Name _____ Class _____ Date _____

Data Lab

DATASHEET FOR IN-TEXT LAB

Analyzing Experimental Design

Background

To study the effects of common substances on the heart rate of a tiny aquatic organism known as *Daphnia*, students placed a *Daphnia* in a drop of water on a glass slide. The students then added 1 or more drops of a test substance dissolved in water to the slide, waited 10 seconds, then counted heart beats for 10 seconds. The students used a clean slide and a new *Daphnia* each time. Their data table is shown below.

Heart Rate of *Daphnia* in Different Solutions

Substance tested	Heart rate (beats per minute)
None	58
Coffee	65
Ethanol	50

Analysis

1. **Identify** the dependent and independent variables in the experiment.

2. **Identify** the experimental groups in the experiment.

3. **Propose** a liquid that could be used for a control group.

4. **Evaluate** how the instructions could be changed to improve the design of the experiment.

5. Critical Thinking

Applying Information Design an experiment that students can perform to verify the prediction that coffee will increase heart rate in *Daphnia*.