Name_____ Period _____ Date _____

Water Flea

STEM Sims

Lesson 1: Alcohol Effects

People have used alcohol for centuries. But what exactly does alcohol do to a person? You'll use a water flea to investigate some of the effects of alcohol. Hopefully the water fleas are of legal flea drinking age. Get ready to liquor up your fleas.

Doing the Science

1. Start the Water Flea Simulation by clicking on the "Sim" tab.
2. You can use the Timer Counter on the left side of the screen to find the water flea's heart rate or you can use a stopwatch. To use the Timer Counter, click the "Start" button, then click the "Click Me" button each time the flea's heart beats. After getting in the rhythm of the beats, click the "Stop" button and the flea's heart rate will be displayed in beats per minute in the space below the buttons. Record this value (normal heart rate) and the gender, feeding status, and mass of the flea in Table 1 below.
3. Click the "Alcohol" button, then select the "Single Dose" button. Count and record in Table 1 the flea's new heart rate. Click the "Clear" button.
4. Click the "Alcohol" button, then select the "Double Dose" button. Count and record in Table 1 the flea's new heart rate. Click the "Clear" button.
5. Click the "Feed Flea" button and repeat steps 2 – 4. Make sure to record your data in Table 1.
6. Select a Male water flea and repeat steps 2 – 5. Make sure to record your data in Table 1.

Table 1.

Flea	Heart Rate	Gender	Feeding Status	Mass
Normal				
After Single Dose Alcohol				
After Double Dose Alcohol				
Normal				
After Single Dose Alcohol				
After Double Dose Alcohol				
Normal				
After Single Dose Alcohol				
After Double Dose Alcohol				
Normal				
After Single Dose Alcohol				
After Double Dose Alcohol				

Do You Understand?

1. How should alcohol best be classified, as a depressant or as a stimulant? Please explain your response.

2. Did the male and female respond exactly the same to the alcohol? Please explain your response?

3. How did eating a meal impact the effects of alcohol on the flea's heart rates?