bacteria. They mainly colonise in foam and ceramic media and neutralise two of the most highly toxic compounds produced in an aquarium - ammonia and nitrite - to leave safer nitrates. To boost these 'friendly' bacterial populations, use the biological aquarium supplement, **Nutrafin Cycle**, to set up and maintain your filter.

Chemical Filtration

Chemical filtration provides a way of fine-tuning your water. Different chemically active filter media can be used to remove specific substances, adjust hardness and pH levels and remove medication following a disease treatment. Combined with a **Nutrafin Test Kit**, the chemical filter is one of the best ways to manage your water quality. For example, carbon will filter out harmful liquids, dyes, medicines, extremely fine suspended particles and contaminants.



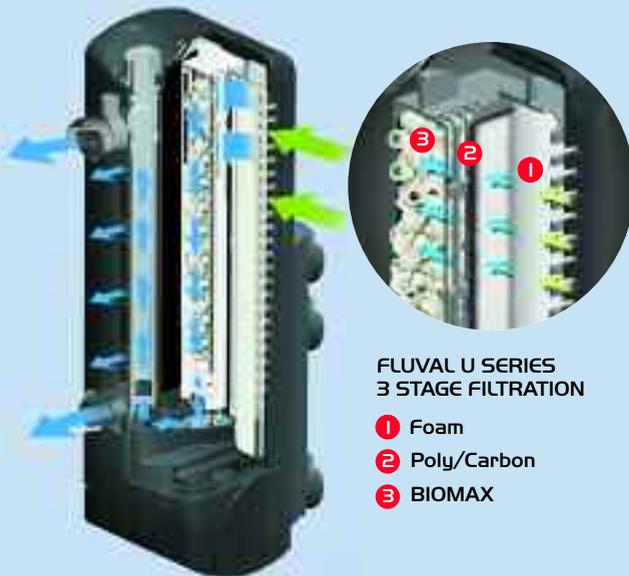
OXYGENATION

The filter system is often relied upon to help oxygenate the water too. **Fluval Filters** are extremely energy efficient and can be used to both filter as well as agitate the water sufficiently to improve oxygen levels. They require minimal maintenance and are trouble-free.

FLUVAL U SERIES UNDERWATER FILTERS

Fluval U Series Filters are the simplest filtration systems to install and use. Three stages of filtration are provided in a sequence of mechanical, chemical and biological cleaning processes (see diagram below). Stage 1 is a foam filter which mechanically removes larger particles of waste. Stage 2 is a Poly/Carbon insert where water is cleaned chemically and Stage 3 provides biological filtration with BIOMAX ceramic media.

Fluval Mini is a simple mechanical and biological filter, ideal for small aquariums and bowls (up to 45 litres) or as an additional back-up filter in larger aquariums. Keep it running at all times in your aquarium and the Fluval Mini will also provide a fully matured filter ready for immediate use if needed for a hospital/isolation tank.



FLUVAL U SERIES
3 STAGE FILTRATION

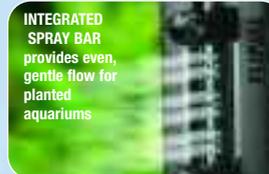
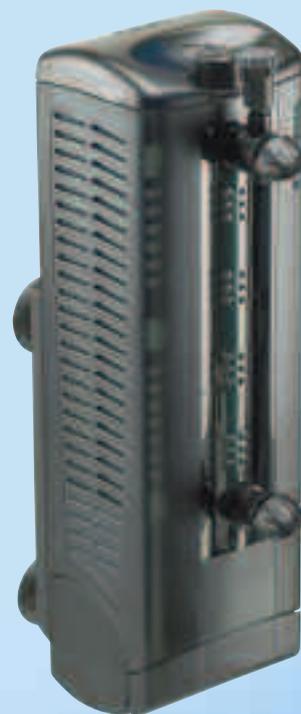
- 1 Foam
- 2 Poly/Carbon
- 3 BIOMAX

Top Tip

Use the next higher Fluval unit when aquariums are heavily loaded with fish or other inhabitants



Fluval Models	Mini	U1	U2	U3	U4
Aquariums up to	45 litres (10 US gal.)	55 litres (15 US gal.)	45-110 litres (12-30 US gal.)	90-150 litres (24-40 US gal.)	130-240 litres (34-65 US gal.)
Pump output	200 LPH (50 US gal.)	250 LPH (65 US gal.)	400 LPH (105 US gal.)	600 LPH (155 US gal.)	1000 LPH (260 US gal.)



FLUVAL Replacement media



FOAM PADS remove large particles and maximise surface contact between water and media. The large filtering surface ensures efficient cleaning of aquarium water and maximises the colonisation of beneficial bacteria. Replace every 3 - 6 months, one at a time, never both together.



POLY/CARBON CARTRIDGE filters out extremely fine suspended particles and contaminants. Traps fine debris, improves water clarity and removes odours. Replace every 2 - 3 weeks, one at a time, never together.



BIOMAX inert ceramic rings provide a massive surface area for the promotion of beneficial bacteria. Provides an optimum biological balance.



Fluval filters are ideal for use in both cold and warm water environments

FLUVAL 05 SERIES

EXTERNAL CANISTER FILTERS

The external filter is a system where the pump, filtration media and other mechanical elements of the filter are housed outside the aquarium - usually in a canister.

How do externals work?

Water is pumped from the aquarium into the canister, through various stages of the filter, then returned to the aquarium, clean and oxygenated. The external canisters are less invasive, leaving more tank space, and make it easy to change and adjust media. Many use a multi-stage system of filtration, allowing careful fine-tuning of your water quality and the encouragement of various helpful bacteria. The wide variety of filter materials available ensures waste-free water, strong biological purification and gives you pro-active control of water characteristics.

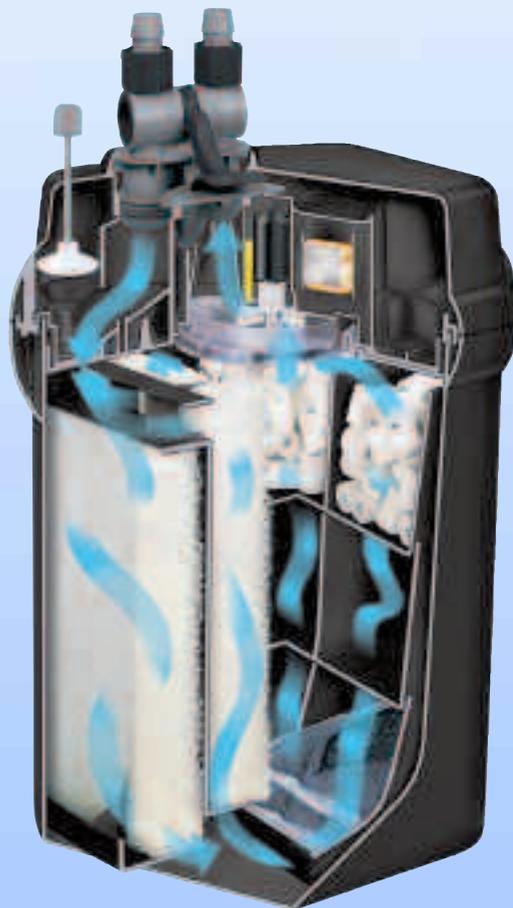


Instructional DVD included for easy setup, so there's no guesswork and no confusion

Independent modules provide flexibility

The Fluval multi-stage filtration system utilises the entire canister volume for radically increased water flow efficiency. Its mechanical stage features vertical twin foam pre-filters, to increase flow and reduce maintenance.

The chemical and biological stages are housed in independent modules. This means you can change filter media independently and ensure a constant level of all important nitrifying bacteria.



Instant Prime
For simple, quick filter start-up. No need for manual siphoning.



Lift Lock Clamps
Securely locks cover in place. Simply lift to open for easy maintenance.



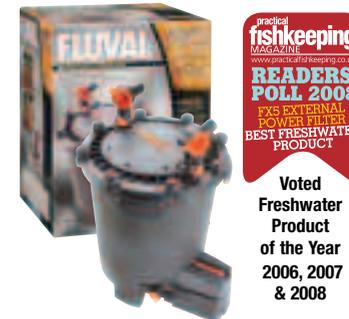
Aquastop
Stops water flow without needing to disconnect hoses. Eliminates leaks and mess.



Fluval Models	105	205	305	405
Aquariums up to	100 litres (25 US gal.)	200 litres (40 US gal.)	300 litres (70 US gal.)	400 litres (100 US gal.)
Pump output	480 LPH (125 US gal.)	680 LPH (180 US gal.)	1000 LPH (260 US gal.)	1300 LPH (340 US gal.)

FLUVAL FX5

HIGH PERFORMANCE EXTERNAL CANISTER FILTERS

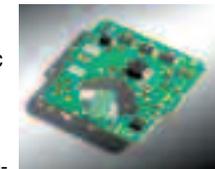


The FLUVAL FX5 high performance external filter is a system which offers the keen enthusiast a professional level of power and a host of innovative features.

- For aquariums up to 1,500 litres
- Pump performance 2,100 litres (3,500 litres - without load)
- 5.9 litres of filtering volume

SMART PUMP™ TECHNOLOGY

Designed for reliable filtration in a finely adjusted aquarium environment, the Smart Pump technology is equipped with a microchip which permanently monitors the pump. Speed and efficiency of the magnetic impeller are constantly monitored in order to guarantee a powerful water flow and highest energy efficiency.



FLUVAL Media for external filters

Many kinds of different media are available to help you achieve the perfect balance in your aquarium.

This illustration shows the recommended placement of that media in the module stack



Top Tip

Make sure you replace media at recommended intervals to keep it working to its full potential

MECHANICAL FILTRATION

- Foam Filter Block**
Acts like a strainer to prevent waste from clogging the biological and mechanical media.
- Polishing Pad**
Removes fine particles and debris to quickly clear cloudy water.
- Pre-Filter**
Small, inert, solid ceramic rings allow particles of waste and detritus to be removed and helps extend time between filter cleaning.

BIOLOGICAL FILTRATION

- BIOMAX**
Porous ceramic rings provide a huge surface area to promote powerful bacterial growth to help control harmful ammonia and nitrite.

CHEMICAL FILTRATION

- Carbon**
Carbon is a natural purifier ideal for both fresh and marine water. The granules increase the surface area, trapping waste and removing urine, dyes or other unwanted chemicals.
- Ammonia Remover**
Removes harmful ammonia before it can affect your fish. Intended for fresh water use, it can help reduce the build-up of ammonia seen in new setups or heavily stocked aquariums.
- Zeo-Carb**
This blend of Carbon and Ammonia Remover eliminates liquified impurities and toxic ammonia.
- Clearmax**
Traps phosphate, nitrite and nitrate to reduce algae.

Fluval Lab Series



- Phosphate Remover**
Super absorbent and fast acting



- Nitrate Remover**
Science grade ion exchange resin



- Opti-Carb**
Removes toxins, metals and proteins

BIGGER PACKS = BETTER VALUE!



Extra Value packs
Contains 3 essential media for regular maintenance:
Water Polishing Pads, Carbon and Ammonia Remover



Bulk Pack Chemical Media



Foam Filter Block



Polishing Pad



Pre-Filter



BIOMAX



Carbon



Ammonia Remover



Zeo-Carb



Clearmax



Aquarium Lighting

Lighting serves two main purposes - providing essential stimulation to your plants and fish, while giving a beautiful visual effect. The right lighting can both enhance the look of your aquarium, as well as recreating the changing patterns of sunlight in nature. Fluorescent lighting is best - it is efficient, covers the length of the tank and can be selected to provide the optimum light for your aquarium.

Get glowing with GLO T8 Fluorescent Bulbs. There's a bulb for every purpose, providing a full spectrum of choice...

SUN-GLO

General purpose aquarium lighting

LIFE-GLO

Simulates strong midday sunlight for accelerated plant and coral growth

AQUA-GLO

Intensifies fish colour and promotes accelerated plant growth

FLORA-GLO

Optimises plant growth

POWER-GLO

Promotes coral, invertebrate and plant growth



- Lighting allows natural plants to grow
- Lighting enhances the colour of your fish
- Choose only neon tubes specifically designed for aquariums
- Fluvial heaters provide accurate readings and a constant temperature
- Fluvial heaters disperse heat evenly to minimise 'hotspots'
- Choose the correct size for your aquarium



GLO T5 HIGH OUTPUT FLUORESCENT BULBS are included in some Fluval aquariums and provide significantly more light output per bulb than conventional fluorescents. Ideal for deep aquariums, T5HO bulbs give even light distribution, superior spectral longevity and energy efficiency in a slimmer, more compact linear shape. Two T5HO bulbs can occupy the same space as one conventional bulb. Available in 3 proven spectrums, Life-Glo, Marine-Glo and Power-Glo and 3 power levels: 24W, 39W and 54W.

Top Tip

GLO bulbs within a Fluval canopy allow excellent efficiency and have the added advantage of an anti-capillary barrier to prevent water seepage.

THE AQUARIUM MUST BE LIT FOR 8 TO 12 HOURS PER DAY:

8 to 10 hours per day if the aquarium has no plants or only artificial plants. Beyond this time the appearance of green algae would be inevitable.

10 to 12 hours per day if the aquarium contains natural plants. Greater time will cause green algae to appear.

Turn the aquarium on and off at fixed times. To do so, you may use an electronic timer. Neon tubes last approximately 1 year. They continue to operate beyond this time, but they are not very effective. **Remember to change them once a year.**

Lighting and Heating tips

- 1 When installing electrical equipment always read the manufacturers' instructions.
- 2 Be sure to check the temperature of the water every day and especially before introducing your fish, adjust and wait if necessary.
- 3 **Your heater must NEVER be kept out of the water when turned on**, it may become damaged or cause burns.
- 4 If your aquarium is sited in a cold room the wattage recommended should be doubled, if in doubt consult your local fish specialist.
- 5 Always use a thermometer.
- 6 Fish do not have eyelids so don't just switch on the aquarium lights - switch on the room lights or open the curtains first - give your fish a chance to adjust to changing light levels.

FLUVAL Heaters

Fluval M-Series

The **Fluval M-Series Heater** is designed to blend into the natural look of the aquarium with a specially coated glass casing reflecting the colours and shapes around it. Rigorous safety and quality tests ensure this high quality heater is safe and reliable.

Fluval E-Series

The **Fluval E-Series Heater** is one of the most advanced heaters available today. Integrated VueTech® technology alerts you to any temperature deviations caused by external sources. Accurate and reliable with advanced safety features, the E-Series heater provides a safe environment for fish.

A heater is essential to maintain an ideal water temperature for fish. Extreme fluctuations can stress fish so keep an eye on the heater's performance and use a thermometer for an at-a-glance check.

Fluval E-Series Heaters	
Watts	Capacity
50W	60 litres / 15 US gal.
100W	120 litres / 30 US gal.
200W	250 litres / 65 US gal.
300W	350 litres / 100 US gal.

NOTE:

Many external operating conditions such as:

- Room temperature variance
- Lack of aquarium cover
- Presence of submersible pumps and filters
- Aquarium placement in proximity to heat or cooling sources

may call for a more powerful heater to be required in an individual installation



FLUVAL M-SERIES HEATER

FLUVAL E-SERIES HEATER

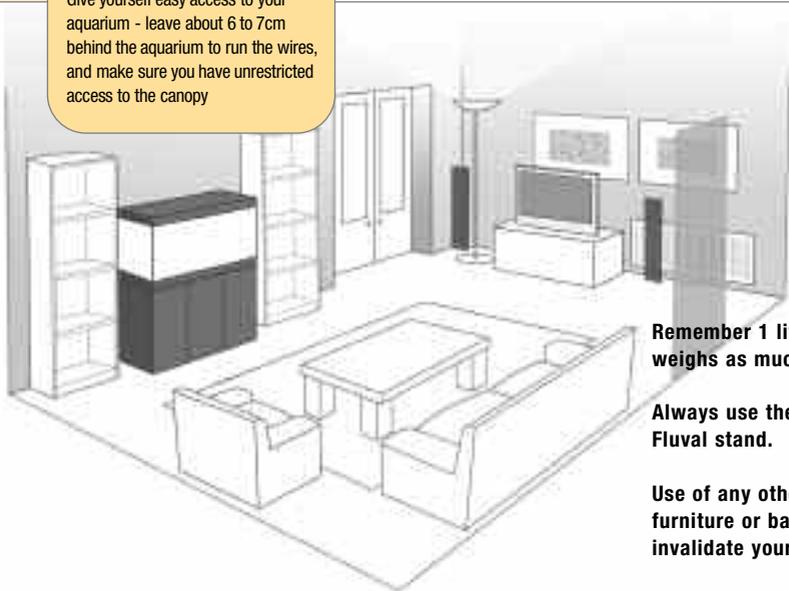
Finding the right location

One of the joys of the aquarium is the striking effect it has on a room - subtle, graceful and fascinating - you'll want to give it pride of place. However, there are a number of simple rules for locating your aquarium to get the most from it and ensure the health and welfare of your fish.

You've decided on the type of fish you want to keep, purchased all the equipment you will need to make them comfortable, now you need to decide where they will live.

Top Tip

Give yourself easy access to your aquarium - leave about 6 to 7cm behind the aquarium to run the wires, and make sure you have unrestricted access to the canopy



Remember 1 litre of water weighs as much as 1 kilo.

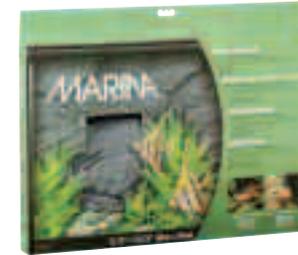
Always use the correct Fluval stand.

Use of any other kind of furniture or base will invalidate your guarantee.



Make sure your aquarium is:

- **Away from direct sunlight.** If placed too close to a window, an aquarium can develop significant algae problems.
- **Away from direct sources of heat, such as fires and radiators.**
- **Away from sources of sound, speakers, or TVs.**
- **On sturdy, level, even surfaces.**
- **Do not place your Fluval aquarium on wrought iron and angle iron stands, hi-fi, video, TV cabinets or other articles of furniture or self-assembly furniture.** Always use an aquarium stand. Failure to do so will invalidate your warranty.

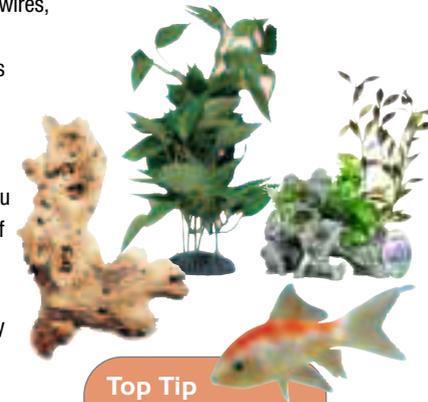


Marina Rock Backgrounds are moulded shapes for a rock wall effect which does not take up valuable swimming space.

Backgrounds can add an atmosphere to your tank and help to hide unsightly wires, cables and tubes.

Create different moods with **Marina Pictorial Backgrounds.**

With background scenes and colours you can change the look of your aquarium in an instant. Made of waterproof plastic they can be fixed to the outside back wall of the tank and any overlap can simply be cut off.



Top Tip

Choose artificial plants for coldwater aquariums as goldfish will eat live plants

Decisions about style

Before you get to the next step it's worth giving some thought to how you want your aquarium to look. Maybe you would like to reflect the decor of the room where the aquarium is placed? How about a minimal look? Or a lush, planted scene? Just changing the colour of the gravel can make a huge difference to the look of the aquarium. Coupled with a background colour or scene, you can achieve some dramatic effects easily and simply.



Gravel is good!

Gravel is an important filter in its own right, providing a massive surface area where billions of good bacteria live, consuming the harmful toxins in wastes which settle at the bottom of the tank.

Adding gravel and decorations

Once you have decided on the best position for your aquarium, you can now begin to make it ready for fish. This must be done with the aquarium in its final place as moving it once full of water is inadvisable.

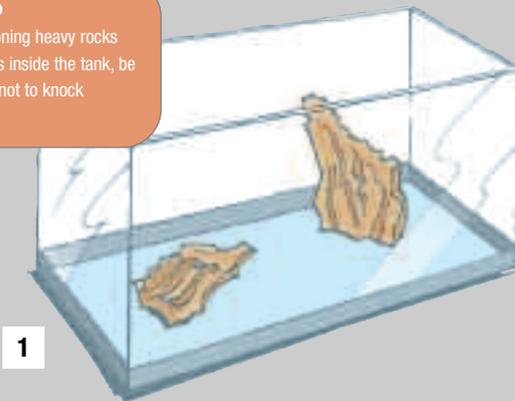
Make sure the tank itself is clean and dry before you start.

Wash any gravel, rocks, wood or other items in running water. Don't ever use household cleaners to wash the tank or its contents.

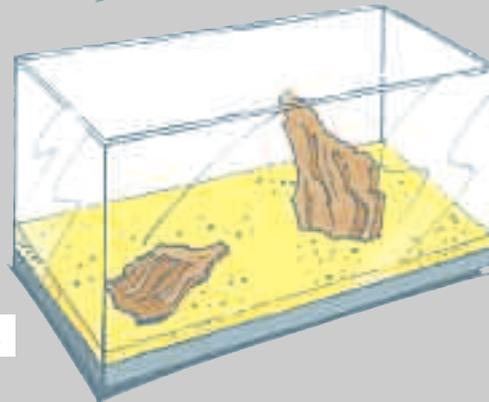
- 1 Place a few rocks in the bottom of the tank, not too close to the glass and evenly distributed.
- 2 Add the gravel so that it slopes from the front, up to the back to give an illusion of depth and to help collect debris at the front of the aquarium.
- 3 Backgrounds can add an instant atmosphere to your tank, and help conceal any unsightly wires, cables and tubes. They come in a wide variety of styles and designs - from washable plastic to realistic 3D rock or bark effects.

Top Tip

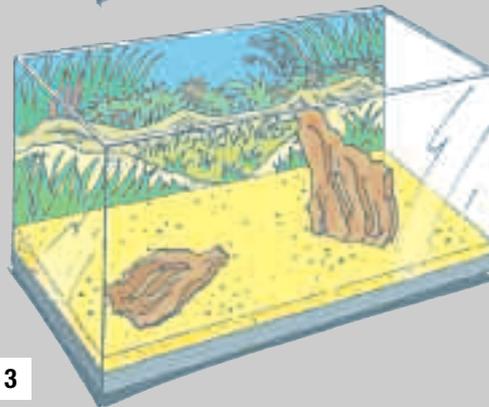
When positioning heavy rocks or ornaments inside the tank, be very careful not to knock the glass



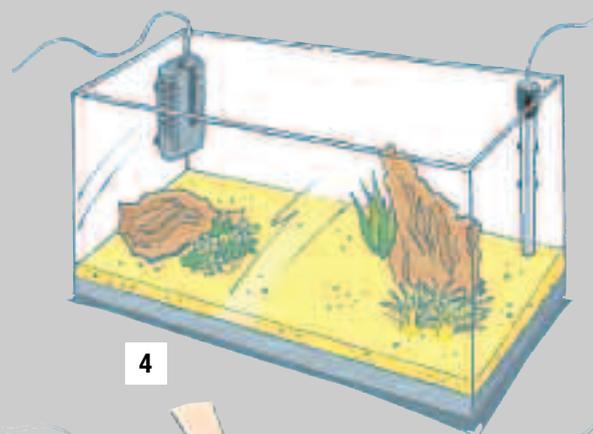
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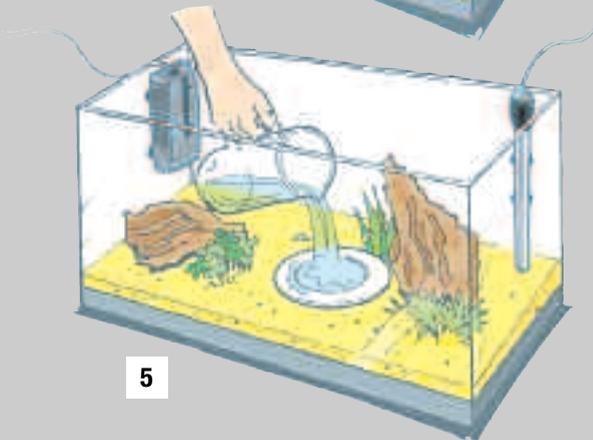
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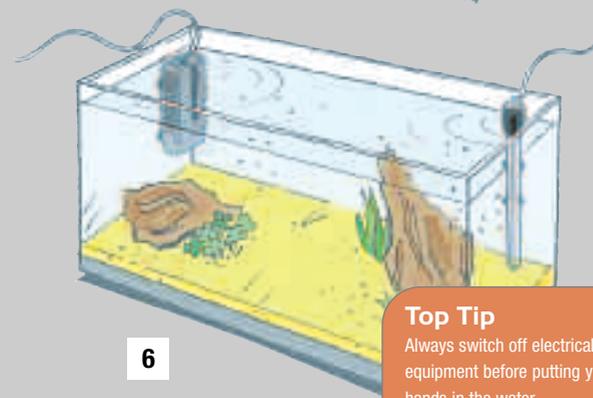
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4



5



6

Top Tip

Always switch off electrical equipment before putting your hands in the water.

Installing equipment

- 4 Read the instructions for each electrical item before positioning it inside the tank. Don't plug anything in yet.
- 5 Fill to half - full with water. It's a good idea to put a small bowl on the gravel while filling to prevent gravel from washing away. Now is a good time to add any plants (see pages 20-22).
- 6 Once your aquarium is fully planted, remove your hands from the water and dry thoroughly before plugging in and switching on the equipment.

Top Tip

Make sure you allow enough electrical flex to make a drip loop to prevent water dripping down the flex into plugs or unprotected devices.



Once your aquarium is set up, test to make sure the equipment is working. Make the necessary water temperature and filter flow adjustments and introduce **Nutrafin Cycle** and **Nutrafin Aqua Plus**. Adding a small quantity of **Nutrafin Max** food will help to establish 'friendly' bacteria in your filter.

Refer to the separate instructions for the set-up of the Fluval External filter.

Planting your aquarium

The plants you choose for your aquarium can make a big difference to the kind of environment you are preparing for your fish. It is well worth seeking advice from your supplier as to the appropriateness of certain plants for the temperature and hardness of your water and their compatibility with the fish you intend to keep.

When arranging your plants and other decorative items, arrange them across the back and down the sides of your aquarium, leaving a clear space in the front. Keep rocks away from the glass.



Handy hint: Artificial plants are an excellent option for beginners and experts alike. Made from silks, plastics and other durable materials and available in a staggering range of shapes and sizes, artificial plants provide an instant, maintenance free environment. They are also perfect for goldfish and cichlid aquariums as these species will eat real plants!



NATURAL PLANTS & GRAVEL

- 1 Cabomba Caroliniana (Green Cabomba)
- 2 Chlorophytum Bichetii (Wheat Plant)
- 3 Vallisneria Spiralis (Straight Vallis)
- 4 Cabomba Australis (Red Cabomba)
- 5 Echinodorus Paniiculatus (Common Amazon Sword)
- 6 Anubias Barteri Var. Nana (Anubias Nana)
- 7 Geosystem Natural Gravel Black Beach
- 8 Vallisneria Torta (Twisted Vallis)
- 9 Marina 3D Textured Rock Background

Live plants come in a huge selection and provide not just a visual setting for your fish, but also help with practicalities. They aid the filtration process by absorbing ammonia, nitrites and phosphates.

- **Plants produce oxygen, and absorb carbon dioxide,** see page 22.
- **Plants provide natural shelter for your fish.**
- **Provide a dynamic, changing environment.**

Natural plants absorb carbon dioxide and produce oxygen for the benefit of the whole aquarium, including beneficial bacteria.

Create this stunning scene

The beautiful aquarium, pictured above, is a natural planted arrangement providing a stunning backdrop for tropical fish. Use the layout to create it for yourself.

Here are some general tips to help:

- Place taller plants at the back and shorter plants to the foreground.
- Combine plants with different leaf shapes.
- Plant in groups, don't dot individual plants around.

- A background scene or rock effect wall will transform the overall look of your aquarium without taking up valuable swimming space.
- Always rinse gravel, wood or stone ornaments before placing in the tank.
- Substitute with artificial plants here and there, they look remarkably natural.



The following species are ideal for beginners as they are both tolerant and durable



Vallisneria spiralis
(Spiral Vallis)
Suggested for background positions, good choice for new installations and hard water, rapid growing.



Echinodorus osiris
(Red Amazon)
Excellent feature plant with red coloured leaves, needs plenty of room. Ideal for 100 litre tanks and up.



Hygrophila Difformi
(Wisteria)
Grows rapidly, recommended for new aquariums, rapidly absorbs micro-nutrients, **Plant Gro Iron Enriched** strongly recommended.



Microsorium pteropus (Java Fern)
Attaches to driftwood or rocks, flourishes in low to high light and at various pH and hardness values.



Cryptocoryne wendtii
(Water Trumpet)
Plant in groups, mid-ground placement, grows rapidly, provides brownish leaves.

Caring for aquatic plants

Natural plants absorb carbon dioxide and produce oxygen for the benefit of the whole aquarium, including beneficial bacteria.

NUTRAFIN

Nutrafin CO₂ Natural Plant System delivers a powerful source of carbon dioxide which helps plants to flourish and grow. Your aquatic garden will take on a new vibrancy, even after just 15 days!

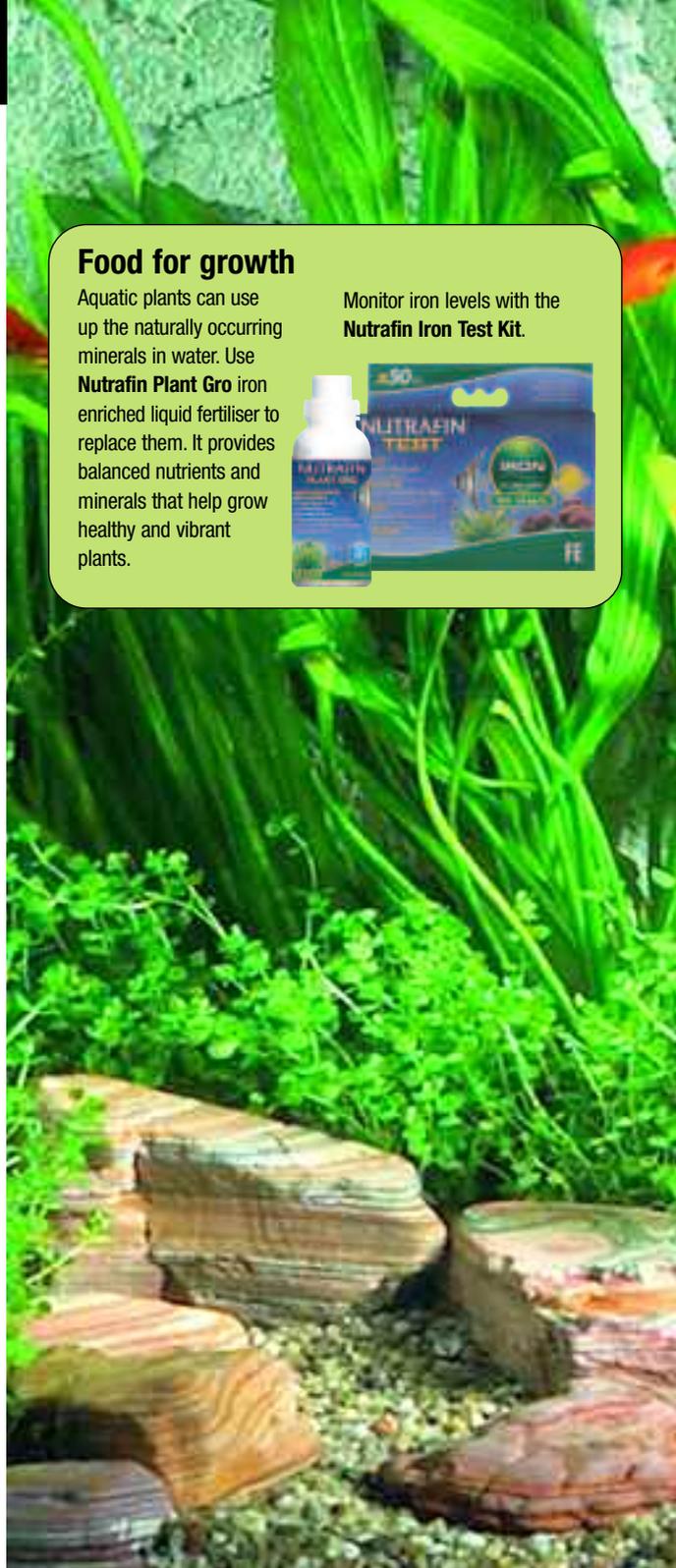
- Safe, economic, efficient
- Reduces algae growth
- Keeps aquarium plants healthy and encourages growth
- Visible results in just 15 days
- Natural fermentation - nothing to regulate
- Delivers nature's most powerful carbon dioxide source for plants
- Finally a system that everyone can use and afford



Food for growth

Aquatic plants can use up the naturally occurring minerals in water. Use **Nutrafin Plant Gro** iron enriched liquid fertiliser to replace them. It provides balanced nutrients and minerals that help grow healthy and vibrant plants.

Monitor iron levels with the **Nutrafin Iron Test Kit**.



Preparing the aquarium for fish

Once your tank is properly set up, filled and planted don't be tempted to rush out and start buying lots of fish. **BE PATIENT.**

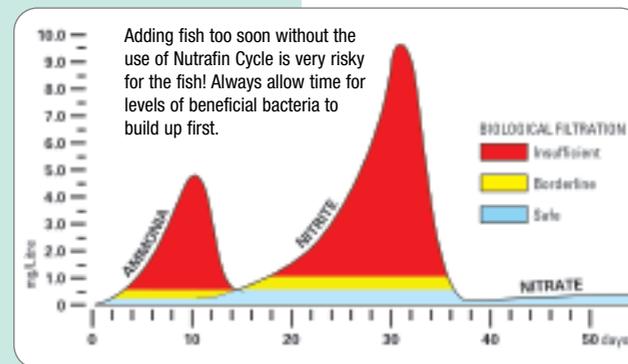
Fish should be introduced slowly and gradually, over a period of weeks rather than days, and you should make absolutely sure their environment is as perfect as it can be or your enjoyment may be short-lived.

Your tank may look ready, but the water is the most important part. Over a period of about 10 days the 'maturing' process begins when natural bacteria, beneficial to fish, start to coat all the interior surfaces inside the tank, including gravel, decorations, filter, filter foam and the tank walls. You can speed up this process with **Nutrafin Cycle**.

Nutrafin Cycle

This is a densely concentrated solution of good bacteria which helps the aquarium to mature more quickly so you can start to add one or two hardy fish straight away. However, it is important to allow enough time to establish the tank, so it is not advisable to purchase the aquarium and fish together. Do not feed the fish for the first 48 hours. If you don't add **Nutrafin Cycle**, leave the aquarium with its filter running for at least 4 - 5 days before introducing one or two hardy fish.

Before adding fish, use a **Nutrafin Test Kit** to check the levels of toxins like ammonia, to be on the safe side. The new aquarium is vulnerable to a condition known as **New Tank Syndrome** (see chart below and diagram on page 24). Levels of ammonia suddenly peak and the developing populations of bacteria are not established enough to control it. These unstable conditions can be extremely harmful to fish.



Top Tip

When adding **Nutrafin Cycle** always dose with **Nutrafin Aqua Plus** first to remove the chlorine which would kill the beneficial bacteria contained in **Cycle**.



The Nitrogen Cycle

Fluvial filters are designed to remove toxic ammonia and nitrites from your aquarium water using a process essential for a healthy aquarium called the Nitrogen Cycle.

The Nitrogen Cycle (see diagram)

Ammonia and nitrite are naturally occurring, but relatively harmful compounds. Nitrate is relatively safe. When an aquarium is first set up, the bacteria that help regulate these harmful compounds take a while to establish. Before they do, the water needs to go through the nitrogen cycle. The bacteria which begin the process are called nitrosomonas. They reproduce every eight hours, and convert ammonia to nitrites. This will take about ten days - during which time ammonia levels can be high. That is why you should always start your aquarium with just a few of the more hardy species, change water often and use **Nutrafin Cycle** to introduce ideal strains of 'friendly' bacteria.

After ten days, the second type of bacteria, called nitrobacter, begins to populate the tank. This strain converts the still dangerous nitrites into relatively

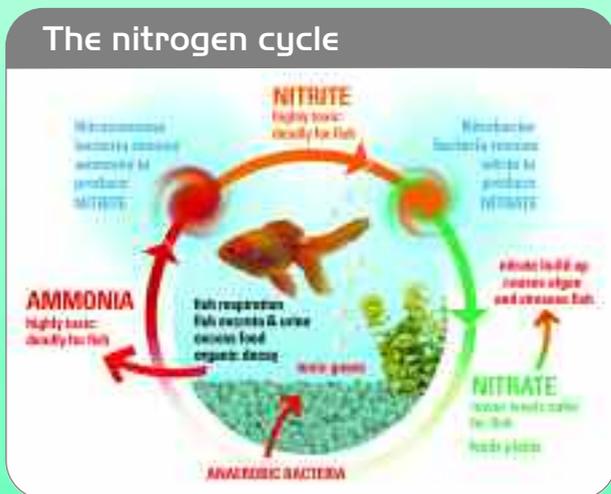


harmless nitrates. This takes about 21 to 30 days, after which all the nitrite should be gone. You should carry out regular partial water changes in these first phases. 10% per week is recommended, using a Gravel Cleaner and Nutrafin Aqua Plus, Nutrafin Cycle and Nutrafin Waste Control each time.

Once the friendly bacteria are established, levels of ammonia and nitrite will be kept under control naturally, unless something occurs to dramatically reduce bacteria levels.

Top Tip

Remember, prevention is better than cure, so test weekly for ammonia, nitrate and nitrite, perform water changes weekly and dose with **Nutrafin Cycle** to boost populations of 'friendly' bacteria



Water quality: the science

Water quality is the most important aspect of keeping fish. Maintaining the optimum water quality will help you keep your fish healthy and happy, and make the aquarium a beautiful and exciting addition to your home.

Water that is healthy for humans is particularly bad for fish. We are far more robust animals whose main requirement from drinking water is that it is free from bacteria. Fish are delicate and need water that is free from harsh chemicals such as chlorine and chloramines, and can support helpful bacteria.

Dosing with **Nutrafin Aqua Plus** will eliminate traces of chlorine and chloramines and neutralise toxic heavy metals contained in your tap water.

Once your tank is filled, there are some measurable aspects of water that must be regularly tested and adjusted if you are to maintain a perfect environment for your fish. For example, the pH is the relative acidity or alkalinity of the water.

TEST REGULARLY

Testing aquarium water every few weeks will help you to keep on top of any imbalances and prevent any serious build-up of undesirable chemicals. Check regularly for KH/GH (Carbonate Hardness & General Hardness) and Low or High Range pH.



NUTRAFIN TEST KITS

Each Nutrafin Test Kit comes complete with equipment and reagents and a clear, concise instruction leaflet for fast, accurate results. Check out the chart on page 27 for the full range of kits available.

NUTRAFIN MINI MASTER Test Kit

brings together everything you need for routine weekly water testing (pH wide range, ammonia, nitrate and nitrite) and comes complete with stand, test tubes and pipette.



NUTRAFIN Water Parameters

pH, GH and KH

Water hardness and pH are two basic parameters that are easily measured with Nutrafin Test Kits and are important in providing an optimal aquarium environment.

It is recommended to test tap water at least on a regular basis to make a note of any fluctuations and adjust accordingly with effective products such as **Nutrafin pH Adjust Up**, **Nutrafin pH Adjust Down** and **Nutrafin pH Stabiliser**.



Your local tap water may necessitate the use of certain filter media to help achieve favourable conditions for fish and plants. If you choose a **Fluval External Filter**, peat is probably one of the most useful media for hard alkaline tap water when acidic, soft water originating species of fish and/or plants are being kept.

Top Tip

Make sure you check compatibility, temperature, pH and hardness requirements for each species.



The following groups of fish generally prefer these listed pH ranges:



Livebearers
7.0 to 7.6



Rasboras
6.2 to 6.8



Tetras
6.2 to 6.8



South American Catfish
(*Corydoras*, etc.)
5.8 to 7.0



Rainbows
7.0 to 7.4



African Cichlids
7.8 to 8.5



Goldfish & Koi
7.0 to 7.5



South American Cichlids
6.2 to 6.8

Water testing made simple

There is a comprehensive range of Nutrafin test kits available today. All are high quality, user friendly and come with easy to follow

instructions providing fast accurate results. The success of your aquarium may depend on them.



NH ₃ / NH ₄ Ammonia	NO ₂ Nitrite	NO ₃ Nitrate	pH	PO ₄ Phosphate	Fe Iron	Carbonate & Hardness KH	GH	Ca Calcium	Freshwater ● Saltwater ●	
										FISH:
● ●	● ●									Gasping for air ^{1,2}
● ●	● ●									Listless at tank bottom ^{1,2}
●										Erratic movements and jumping ²
● ●	● ●	● ●	● ●					● ●		Stress related illness (eg. white spot, fungus etc.)
		● ●			●					New fish do poorly when introduced into established tank
										WATER QUALITY
		● ●		● ●						Green Algae
		● ●		● ●						Red Algae
		● ●		● ●						Brown Algae ³
		●		●						Black Algae (hair algae)
● ●	● ●									Cloudy Water
		● ●								Yellow-coloured Water ⁴
● ●		● ●								Bad Odour ⁵
										PLANTS
					●					Poor Colour
					●		●			Yellow Spots
		●	●				●			Poor General Growth
		●					●			Poor Stem Growth
					●		●			Leaves Falling Off
										LIVE CORALS
●		●	●				●		●	Corals Won't Open
		●	●				●	●	●	Poor Or No Coral Growth
●	●	●	●				●	●	●	Corals Are Dying ⁶

1 Ammonia toxicity

2 Nitrite toxicity - depletes oxygen from the blood

3 May be due to lack of light

4 Could be due to aquarium decorations

5 Perform a partial water change

6 Can be caused by improper or insufficient lighting

Buying fish

Once you are confident you have ideal water conditions, you can begin to introduce some fish. It is best to buy a small group of fish every two weeks, and gradually introduce them into your aquarium. This allows ample time for the bacteria to multiply and for fish to settle in before new fish arrive.

How many fish can I keep?

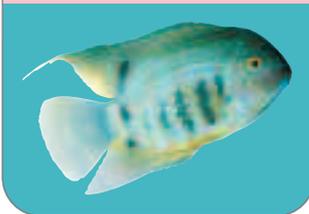
It depends on species and your preference, but you should allow 3 litres of water for every 1cm of cold water fish or 2 litres of water for every 1cm of tropical fish. Fish are usually sold as juveniles so you will need to allow some extra space for your fish to grow.

Fish which shoal in nature should be kept in groups in an aquarium, otherwise they will fail to thrive, even in a crowded tank with other species.

Always buy new fish from a reputable retailer and ask their advice about which species are suitable for your aquarium.



Species to be aware of
If you are setting up a community tank (an aquarium for a variety of different species) avoid territorial Cichlids - they require a special rocky environment, hardened water and will damage live plants.



Choose only healthy fish

When buying fish, you are well advised to look closely at each specimen, and check for health and vitality. Specific points to watch out for are:

Clear eyes.

Erect, undamaged fins.

Good scales, no missing or damaged areas - especially red blotches or scales that stick out.

No holes, ulcers, lumps, white spots, or cottony growths on the fins or body.

Translucent fish should show no signs of white blurring.

Regular respiration rates.

Gills should be red on the inside, not puffy or distended.

Actively feeding.

If you spot any signs of illness or abnormal behaviour, don't buy any fish from that tank.



Introducing new fish

Helping your fish get used to your aquarium is important if your fish are going to remain healthy through this critical period of transition.

Fish don't like surprises. They do not react well to rapid changes in temperature, handling or rapid movements. Always make sure you handle them gently and allow them sufficient time to get used to new surroundings.

The best way to introduce fish into your tank is as follows:

- 1** Add a full dose of **Nutrafin Aqua Plus** to the aquarium, its patented stress relieving ingredients will benefit new specimens. Turn off the aquarium lights during acclimatisation. Float the bag containing the fish in the aquarium for about 20 minutes to equalise water temperature.
- 2** Open the bag and add a little aquarium water - about 1/3 the bag's volume.
- 3** Wait 10 minutes and repeat.
- 4** Carefully remove the fish with your net and place them in the aquarium or tip the bag on its side to allow the fish to swim out.

If these are the very first fish in the aquarium, wait a full 48 hours before feeding.



Prevention is better than a CURE

Most living organisms can suffer illness at one time or another. The most effective way to deal with this reality is to prevent, rather than wait for a possible problem. The consequences of having to treat a stocked aquarium with a medication can be stressful and damaging in itself. Many plants, fish and helpful bacteria can suffer as a result of using medication.

The following list provides general points to help disease prevention:

- 1 Choose only healthy fish, avoid purchases from aquariums containing sick fish.
- 2 Purchase fish in limited groups, slowly build fish populations.
- 3 Consider a quarantine aquarium. This will allow observation and preventative treatments before exposing new fish to established aquarium inhabitants.
- 4 Follow proper acclimatisation of new specimens.

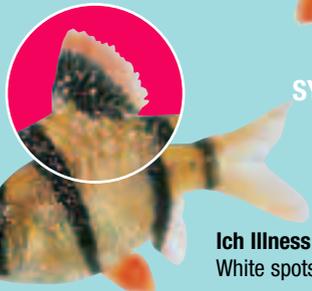
Fin and Tail Rot
Torn ragged fins, possibly stuck together



Eye Cloud or Pop Eye
Protruding or cloudy eyes

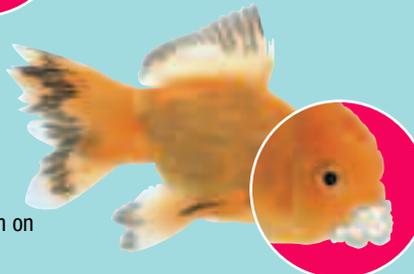


LOOK FOR THESE SYMPTOMS OF SOME COMMON FISH DISEASES



Ich Illness
White spots

Body Slime and Mouth Fungus
White viscous film on lips and mouth



- 5 Always condition new water with **Nutrafin Aqua Plus** before adding to the aquarium. Chlorine, chloramine, and metals are damaging to aquarium inhabitants.
- 6 Perform basic water tests and maintenance on a regular basis.
- 7 After power failures, ensure that all equipment is working properly. Observe fish carefully, temperature variations will stress them.
- 8 Regular illumination periods are important for fish and plants. Switch lights on and off at the same time every day or use an automatic timer.
- 9 If a medication has been used, after the treatment is complete, perform additional water changes and use **Fluval** carbon filter media to remove residual traces. Test water and dose with **Nutrafin**

Cycle and Nutrafin Aqua Plus.
(NB. Carbon should always be removed from the filter during medication and replaced only when treatment is complete).

- 10 Supply regular feedings of various quality foods. **Nutrafin Max** provides complete nutrition with advanced yeast extracts for proper digestion and increased health.

Caring for poorly fish

You need to get to know your fish well if you are going to be able to spot disease or illness before it becomes untreatable, so spend time observing your fish, how they move and interact with their environment.

If you see any variation, the first thing to do is to check water quality as it may be a sign of pollution or poor water conditions. If this is not the problem you will need to seek advice from an authority on fish - your local supplier for instance.



AS WITH MANY DISEASES, THE SOONER IT IS TREATED THE BETTER THE PROGNOSIS

White Spot Disease A common ailment that responds to treatment well, although it is best to treat the whole tank.

Tailrot/Finrot Look for torn, ragged or stuck-together fins. Try to treat at early stage - if the rot reaches the body, cure is unlikely.

Velvet Disease Infected fish have a dusty look, the treatment is similar to White Spot.

Skin/Gill Flukes Watch for fish scratching themselves on rocks or plants, this nasty parasite causes colour to fade and fish to become feeble - they may rest near the surface. It responds well to treatment.

Slimy Skin A thin grey film that covers their body - usually in response to parasites.

Pox White spots that join to form patches. Fish become emaciated and twisted - often caused by poor condition and food.

Fungus Usually only attacks fish weakened by other poor conditions, disease or parasites. Healthy fish will not be affected.

Mouth Fungus Unlike body fungus, this requires specific treatment.

Eye Infections Cloudy, protruding eyes could be the sign of fungus, bacteria, parasites or even fish tuberculosis.

Dropsy Highly contagious and difficult to cure, the fish's body can become so bloated that the scales protrude.
Sick fish must be removed at once.

STEP 11

CONTROLLING ALGAE

Algae: good or bad?

It is impossible, and undesirable, to eliminate algae completely. Some algae can be a sign of good health and balance in your aquarium, however, some are toxic and if not controlled effectively, can have adverse effects on fish and plants. Good aquarium maintenance is the best way to prevent algae from becoming a serious problem.

There are a number of common types:

GREEN ALGAE

Appears as small green spots and dots on glass, rocks and gravel, as well as 'green water'. Caused by poor or inappropriate lighting and over exposure to strong natural light.

FILAMENTOUS ALGAE

Dark green 'hairs' attached to gravel or plant stems. Caused by too high nitrate level.

FEATHER ALGAE

Very dark green tufts on decorations, pumps filters etc. Caused by high phosphate level.

BROWN ALGAE

Thin layers on glass and plant leaves. Caused by an imbalance of various parameters: light, nitrites, pH, water hardness and ammonia.



Top Tip

If you have to position your aquarium near a window, use blinds to limit the sunlight reaching the aquarium.

Avoid algae invasion by:

Keeping your aquarium out of direct sunlight and use the aquarium lights for about 10 hours a day (too much light causes green algae and too little causes brown algae).

Change water regularly, removing water from the lower levels of your aquarium where the nitrates lurk.

Use low-phosphate foods like **Nutrafin Max**.

Monitor your water every 2-3 days.

Test phosphate levels weekly.

In extreme or difficult cases ask professional advice - you may need to use an algaecide or ion exchange resin, such as **Fluval Clearmax** or **Fluval Lab Series Phosphate Remover**.

Use **Nutrafin Waste Control** weekly to help break down and remove algae from decor and gravel. Always use in conjunction with **Nutrafin Cycle** to remove harmful waste toxins.



Regular care is essential

You will need to carry out regular (once a week or once a fortnight, depending on aquarium conditions) partial water changes - but never change more than 40% of the water at any given time.

Never completely empty your aquarium to clean it - it will stress your fish and disturb the natural balance of the aquarium.

Change your filter media a half at a time to preserve helpful bacteria. Only use aquarium water to rinse the media - **never tap water**.

Never use soap or detergent on anything that will come into contact with your fish or their water.

Take care when cleaning near the gravel - it can scratch the glass.

Only put your hands in the tank when absolutely necessary - the oils on your hands can alarm your fish. Don't use perfume, handcream etc. before putting your hands in the water.

STEP 12

EFFECTIVE MAINTENANCE

Effective maintenance

Caring for your fish means caring for your aquarium. Use the following pages to help establish an effective care routine...

The best route to effective maintenance is to do certain essential tasks on a regular basis - this will save you time in the long run.



Care Kit

Everybody planning on keeping fish will need a few essential items - inexpensive but indispensable

Gravel Cleaner

Used to remove waste, debris, excess food and sludge.

OR

Multi-Vac Cleaner

A 3 in 1 battery powered gravel cleaner, water siphon and algae cleaner.

Plastic Bucket

for Aquarium use only

You will need a clean plastic bucket - to hold siphoned water during water changes, and to hold fresh tap water and water conditioner while refilling your aquarium.

Fluval Media

Keep spare, replacement media for your Fluval internal or external filter. Carbon and Polyester are especially useful. Extra Fine polyester pads filter out extremely fine particles

and contaminants. Carbon improves water by filtering out harmful liquid substances, dyes, medicines and contaminants without altering the water's properties. Other types of Fluval media are also available, see page 12-13 for more information.

Algae Scraper

Designed to effectively remove algae without scratching the tank.

A Net

As well as being beautiful to look at, most fish are delicate creatures and do not respond well to handling.

Always use a purpose-designed fish net to lift them. Also handy for removing tiny bits of leftover food.

Keep a variety of foods for the different fish in your aquarium.

Flakes are for surface feeders, slow-sinking pellets or granules for mid-water feeders and tablets for bottom feeders.

Nutrafin Max caters for the needs of different species.

Going away on holiday?

Nutrafin Profeed and Nutramatic 2x Automatic Feeders

dispense the desired volume of food up to twice daily. Ideal for every day or holiday use.

Alternatively, **Nutrafin 7 Day Food Blocks** will keep your fish nourished with a time-released source of food. The blocks also neutralise pH and purify water.

Don't forget to maintain your regular supplies of water treatments too, they are a major influence on the quality of the water. Without them aquarium conditions can deteriorate quickly.

Keep up with your stock of Nutrafin Aqua Plus, Nutrafin Cycle and Nutrafin Waste Control. Always keep a Nutrafin Mini Master Kit handy to monitor levels of ammonia, nitrite, nitrate and pH in your aquarium.



Marina Easy Clean Gravel Cleaner



Marina Multi-Vac Cleaner



Fluval Underwater Filter Pads



Fluval BIOMAX



Marina Net



Marina Long Reach Algae Scrub



Nutrafin Max Fish Food



Nutrafin Max Water Treatments: Aqua Plus, Cycle and Waste Control



Essential Schedule

The best formula for successful fishkeeping is to keep a regular maintenance schedule



EVERY DAY:

FEED FISH and take care not to overfeed ✓

CHECK ALL INHABITANTS for disease, liveliness and normal behaviour ✓

CHECK TEMPERATURE and make sure pumps, filters and lights are running smoothly ✓

REMOVE ANY DEBRIS like dead leaves, uneaten food, etc. ✓

EVERY WEEK:

PARTIAL WATER CHANGE

Because wastes accumulate continuously, a partial water change - about 10 - 20% - is essential to ensure cleanliness and to reduce build up of unwanted chemical waste (frequency of water change depends on filter type and aquarium set-up). Be sure to replace any water you remove with water conditioned with **Nutrafin Aqua Plus**, which should be at the same temperature as the aquarium ✓

CLEANING INSIDE AND OUT

Use a gravel cleaner to remove waste and syphon off water ✓

Clean fluorescent tubes and fixtures to maintain a consistent light source ✓

Clean inner and outer glass surfaces with specially designed algae scrapers ✓

WATER TESTING & CONDITIONING

Test the water and dose with **Nutrafin Cycle** ✓

Rinse foam media in aquarium water ✓

If you are using a **Fluval U Filter**, the Poly/Carbon cartridge will remove fine particles in the water caused by disturbing the gravel.

Change Poly/Carbon pads every 2 - 3 weeks. ✓

EVERY MONTH:

MAINTAIN FILTER check the impeller and change the relevant filter media ✓

CHECK YOUR SUPPLIES of food, water conditioners, media and other regularly used items ✓

EVERY YEAR:

REPLACE LAMPS

Change your **Glo Fluorescent Bulbs** ✓

If your aquarium filter includes a UV Steriliser, remember to replace the bulb ✓

Top Tip

Never clean filter media completely or you will destroy important bacteria. After cleaning add a dose of Nutrafin Cycle to replenish bacterial populations



10 BASIC RULES FOR A SUCCESSFUL AQUARIUM

1. Provide appropriate, regular, varied feeding - *two or three times a day.*
2. Keep fish populations within reasonable limits.
3. Follow our daily, weekly, monthly and yearly checklists.
4. Choose fish that are compatible, but which occupy different levels of the aquarium.
5. Choose your filtration system carefully.
6. Use living plants where possible.
7. Choose the largest aquarium your budget and space will allow - this will help water stability and give you more choice.
8. Keep water stable and well conditioned.
9. Plan your aquarium - don't rush the early stages.
10. Enjoy your aquarium - *it is a true glimpse of a fascinating underwater world.*

FLUVAL

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or queries, don't hesitate
to call us on our
Helpline numbers:

United Kingdom:
01977 556622

Canada only:
1-800-554-2436.

U.S.A only:
1-800-724-2436

or contact us through our
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