Name Period Date

Unit	Handout
1	60

IBI Lesson 9: Finding the Heart Rate of Daphnia

Purpose:	To find the heart rate of *Daphnia* under normal conditions, with caffeine, and with an alcohol solution.
Guiding Question:	How do stimulants and depressants affect the heart rate of *Daphnia*?

Background

In this activity you will find the heart rate of the *Daphnia* in three conditions: "normal," with caffeine, and with a solution of diluted ethanol (a type of alcohol). Because the *Daphnia's* heart rate is so much higher than what we are used to, we have to use a different method to calculate it. Please watch as I demonstrate how to determine the heart rate of a *Daphnia*.

Practice Data

Trial 1	Trial 2	Trial 3

Average beats per 10 seconds: _____ x 6 = _____ beats per minute.

Normal Conditions

Trial 1	Trial 2	Trial 3

Average beats per 10 seconds: _____ x 6 = _____ beats per minute.

Caffeine Solution

Trial 1	Trial 2	Trial 3

Average beats per 10 seconds: _____ x 6 = _____ beats per minute.

Alcohol Solution

Trial 1	Trial 2	Trial 3

Average beats per 10 seconds: _____ x 6 = _____ beats per minute.

Final Results
Record the total beats per minute for each scenario in the table below.

"Normal" (Control)	Caffeine	Alcohol

Concluding
Write a paragraph that describes the outcome of this lab. Include data in your answer.

Reflecting
The purpose of this activity was to show how different factors affect the heart rate of a *Daphnia*. Consider this: the temperature in a pond changes over time. What do you predict would happen to the *Daphnia's* heart rate in lower temperatures? In higher temperatures? How would you test this idea? What other factors do you think might affect a *Daphnia's* heart rate?