Jonathan Quang - Period 1  
10.4.15  
Bio Lab Techniques  
Ms.Quenzer

**Planaria:**   
These organisms are well known to be able to regenerate from tissue lost due to age or physical trauma. Early scientists described it as being immortal under a knife. They have numerous photoreceptors. They are also acoelomates, a body without a body cavity. They also have cilia in some places and secrete mucus to help get around. Some species of planaria reproduce sexually and others asexually by splitting off their tail and regenerating from both halves.   
Fun Fact: When given drugs such as cocaine, planaria will show withdrawal symptoms similar to humans.  
Possible Experiment: Give the Planaria several legal addictive substances, such as caffeine or cough syrup, and see if they exhibit withdrawal.

**Daphnia**  
These microcrustaceans are commonly known as water fleas. They reach maturity in five to ten days, can reproduce clonally. They can also be induced to reproduce sexually. Daphnia have ten pairs of appendages. They live in fresh water, though they can handle salty water up to a certain concentration. They are filter feeders whose main diet is composed of algae. Daphnia in nature are almost always found with parasites with some populations even being driven to extinction by them. Some of these parasites infect humans. Consuming water with live Dapnhia may result in a parasite attempting to burrow through human flesh and erupting from the skin.  
Fun Fact: Their hearts beat at 200 times a minute at 20 degrees Celsius.  
Possible Experiment: Test the rate at which they reproduce at different concentrations of salt.

**Drosophila melanogaster**  
These are commonly known as fruit flies. They have tan bodies while their rear bodies are black. They lay up to 500 eggs near wet, fermenting, organic material, making them ideal for doing experiments. They are 3mm in length and 2mm in width. Males have a shiny black abdomen while females are tiger striped. They live almost everywhere where it is not cold and there is some water available. This combined with reproductive potential makes these flies a general nuisance. In captivity, they will only live for three tenths of a year.  
Fun Fact: Male fruit flies that are deprived of copulation find comfort in alcohol  
Possible Experiment: Put male fruit flies with female fruit flies with the male to female ratio gradually rising. Then dilute some alcohol and leave it in each jar. Measure how much alcohol is left and compare it to a control without alcohol to account for evaporation.

**Hydra**These cnidarians display radial symmetry and reproduction via budding. As such, they also have the ability to regenerate, and they also do not age. When they do reproduce sexually, the female releases eggs into the water and the male releases sperm. The eggs harden, allowing the egg to survive winter conditions. They use nemocysts to stun prey. Hydra are sessile, though they can stretch, contract, and bend their bodies. They may also detatch and glide to a different location by moving their tentacles.  
Fun Fact: The nemocysts of hydra can only be used once. They are usually replaced after 48 hours.  
Possible Experiment: Since hydra are sensitive to pollutants, we can give a population of hydra of common pollutants at varying concentrations to see how many survive.

Citations

Begin, S. (n.d.). 13 Things You Didn't Know About Planarians. Retrieved October 4, 2015, from http://mentalfloss.com/article/61665/13-things-you-didnt-know-about-planarians

Daphnia. (n.d.). Retrieved October 4, 2015, from http://www.nih.gov/science/models/daphnia/

Descriptions and articles about the Common Fruit Fly (Drosophila melanogaster) - Encyclopedia of Life. (n.d.). Retrieved October 4, 2015, from http://eol.org/pages/733739/details

Top 10 Fascinating Facts about Fruit Flies | Alternative. (n.d.). Retrieved October 4, 2015, from http://beforeitsnews.com/alternative/2012/07/top-10-fascinating-facts-about-fruit-flies- 2431711.html

Hydra | EcoSpark. (n.d.). Retrieved October 4, 2015, from http://www.ecospark.ca/changingcurrents/hydra