

Olfactory Conditioning Apparatus for Fruit Flies

Week 9 – April 2 to April 8, 2009

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Problem Statement:

The aim of this project is to improve or completely re-design a device that is currently used to test fruit flies' olfactory sense, memory, and ability to learn. The current device is producing some inaccurate results because the fruit flies experience changes in air pressure and airflow. Airflow and pressure change need to be kept at a minimum while odors are introduced and cleared from the device.

Restatement of Last Week's Goals:

The team's goals from last week were to research pumps, begin assembly of the tubing setup, and to research conductive paint.

Summary of Accomplishments:

- Center slider piece has been ordered
- Etched cylindrical shocker price estimate received
- Tubing assembly is near completion
- Pumps have been picked out

Team Goals:

- Place final orders for pumps, electric paint, etched cylindrical shocker, and any additional parts needed
- Continue assembly and preliminary airflow tests as parts arrive

Activities:

Rob	4.3.2009	Team Meeting – discussion of purchases and tubing assembly	1 hr	2 hr
	4.8.2009	Individual Research – electric paint	1 hr	
Graham	4.3.2009	Team Meeting – discussion of purchases and tubing assembly	1 hr	1 hr 30 min
	4.6.2009	Team Meeting	30 min	
Chuck	4.3.2009	Team Meeting – discussion of purchases and tubing assembly	1 hr	3 hr
	4.5.2009	Individual Research - pumps	1 hr	
	4.6.2009	Team Meeting	30 min	
	4.8.2009	Individual Research - pumps	30 min	
Scott	4.3.2009	Team Meeting – discussion of purchases and tubing assembly	1 hr	4 hr 30 min
	4.6.2009	Team Meeting	1 hr	
	4.7.2009	Hardware research, ordering, and assembly (tubing and valve components)	2 hr 30 min	

Difficulties:

The etched cylindrical shocker idea is still a concern. We are unsure if the idea will work, but the client knows this and will not be very disappointed if it does not work. Communication with the client about ordering has been slow, but this is not a huge surprise.

Project Timeline:

	February				March				April				
Tasks	4	11	18	25	4	11	18	25	1	8	15	22	29
Project research	█	█	█	█	█	█	█	█					
Brainstorming	█	█	█	█	█	█	█	█					
PDS		█	█	█	█	█	█	█					
Prototype design				█	█	█	█	█					
Prototype building						█	█	█	█	█			
Actual device design						█	█	█	█	█			
Ordering							█	█	█	█	█	█	
Expected shipping							█	█	█	█	█	█	
Device manufacturing							█	█		█	█	█	█
Testing							█	█			█	█	█
Re-designing							█	█			█	█	█
Re-testing							█	█				█	█
Presentation					█		█	█					█
Progress report	█	█	█	█	█	█	█	█	█	█	█	█	█
Website	█	█	█	█	█	█	█	█	█	█	█	█	█

Expenses:

Tubing and connections have been estimated to cost just under \$200, the new center piece will cost around \$320, and the etched cylinder will cost approximately \$110.