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National Mississippi River Museum and
Aquarium

Part I: General Overview of Business

The National Mississippi River Museum and Aquarium was founded by the Dubuque County Historical Society in 2003. In conjunction with the DCHS the Mississippi River Museum works to explore the life of Dubuque and the Mississippi River. Daily, staff research, educate, interpret and promote conservation of the area's historical and natural environment.

Part II: Job Specifics

- The National Mississippi River Museum and Aquarium have teamed up with the Genoa Fish Hatchery and the Iowa DNR to propagate a species of endangered freshwater mussels.
- Throughout this process there are many working parts; museum staff is charged with the daily care and data collection concerning the mussels. Staff monitors a SUPSY device (submersible up welling system) and uses data collected to provide an insight to Iowa DNR concerning the rehabilitation of this endangered species.

Part III: Introduce the Problem

- The museum was posed with the endangered status of the Higgin's Eye Pearly Mussel. The museum needed to develop a device/devices in which they could cultivate mussels through all phases of the life cycle and be financially reasonable. The goal was to keep the devices in the river and eventually when the mussels have matured they would be released in depleted areas. The devices would be then used again year after year.

Part IV: Background

- Students will need to do some research concerning the life cycle of a freshwater mussel, the Mississippi River Ecosystem, and the effects of invasive species.
- Everything the students need to know to solve the problem are the same things the museum staff needed to know in order to succeed in creating their devices..

Part V: Business Solution

In cooperation with the Genoa Fish Hatchery and the Iowa DNR the National Mississippi River Museum created the SUPSY bucket. This bucket was created using the following: 2 high pressure air blowers, 2, 2 gallon buckets with lid, 1" PVC, window screen, pool noodles, bricks, string, aluminum rivets, air hose and zip ties. In addition to this SUPSY bucket, staff have cages where fish are housed during the initial phases of a mussels life cycle; the larvae of the mussels attaches to the gills of fish and use them as living hosts to survive.

Part VI: Student Solutions

I believe students will develop similar devices. The devices will need to be made out of easily obtainable material, the SUPSY bucket is a fairly simple/ common sense device. Different materials may be used, but the overall concept will be similar.