

## EARTHLABS: Climate and the Carbon Cycle

### LAB 1B: Student Data Worksheet - How Much Carbon is Stored in a Local Tree?

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

Team members:

\_\_\_\_\_

TREE species name: \_\_\_\_\_

TREE common name: \_\_\_\_\_

Hardwood or Softwood: \_\_\_\_\_

Observations of your tree and its environment.

#### DATA and CALCULATIONS:

Circumference of tree: \_\_\_\_\_ (cm)

Diameter(D) of tree: \_\_\_\_\_ (cm) *To calculate diameter, divide the circumference by 3.14(Pi)*

**Allometric coefficients for your species of tree:**

*“a” coefficient* \_\_\_\_\_ *“b” coefficient*  
\_\_\_\_\_

**Biomass(M):** \_\_\_\_\_ (kg) Use formula  $M = aD^b$

**Mass of carbon stored** \_\_\_\_\_ (kg)

*Multiply total tree biomass (M) \* 0.521 for mass of carbon in  
hardwood trees: \_\_\_\_\_ (kg)*

*Or:*

*Multiply total tree biomass (M) \* 0.498 for mass of carbon in  
softwood trees: \_\_\_\_\_ (kg)*

**Amount of carbon dioxide (CO<sub>2</sub>) absorbed from air to create the mass  
of carbon stored in tree \_\_\_\_\_ kg** *Multiply mass of carbon  
stored(kg) by 3.67*

**Optional:**

**Amount of tree carbon(kg) = \_\_\_\_\_ metric tons** (*1 metric  
ton = 1000 kg*)

**This is equivalent to \_\_\_\_\_ (lbs) of carbon** (*1 metric ton = 2,205  
lbs*)

**NOTES:**