

What we need:

A device to automatically feed fish on an adjustable schedule.

Criteria:

1. Cheap Price - Can't be too expensive to make
2. Durability - Will be in close proximity to water
3. Confidence in Complexity - We have to build this, but we also want a good grade.
4. Adaptability - Does it only fit one fish or fish tank?
5. Cool factor - You always gotta allow the rule of cool!

Rating system:

Each one of our four teammates vote on the design from 0 to 4 for each criteria. The mean is collected from our votes to create the displayed value for the criteria and the sum of those is the overall resting.

Design Concepts:

1. Create a Water Wheel contraption that uses the aquarium's pump flow to move the water wheel and turn gears that will equal an amount of hours. This contraption will be placed to float or be fixed to the tank near the aquarium pump's output. The wheels would be able to be lowered into the water via remote control. Each wheel would lessen the time until feeding as they work together to dump the fish food into the water.
2. Using a control panel mounted on top of the aquarium we can adjust several feeding time frequencies and will be able to see the countdown until the food is dispersed. A motor will rotate the container to disperse the fish food when the countdown ends and resets.
3. Emergency fish feeder. Do you like the intimate time you get when feeding your fish personally? Then this bomb shaped smart feeder will help! Load the fish food inside the water proof container, close it, and enter the time in minutes until when you want the fish to be fed. Then while you're away, the food bomb will pop open from where you placed it at the bottom of your tank and release it's fish food.
4. Fish food sprinkler. Like a water sprinkler, but for fish food.
5. The fish that feeds the fish. It'll be a robotic fish that has the food stored inside of it. It can be controlled with a controller for a little extra fun and will release the food from the blowhole either on command or on a preset time since the last release.
6. Live food sub tank. For carnivorous fish owners is a smaller tank with a remote controlled gate that opens to release the feeder fish to your lovable bigger fish.

Design	Cheap Price	Durability	Confidence in Complexity	Adaptability	Cool Factor	Total points
Water Wheel	2.50	1.75	2.25	0.75	3.25	10.50
Control Panel + Motor	3.00	3.25	3.25	3.50	0.75	13.75
Fish Food Bomb	2.25	1.75	3.00	4.00	2.25	13.25
Fish Food Sprinkler	1.50	3.00	3.25	2.00	0.50	10.25
Robo-Fish	0.50	0.75	1.00	3.00	3.25	8.50
Feeder Fish Sub-tank	2.00	1.75	4.00	3.25	1.00	12.00

Notes:

- The cheap price rankings were heavily influenced by the idea of having to waterproof any circuitry.
- The Durability ranking was influenced by what items would be making contact with the water or not.
- Adaptability was determined largely by if the device could be used with different types of fish food or in different sized aquariums or even a pond.
- Cool factor was very biased from rater to rater.

Final Decision:

Due to it's high ranking throughout our chosen parameters, we've decided to follow the design of the control panel and monitor for our project.