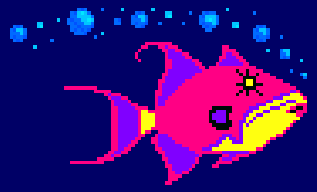


How To Set-Up & Maintain a Saltwater Fish Tank

Class Topics

- General Overview & What's Required
  - Initial Considerations
  - Initial Set-up
  - Maintaining Your Tank
  - Potential Problems
- Setting Up Your Tank
  - Step by step procedure
- Adding new inhabitants
  - Acclimation procedure
- Maintaining your tank

General Overview

- Is saltwater right for you?
- Coral, Fish, or Both?
- What are the costs?
  - 75 gallon fully set-up with corals/fish ~ $1,200
  - School Set-Up: 25 gallon w/ fish only $600-$700
  - Average fish ~ $20 (freshwater ~ $2)
  - Average Coral ~ $60
- Is it hard to maintain?

Initial Considerations:

- Placement of tank
  - Weight concerns
  - Who will maintain tank?
- DON'T SKIMP OR GO THE CHEAP ROUTE!
  - You'll pay in the end!

Initial Set-Up:

- Tank
- Stand
- Lighting w/ New Bulbs
- Filtration System w/ Media
- Bottom Media
- Live Rock
- Saltwater
- Test Kit w/ Hygrometer
- Glass Scraper

Initial Set-Up:

- Power Head(s)
- Heater
- Tank Thermometer
- Power Strip w/ Timer(s)
- Cleaner Crew
  - Snails
  - Crabs
  - Sand Sifters
- Corals
- Livestock

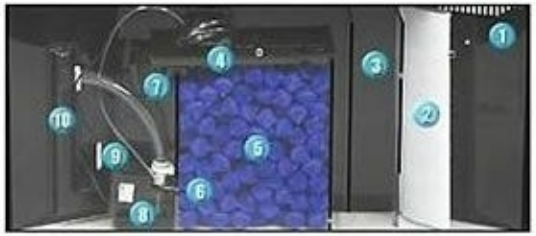
Initial Set-Up:

- Optional:
  - Protein Skimmer
  - Background Scene
  - Fish Net
  - Hospital Tank (stripped 10 gallon)
  - Moon Lighting
  - Refugium
  - Etc. Etc. Etc.

Initial Set-up:

- Tank: ($50+)
  - No gallon minimum
  - 75-120 preferred (for larger fish)
  - Glass vs. Acrylic
  - Standard vs. Show
  - Different Shapes/Sizes/Dimensions
    - Tall, regular, long, corner, hexagonal, etc.
  - Bow Front vs. Flat Front
  - Different Trims / Different Backing
  - The smaller the tank, the faster changes can occur!
- Stand: ($50+)
  - Needs to support the weight of tank

Examples of Tanks:



1) 4 way adjustable skimmer gate prevents fish from entering filter
2) Quick change prefilter makes cleaning simple
3) Heater or Optional Protein Skimmer chamber
4) Bio-Aire Driptray distributes water evenly over biological filtration and enhances aeration
5) High surface area biological media
6) Air-injection nozzle
7) Media tray for chemical and carbon filtration
8) 350 gph submersible pump
9) Clear slot to view water level in filter
10) Turbulence manifold for circulation unsurpassed by any other built-in filter

Examples of Tanks:

How To Set-Up & Maintain a Saltwater Fish Tank

Initial Set-up:

- Lighting: ($100+)
  - Need at least (2) types of bulbs:
    - Full Spectrum Daylight
    - Blue-Intense
  - Bulbs should be replaced every 8-12 months
  - Effects plants & animals
    - Algae growth
      - Purple = Good
      - Green = ok
      - Red/Brown = BAD!

Initial Set-up: Lighting

Initial Set-up:

- Filtration System: ($100+)
  - Most important for tank stability!
  - Biological filtration is a necessity!
    - Biologic Wheel(s) or Media Required
  - The bigger your tank, the more filtration needed!
  - Aerates the water
  - Removes waste and byproducts

Initial Set-up: Filtration

Initial Set-up:

- Bottom Media: ($100+)
  - Need 2-3” minimum (~1 lb per gallon of water)
  - Use “Live Sand”
    - A mix of sand/crushed corals straight from the ocean
    - Rich with micro-organisms and bacteria
    - Gets tank fish-ready within days
    - Generally $30 for 5 lb bag / $40 for 10 lb bag ??
  - Other Sands/Media
    - Requires full cycle to get tank established
      - 4-6 weeks

Initial Set-up: Live Rock

- Live Rock ($50-$100)
  - Living rock (organisms)
  - Helps establish balanced tank
  - Gives livestock places to hide
  - Supplies tank with rich supply of micro-organisms
  - Gives structure for corals to attach to
  - Generally $7-$10 per lb.
  - A Necessity for saltwater tanks!!

Initial Set-up:

- Salt Water ($40+)
  - Acquired from fish store
  - Make your own:
    - Best if filtered fresh water is used
      - Available at some grocery stores
      - Available at some Pet Stores
    - If using tap water, use a conditioning agent to remove metals, chemicals, etc. before mixing
    - Sea Salt ($15 for large bag)

Initial Set-up:

- Test Kit ($30)
  - Test for:
    - Ammonia
    - Nitrates
    - Nitrites
    - pH
    - Salinity (hygrometer)

Initial Set-up:

- Glass Scraper ($10-$20)
  - Algae will grow on the glass
    - Makes view fuzzy and less clear
  - Magnetic Type
    - Best
    - Careful not to get sand on inside!
  - Scrubber Type
    - More labor intensive
    - Messier

Initial Set-up:

- Power Head(s): ($15-$60)
  - Corals and larger tanks will require more current than the filter can provide.
  - Water pumps that circulate water
  - Size & number dependant on tank requirements.

Initial Set-up:

- Heater: ($30)
  - Tropical water needs to be at a tropical temperature!
  - Maintains temp
  - Needs to be decent quality and submersible
- Tank Thermometer: ($5)
  - Tells you water temp

Initial Set-up:

- Power Strip w/ Timer: ($30)
  - Each piece of equipment has a power cord
    - (Filter, lighting, thermometer, power heads, etc.)
  - Spike protection
  - Timer(s) to regulate day/night cycles

How To Set-Up & Maintain a Saltwater Fish Tank

Initial Set-up:

- Cleaner Crew:
  - Necessary for keeping tank "clean"
    - Snails – Eat algae on glass, rocks, sand, etc.
      - Different types do different jobs!
    - Crabs – Eat micro-organisms, help aerate sand, eat dead plants/animals, etc.
    - Sand Sifters – Keep sand clean, aerate sand, change landscape, provide "hide-outs", etc.
      - Watchman, sleeper, & diamond gobies

Initial Set-up:

- Corals:
  - Typical Corals
  - Clams
  - Feather Dusters
  - Etc. Etc. Etc.
- Livestock:
  - Fish
  - Shrimp
  - Etc. Etc. Etc.

Tank Maintenance:

- Keep a watchful eye
  - Generally changes occur slowly
  - Inspect tank on a daily basis to notice subtle changes
    - Do all fish appear healthy?
    - Do all corals appear healthy?
    - Do all fish behave normally?
    - Are the "colors" of the tank changing?
      - Algae, sand, rocks, fish, corals, etc.

Tank Maintenance:

- Do ¼ tank water changes every 6 months or as needed
- Change replaceable filter media as recommended
- Clean glass as needed
- Replace bulbs every year
- Feed fish as recommended (once/day)
- Feed other life as recommended (once every few days)
- Adjust lighting cycle throughout the year

Potential Problems:

- Algae Bloom
- Power Loss
- Metals in Water
- Infections
- Incompatibility of Tank Mates

Do Not:

- Use a "cure" in your main tank
  - Can kill invertebrates (shrimp, crabs, etc.)
  - Can throw tank balance off
  - Can discolor water
- Insert new critters/fish without proper acclimation procedure
  - Can kill new inhabitant
- Purchase new inhabitants without doing your research first!

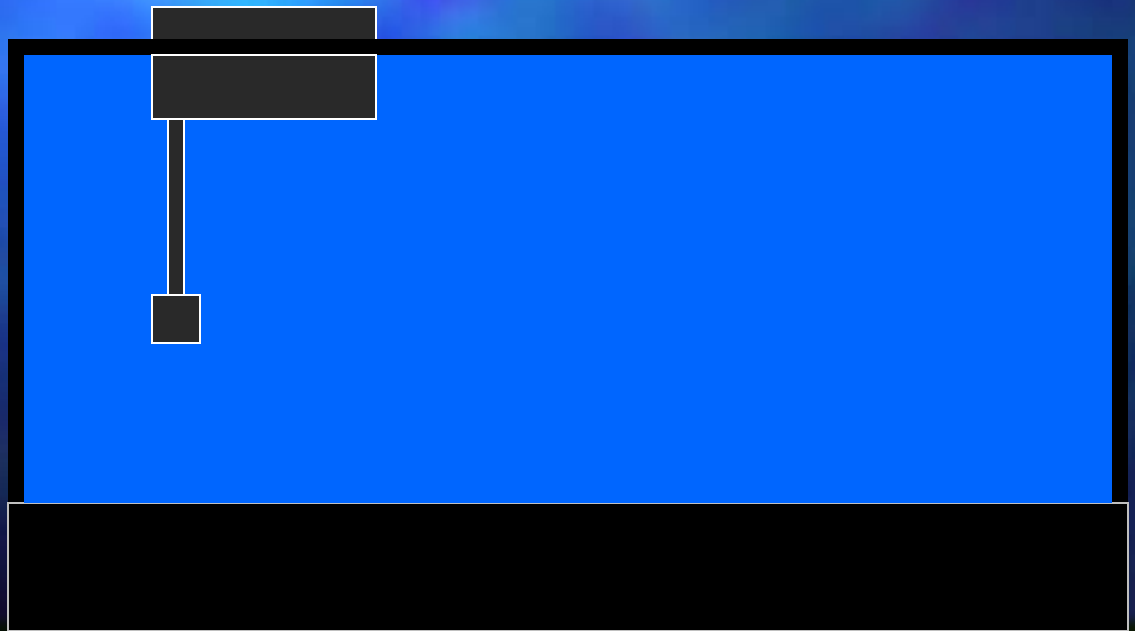
How To Set-Up Your Tank

First choose the size of your tank & stand:

- Consider the following:
  - Placement of tank
  - Overall Cost
  - Bowfront or Flat?
- Place tank & stand in location.
- Install backdrop on tank if desired.

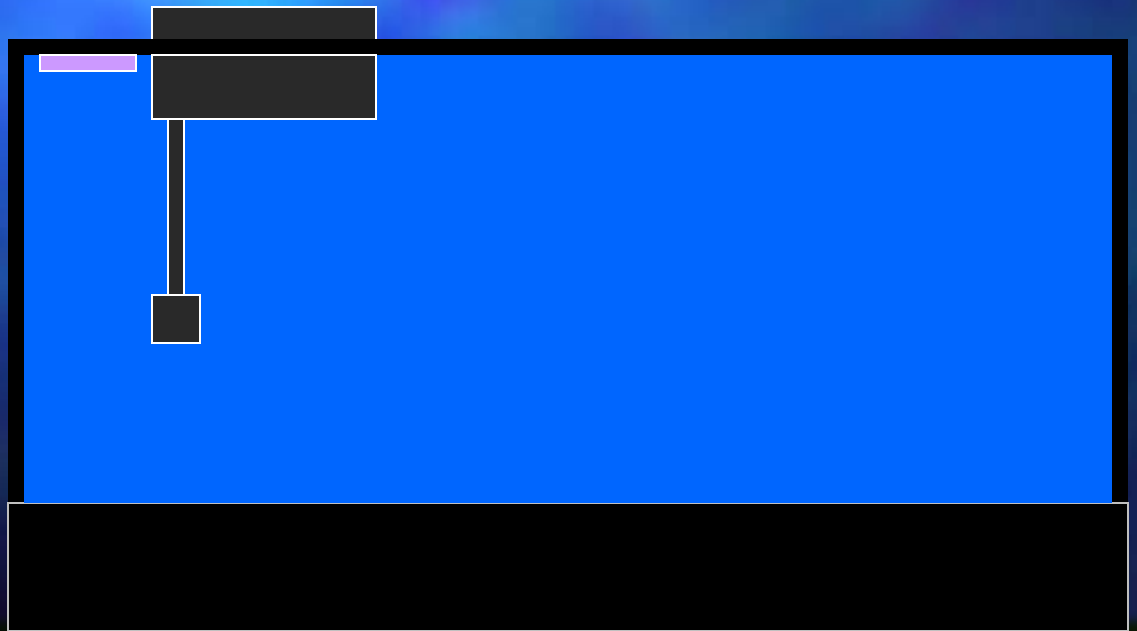
Next, install filtration system:

- For advanced filtration, have a specialist install your system.
- For small basic system, follow instructions supplied with system.



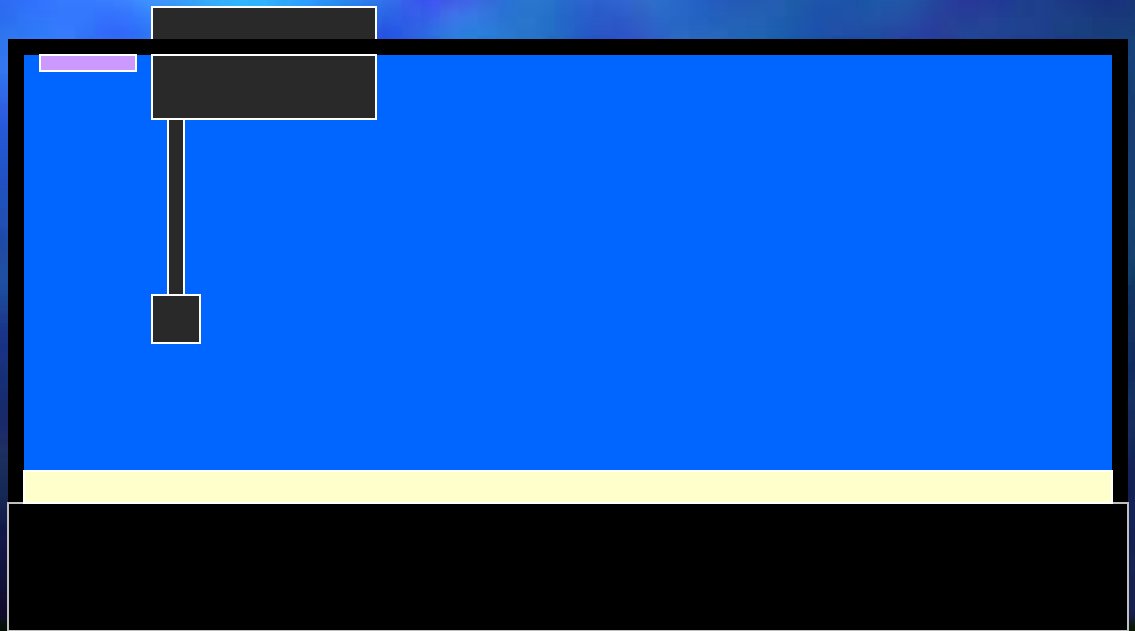
Next, install Thermometer:

- Place thermometer in a location easily seen from outside the tank, preferably on the side.
- Some go inside the tank, while others stick to the outside.



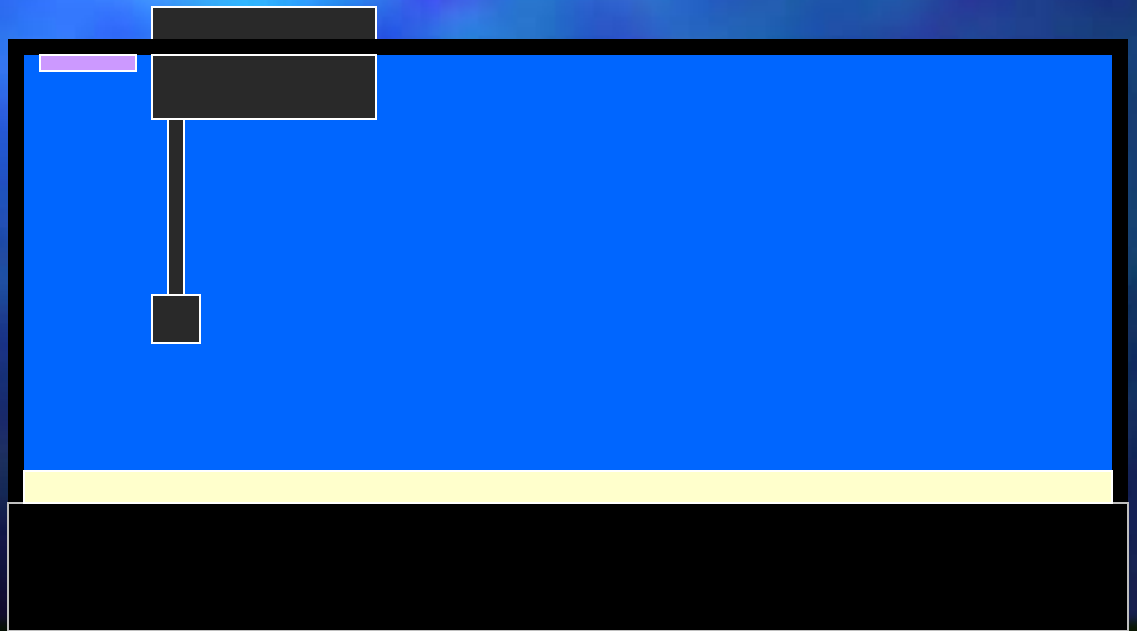
Next, insert bottom media:

- Carefully pour media over bottom of the tank.
- Spread evenly and slowly.



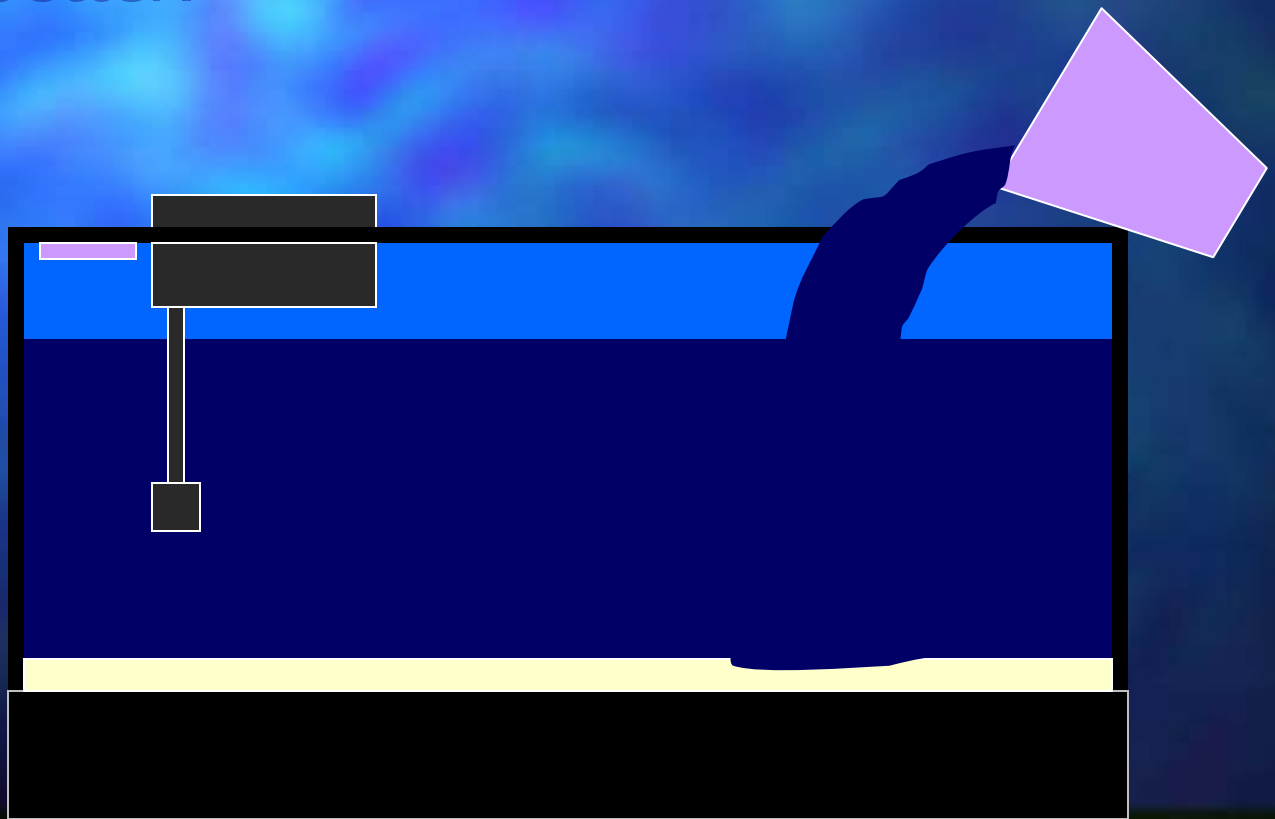
Next, mix and add salt water:

- Do not fill tank completely up if you have live rock to insert – It takes up space!



Next, mix and add salt water:

- Carefully & slowly pour salt water over media.
- The less turbulence when pouring the better.

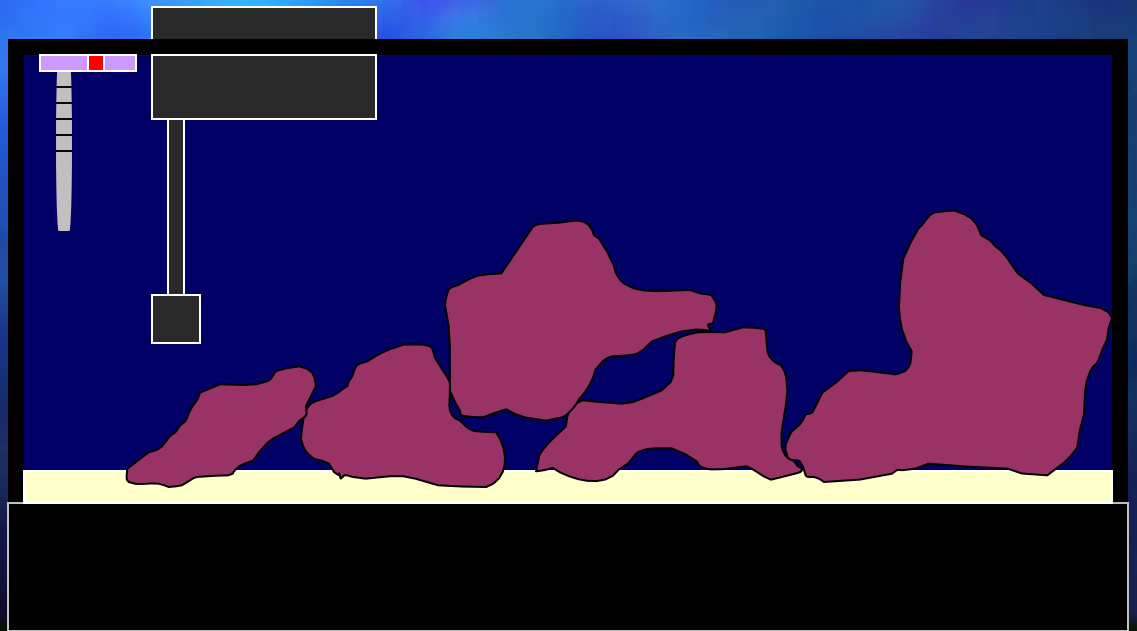


Next, install Heater:

- Install so that the indicated water line is level with the top of the water.
- Make sure the suction cups are fully depressed against glass.
- Set heater to 78° F.

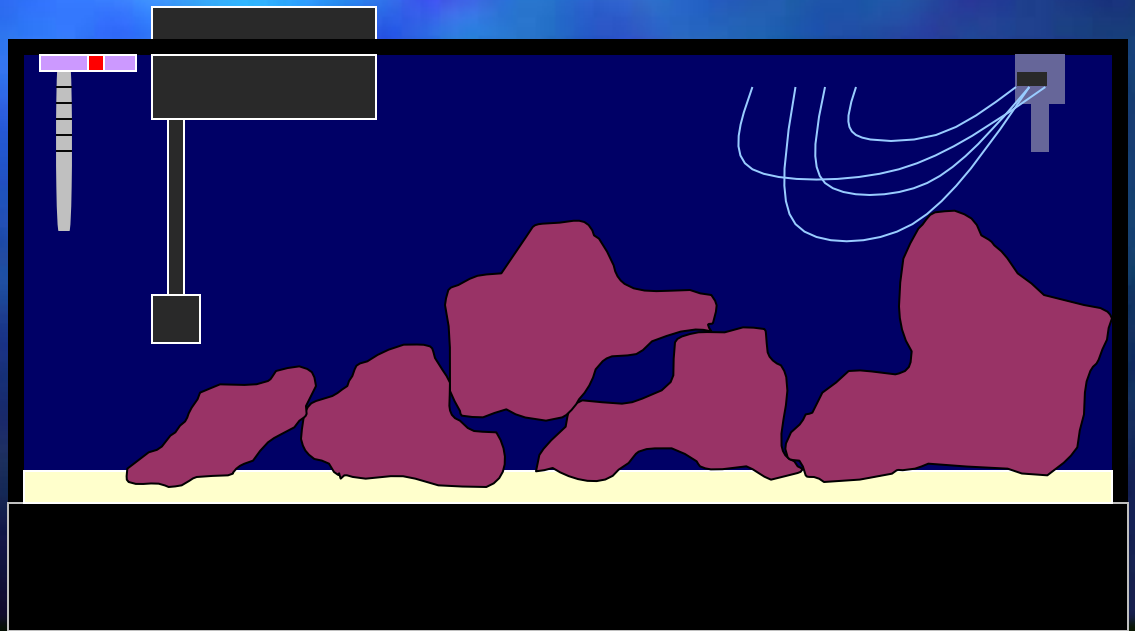
Next, place Live Rock in tank:

- Carefully place each rock so that holes & spaces are created.
- Handle carefully so as not to injure small organisms.
- DO NOT DROP ROCKS!



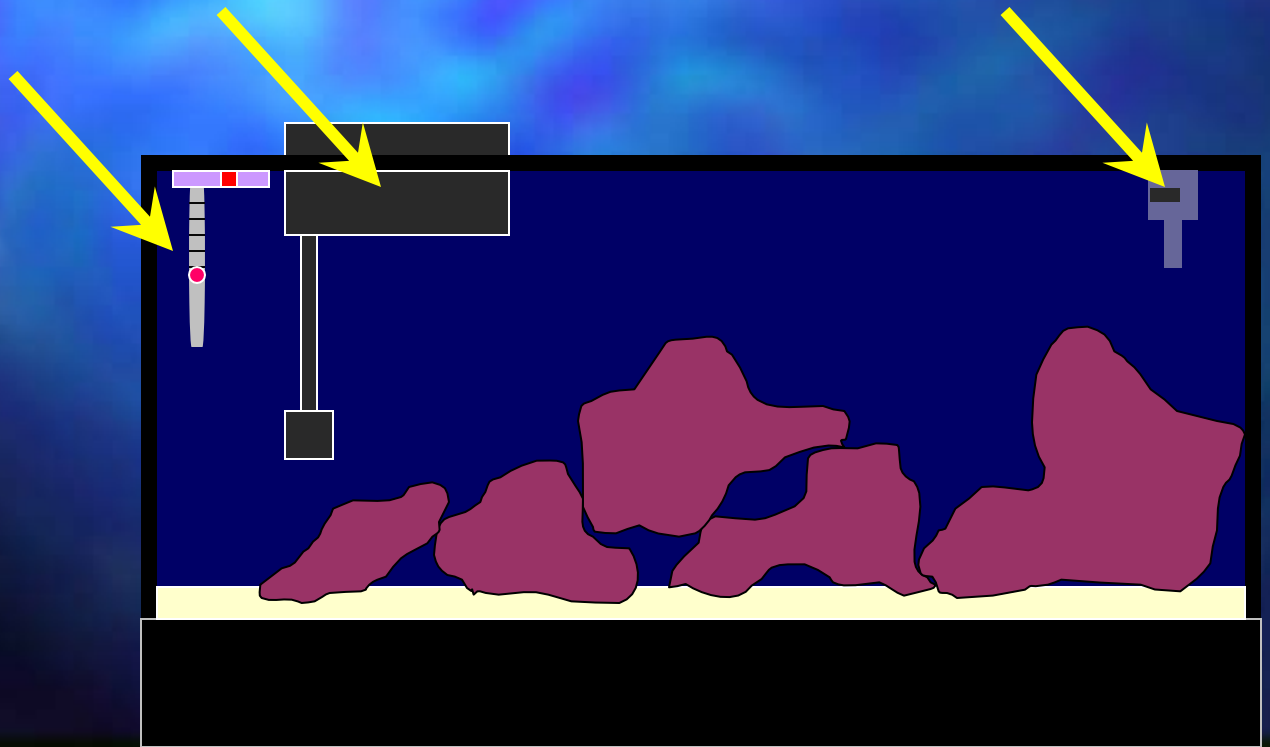
Next, install power head:

- Make sure suction cups are fully depressed against glass.
- Angle jet for proper circulation.



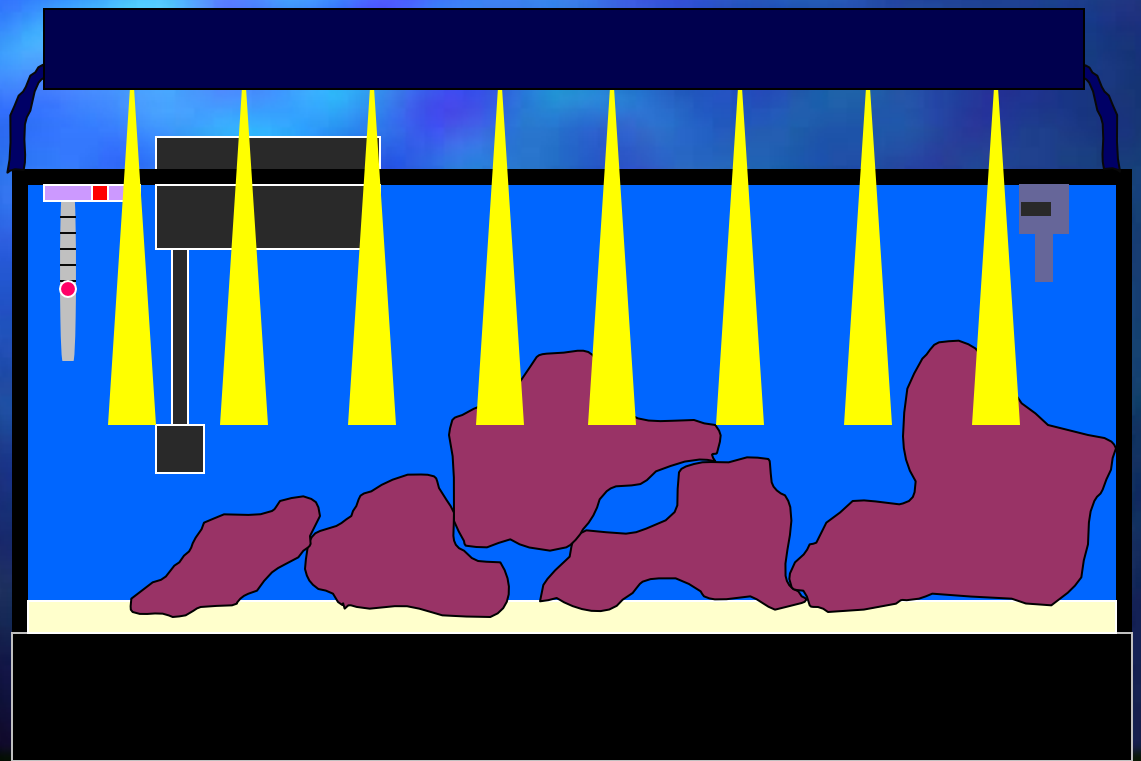
Next, plug in and start up tank:

- Make sure filtration starts pumping water.
- Make sure power head pumps water and adjust jet.
- Make sure thermometer light comes on.



Next, install lighting canopy:

- First install new bulbs.
- Then secure canopy on tank with braces.
- Then plug in and turn on lights.



Now you must be patient:

- Before you purchase any livestock, we must wait until the biological filtration has had a chance to become established.
  - If using Live Sand & Live Rock, this should only take 3 to 5 days.

Now you must be patient:

- Otherwise, measurements must be taken throughout the Ammonia – Nitrate – Nitrite cycle. This takes 1 – 2 months!

Now you must be patient:

- Continue testing all parameters to ensure proper set-up.
- Look for any spikes in Ammonia or Nitrates, and for any drastic change in pH.

Now the fun begins!!

- Once tank is established, you can now begin adding livestock!
- Start small and simple.
- Order of introduction is critical!

Fish Compatibility:

- While many fish will get along, some can be very aggressive and territorial.
- The order in which you introduce them to the tank is critical.
  - Introduce the *least aggressive* fish first, the *most aggressive* last and with caution!
  - To avoid territorial conflict, try moving rocks around in tank.

Fish Compatibility:

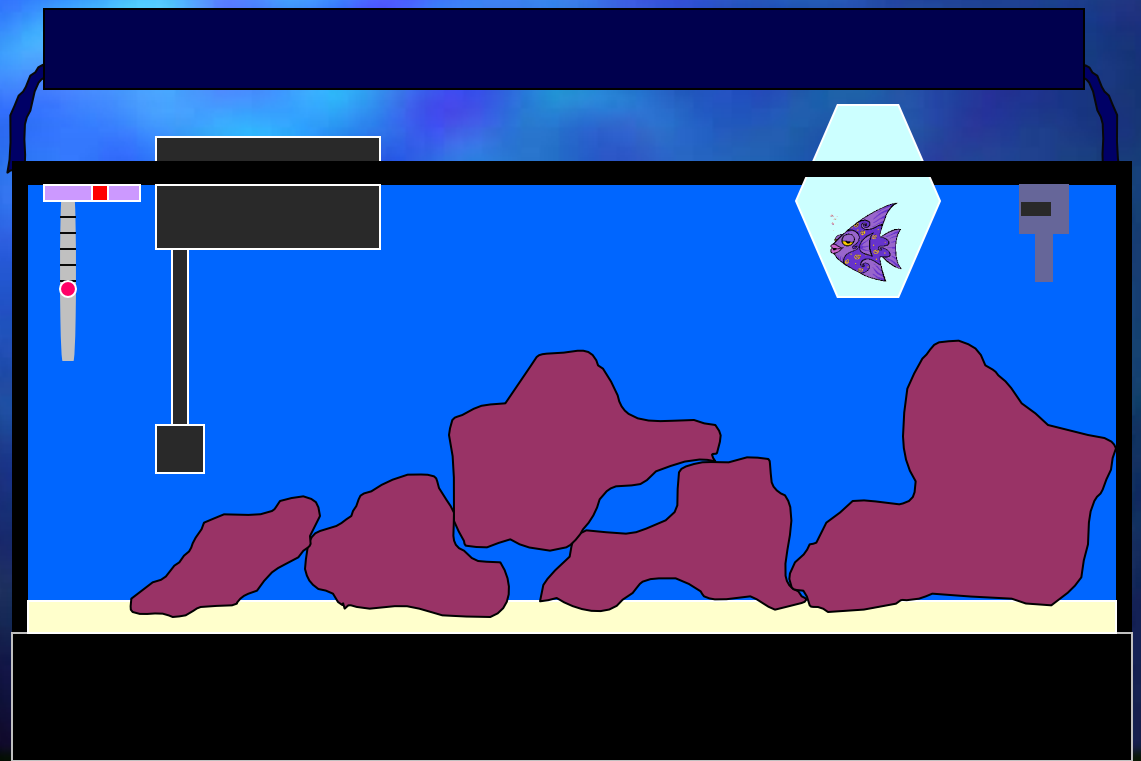
Choose your fish wisely!

- Some fish are carnivores and will eat other smaller fish or invertebrates!

Now the fun begins!!

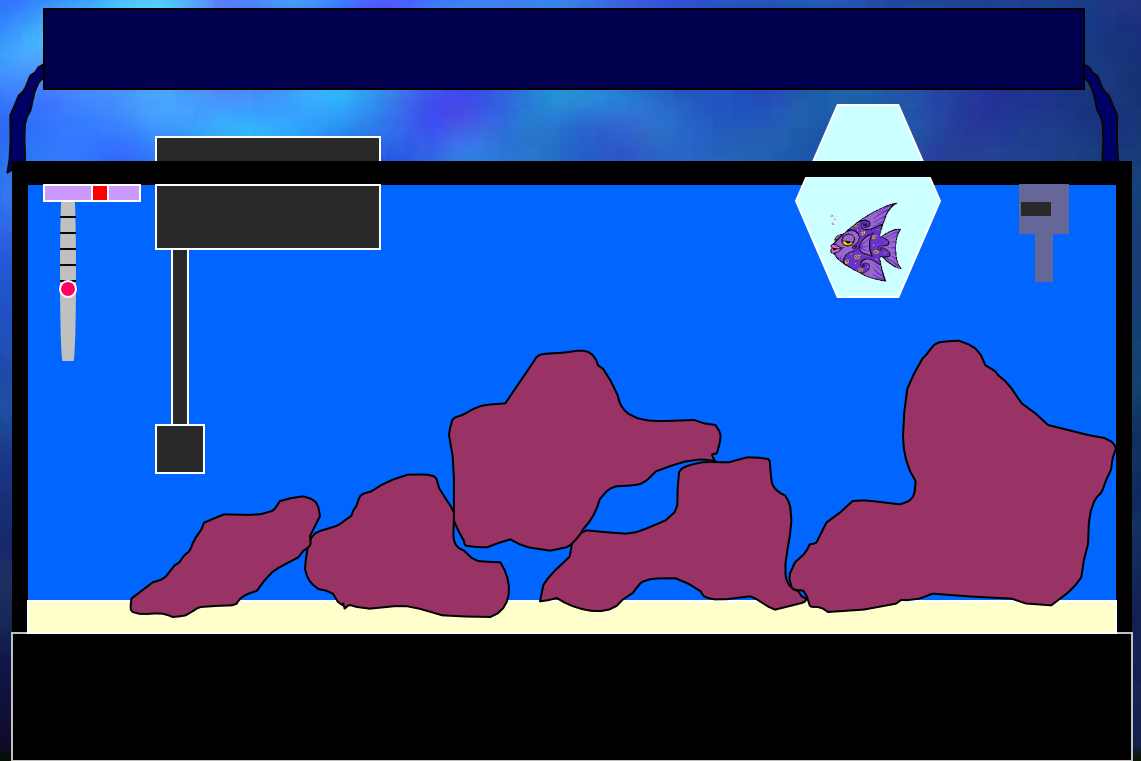
- Insert bag with fish & water with top open and let stand for 10 minutes.

- Continue to pour small amount of tank water into bag every 5 minutes for 45 minutes.



Now the fun begins!!

- Pour ½ of the water out of the bag and continue to pour small amount of tank water into bag every 5 minutes for 30 more minutes.
- Then slowly pour fish & water into tank.



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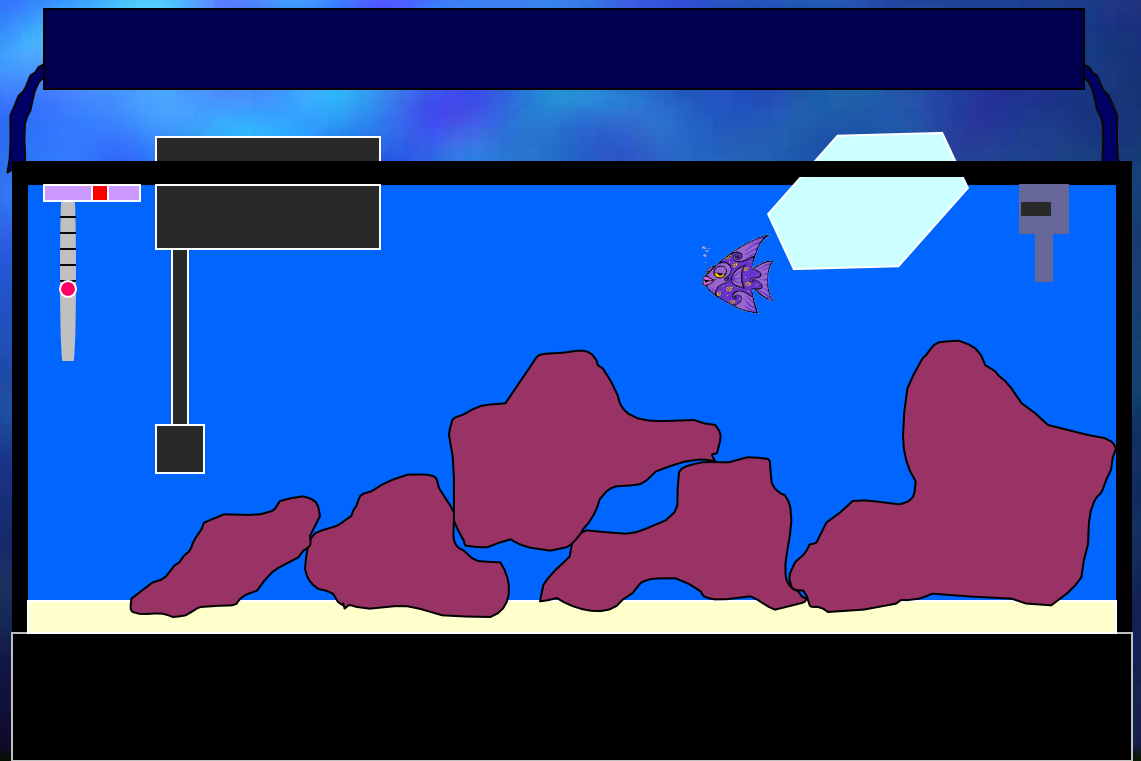
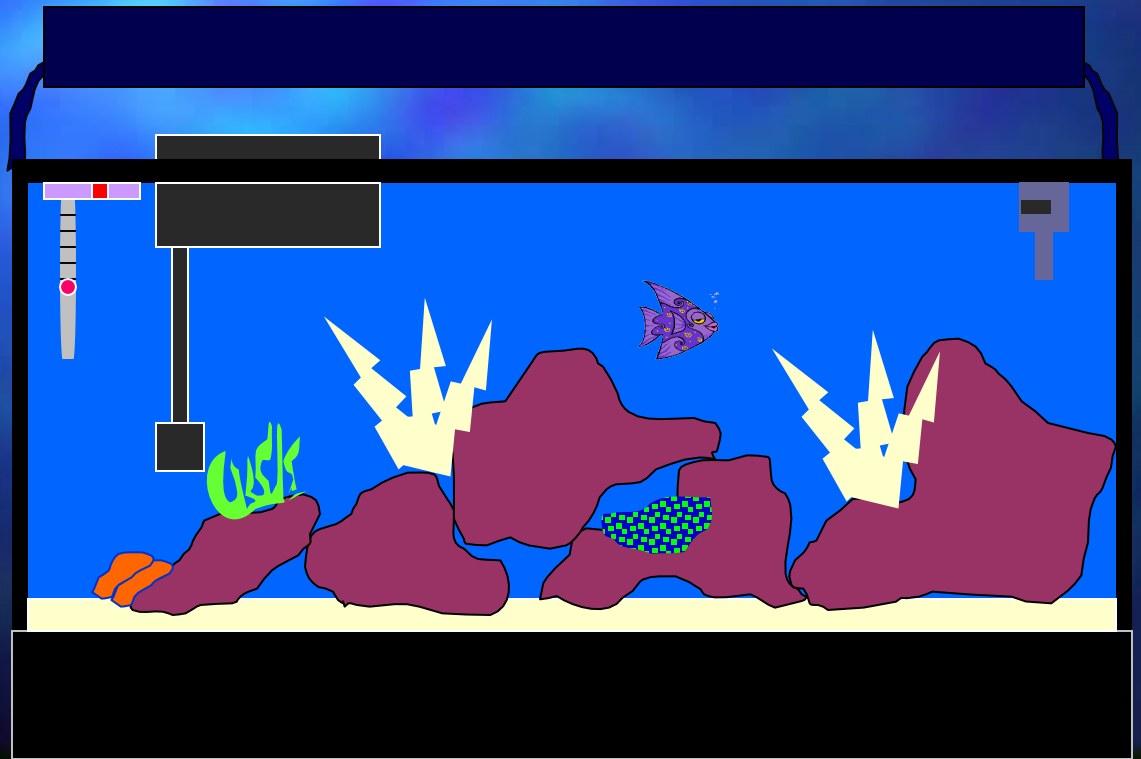


Now the fun begins!!

- Watch the new fish carefully for any signs of distress.
- If introduced with other established fish, watch for conflicts and battering from other fish.

Now the fun begins!!

- Add corals for a beautiful landscape!



Once established, enjoy your tank and make changes slowly and carefully.

An established tank is beautiful and a great attraction for guests at your home!

Precautions:

- I highly recommend *NOT* keeping carnivorous fish!
  - They generally eat crustaceans
  - They will eat smaller tank mates
  - They require live feeder fish
    - Expensive
    - Can easily introduce harmful diseases into tank.

Precautions:

- Be careful when purchasing corals:
  - Some are toxic/poisonous
  - Make sure they are compatible with your current tank.
  - Some fish/crabs will eat/destroy some corals.