

UNIT:3

**CONSTRUCTION AND
MANAGEMENT OF HOME
AQUARIUM**

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Aquarium: (Latin) aqua – water; arium – a place for relating to

- Hobby, pleasure, fun

Definition :

An Aquarium is a transparent tank or a bowl or an artificial pool where live fishes and other aquatic animals are kept.

SETTING UP AN AQUARIUM

LOCATION

**Sufficient place
growth, over heating)**

**Electrical outlets
Changes)**

Best view

Avoid

Direct sunlight (algal

Windows & doors (temp.

Trafficked area

TANK SIZE

Volume of the tank = Length x Height x Depth x 0.00433

Stocking fish

- **Note the adult size for stocking**
- **Amount of waste**
- **Swimming capacity**
- **Aggressiveness**
- **Comfortable with other fishes**

WATER FOR AQUARIUM

Most important

Routine water change

* **maintains N2 cycle**

* **pH**

- **stress on fish**

- **ESSENTIAL EQUIPMENT FOR SETUP**

- **AQUARIUM FILTERS**

- **Remove physical & chemical waste**

- **Simplify maintenance**

- **Mechanical filtration: Remove large suspended particles**

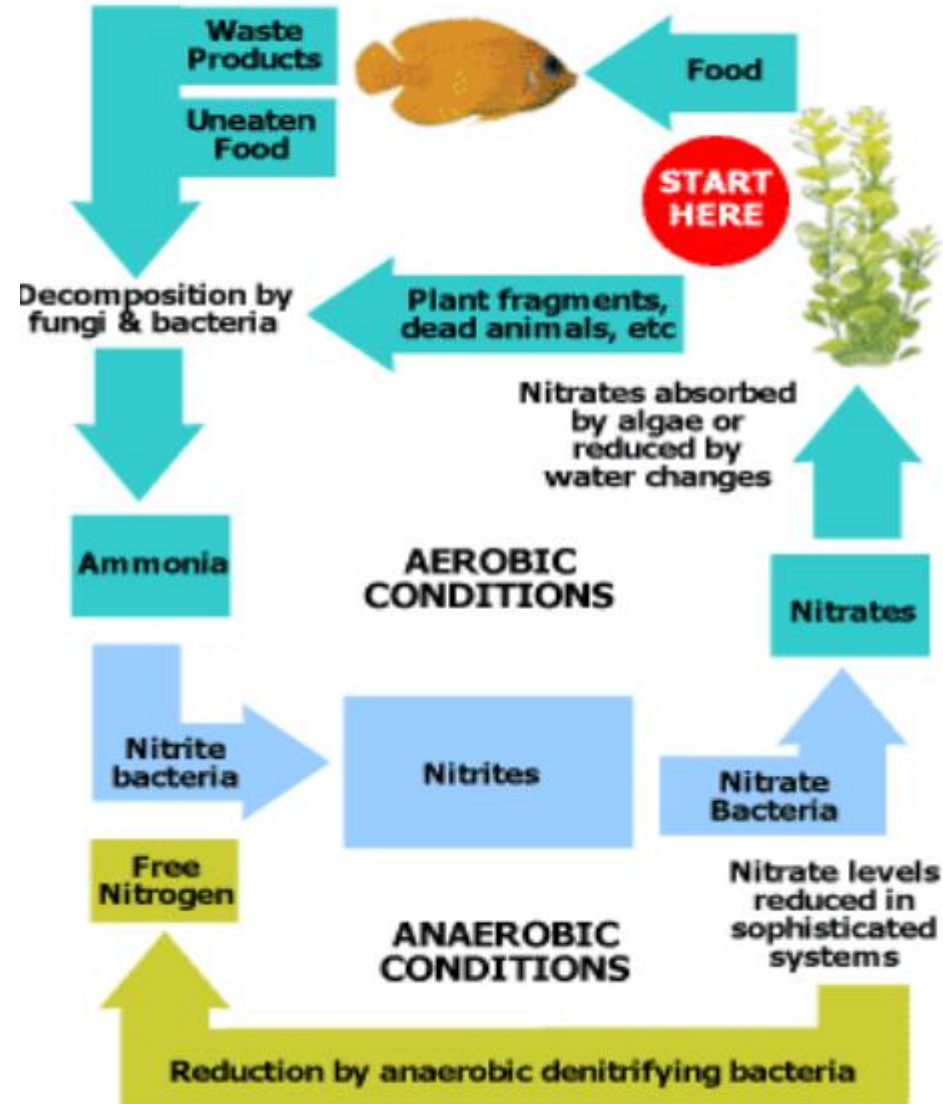
- **Chemical filtration : Remove medication and heavy metals.**

- **Biological filtration**

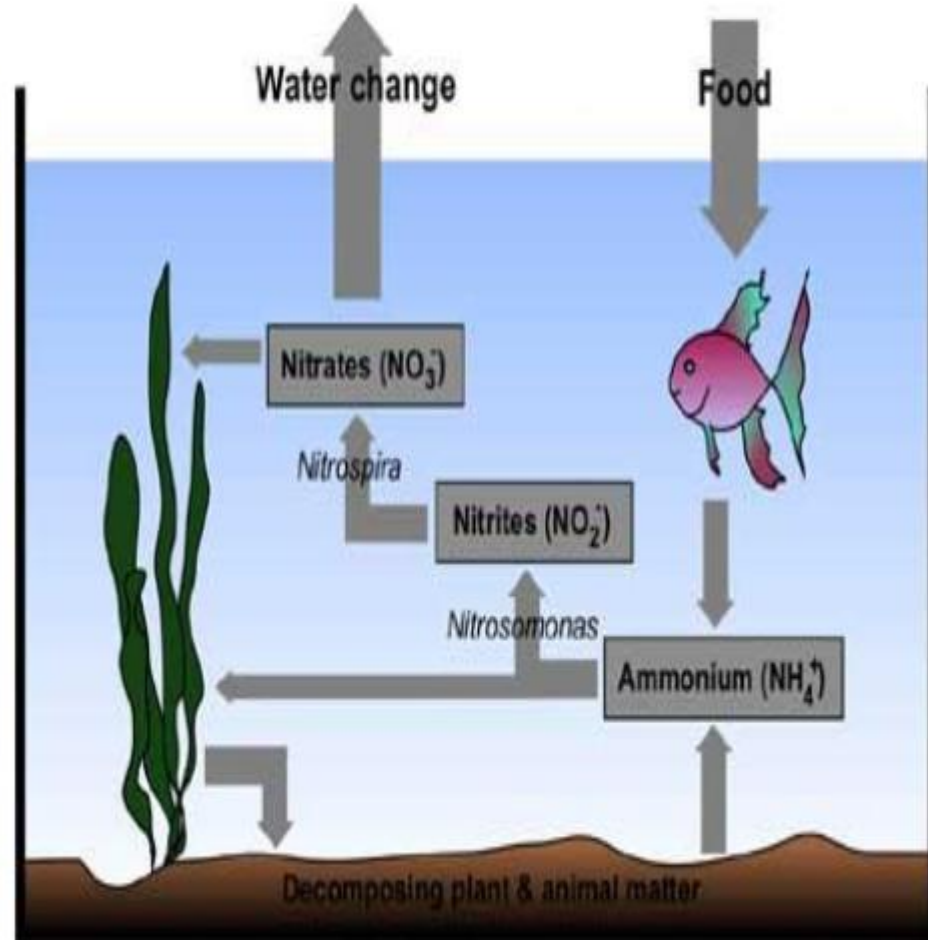
- **Outflow tank**

Biological Filtration

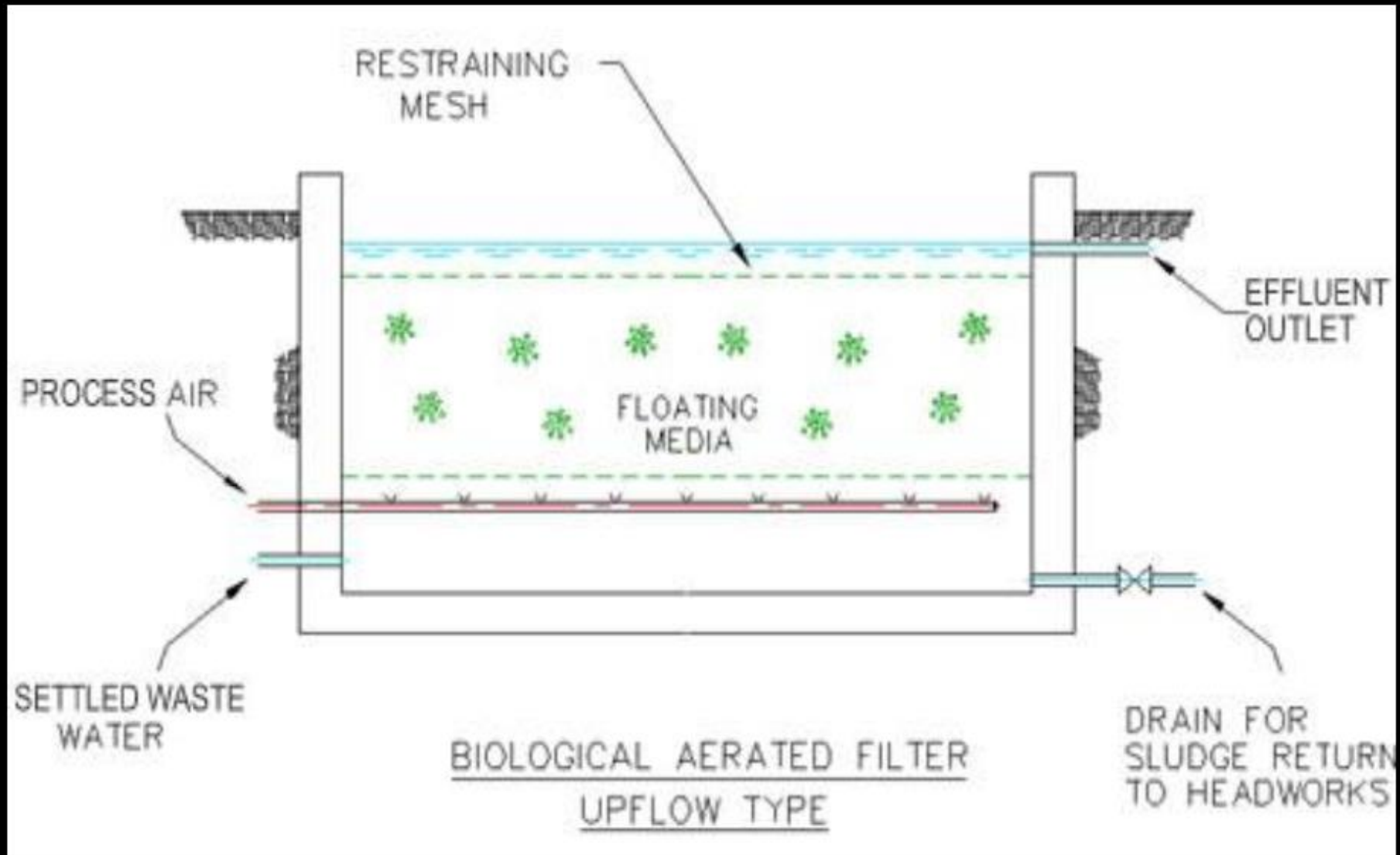
Aquarium Cycle



Nitrogen Cycle



Biological Filtration



Filtration Materials

Ceramic Ring



Activated Carbon



Bio Ball



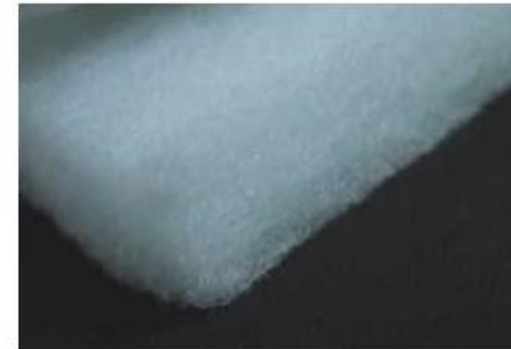
Lava Stone



Filter Sponge



Filter Mat



Types of Aquarium Filters

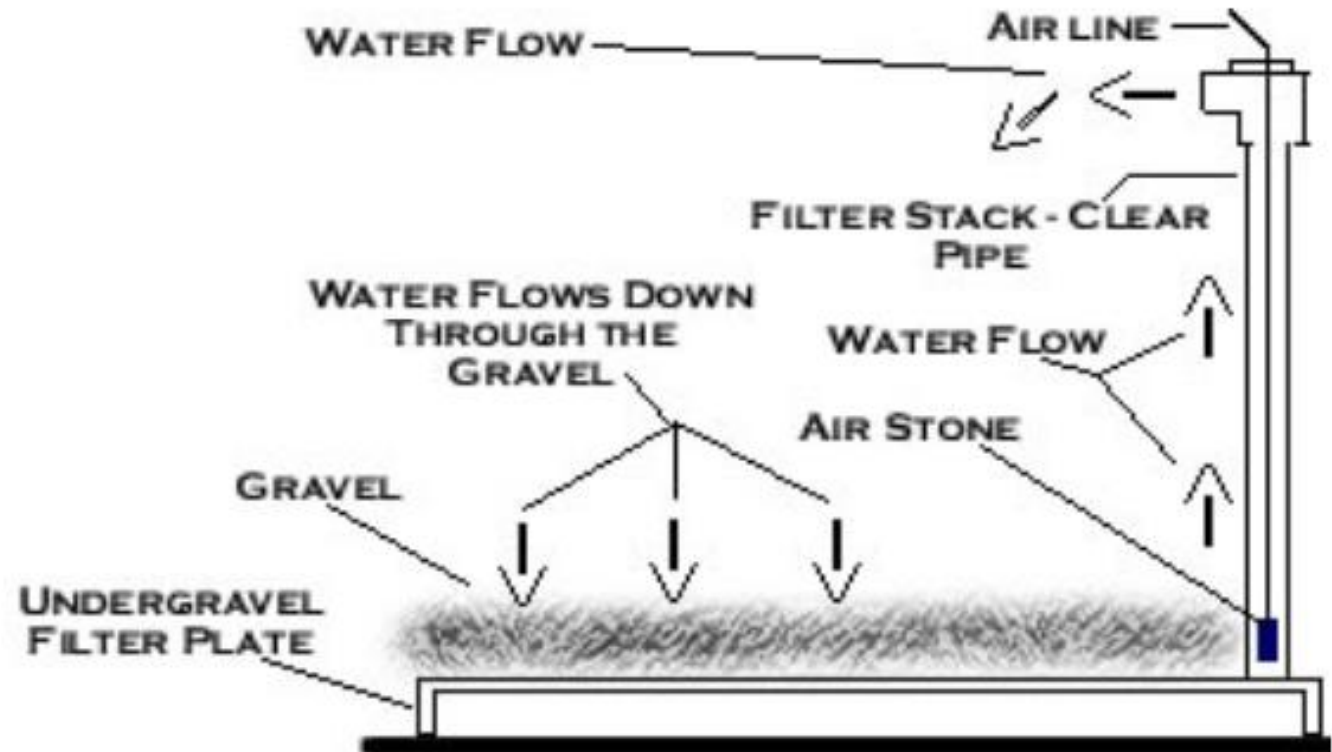
External filters

Canister
Diatom
Trickle
Algae
Baffle

Internal filters

Airlift
Undergravel

Undergravel Filter System



Aquarium Lighting

- Used to illuminate tank**
- Replicate natural environment**
- Day light & warmness**
- Plant growth**

Bulb Types

- **Incandescent/Halogen**
- **Normal Output (NO) Fluorescent**
- **High Output (HO) or Very High Output (VHO) Fluorescent**

Power Compact (PC) Fluorescent

- **Metal Halide**
- **LED**

Heater & Thermometer

Check and maintain Temperature

Aquarium Substrates

Decoration & Background

Test Kits

pH

Ammonia

Nitrite

Nitrate

Oxygen

Settingup

- Leak test (tank check)
- Aquascape (arranging plants, rocks, stones, etc.,)
- Install equipments
- Water filling

(water→substrate→water→plants→water)

Introducing fish

Turn off lights (reduce stress)

Add feed (reduce aggression)

More than 1 fish at a time

Fish food

Specific food for specific fish

- Protein, carbohydrates, vitamins

Worms

Shrimp

Beef

Poultry

Spinach

Potato

Lettuce

Frozen food (reduce disease)

MAINTENANCE OF AQUARIUM

- Healthier
- Long life
- Joy for hobbyist

Basics

- Liquid nutrients (correct dosage)
- Lightings (change every 6 months)
- CO₂ (using test kits maintain CO₂ -25-35ppm)

Biological Loading

- Tank capacity (rate of biological decay in proportion to tank volume)
- Tank size

Water conditions

- Purify
- Salinity
- pH
- Chlorine
- Natural water source (for large aquarium)

Temperature: Tropical Cold water

25`C below room temp.

- Temp. Consistency
(sudden change cause shock and disease)
- Thermometer & heater
- Aeration (pumps, power heads, water flow)

Maintenance Equipments

GRAVEL VACCUUM SCRAPER NET

Remove excess water

Remove algae from wall Move fishes

PUMP, BRUSH, SIPHO

Quarantine Tank

Means - place of isolation: either a sick one or a "newly acquired" one which needs to be closely observed for some time)

Daily

Temperature (thermometer = heater's thermostat)

Water level (check dissolved nutrients; fill
evaporated water)

Unusual behaviour (loss of appetite, swimming pattern,
rubbing) – (move to quarantine tank)

Dead fish (remove before decompose)

Weekly : Water change

- Prepare replacement water**
- Add conditioner or dechlorinator**
- Leave to room temperature**
- Rinse equipments & materials in the tank**
- Leave fish in quarantine tank**
- Remove algae using scrubber**
- Discard dead organisms**
- Remove water using siphon**
- Add new water using siphon**
- Add fish without disturbance**

Monthly

- Replace filter cartridges**
- Rinse all materials before water change**
- Wash all equipments**
- Clean air stones using boiling water then soak in vinegar for a day**
- Record monthly maintenance**

Twice a year

- Replace bulbs**
- Use gloves to remove metal halide bulb**
- Clean intake & outlet pipes**
- Clean pumps & filters**
- Lubricate moving materials**
- Record biannual maintenance**

BASIC RULES

Not to over stock

Not to over feed

Do Frequent water changes

Conclusion

Soon fishes will be used to their environment and become more active. They may even recognize when you come close. That is the reward of fish keeping!

