MEASURING CO_2 PRODUCTION USING SODA LIME:
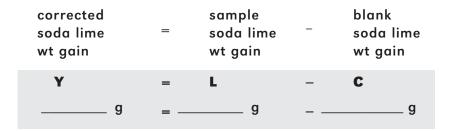## *DATA FORM FOR SAMPLES*

For use with Protocol 8C: Measuring the Rate of CO_2 Production
Complete this form for each soil sample.

Name(s) _____

Today's date _____ Sampling date_____

Soil sampling ID number _____

Soil sampling location _____

Type of area sampled (such as forest or field) _____

Soil description _____

Date and time soda lime incubation started _____

Date and time soda lime incubation ended _____

Total # days incubation (should be two days) _____

Protocol 8C, Part 2: Prepare soil samples.

Before incubation:

Weight of container (without lid) (**G**) = _____ g

Weight of container (without lid) and soil (**H**) = _____ g

Total soil wt (I) = **H – G** = _____ g

Protocol 8C, Part 3: Prepare soda lime.

Before incubation:

Weight of petri dish bottom = _____ g

Weight of dish and soda lime before drying = _____ g

Weight of dish and soda lime after drying (**J**) = _____ g

Protocol 8C, Part 5: Calculate the amount of CO_2 produced.

After incubation and re-drying of the soda lime:

Weight of dish and soda lime = _____ g

Weight of dish and soda lime after re-drying (**K**) = _____ g

Sample soda lime wt gain (L) = **K – J** = _____ g

MEASURING CO_2 PRODUCTION USING SODA LIME:
DATA FORM FOR SAMPLES (continued)

Calculating the rate of CO_2 production

1. Calculate the corrected weight gain for soda lime:

corrected soda lime wt gain		sample soda lime wt gain		blank soda lime wt gain
Y	**=**	**L**	**−**	**C**
_____ g	= _____ g		− _____ g	

The answer will be in grams of CO_2 produced. For use in the final equation, you'll need to convert this to milligrams:

_____ g x 1000 mg/g = _____ mg CO_2

2. Calculate the dry weight of the total soil sample (using soil weights from this form and % moisture content from Part 1, Step 6 on the **Data Form for Soil Moisture Content**):

Dry weight = total soil wt – (moisture content x total soil wt)

Z = **I** – (moisture content x **I**)

_____ g = _____ g – (_____ x _____ g)

This answer will be in grams of dry soil. For use in the final equation, you'll need to convert it to kilograms:

_____ g x 0.001 kg/g = _____ kg dry soil

3. Calculate the rate of CO_2 production in milligrams CO_2 produced per day per kilogram of dry soil. Use your answers from the previous two steps in place of the Y and Z in this equation:

CO_2 production rate = $\dfrac{\text{Y mg } CO_2 \text{ x 1.69/2 days}}{\text{Z kg dry soil}}$ = _____ mg CO_2/day/kg dry soil

> **NOTE:** If your exposure time was not two days, replace the two in this equation with the correct # days.