Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_

**Determining the Speed of an Ant:**

**Objective:** In this activity you will:

1. Use your scientific mind to accurately measure the speed of an ant.

2. Review several measuring techniques used in previous science classes.

**Materials Available:**

‑1 ant (you've captured + any materials that you used to keep your ant alive.)

‑ 1 meter stick

‑ 2 rulers

‑ 1 graduated cylinder

‑ triple beam balance

‑ various beakers

‑ calculator

**Procedure**

PART 1: DESIGN A PROCEDURE TO DETERMINE YOUR ANTS SPEED.

Write out the steps that you will follow to determine the speed of an ant in meters per second.

Include every detail. (Include all formulas).

1. What is the equation that you will use to determine speed?

2. Perform your calculations below: (Be sure to include units for all numbers!)

3. What is the calculated speed of your ant? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**PART 2: REVIEWING METRICS**

Determine the volume of your container that you brought the ant to school in.

\_\_\_\_\_\_\_ Milliliters

\_\_\_\_\_\_\_ Liters

2. Briefly describe how you did this measurement.

Determine the mass of your container. (Without the ant or lid.)

\_\_\_\_\_\_\_ Milligrams

\_\_\_\_\_\_\_ Grams

\_\_\_\_\_\_\_ Kilograms

Determine the mass of the water that fits in your container.

\_\_\_\_\_\_\_ Milligrams

\_\_\_\_\_\_\_ Grams

2. Briefly describe how you did this measurement.

3. Assume that your ant weighs 1 gram. When it is in your container without the lid, what % of the mass is "biomass" (living mass)?

**Analysis Questions:**

1. What is one problem that you encountered when trying to determine the speed of your ant?

How did you attempt to solve it?

2. Convert the speed of your ant to Kilometers per hour. Then convert that number to miles

per hour. Show all work with units and all formulas used. Are these practical units for the

numbers that you calculated? Explain.

Note: 1 mile = 1.609km