

# CO<sub>2</sub> Carbon in a Tree (Option B)

NAME:

GROUP MEMBERS:

First, you will measure the circumference of at least one tree near your school. You will then use the data to calculate the amount of carbon stored in each tree.

## Measuring Tree Diameter

1. Use your measuring tape to measure the circumference of the tree. Be sure to measure the circumference approximately 1.4 meters (about 4.5 feet) above the ground. Record the circumference in centimeters in Data Table 1.
2. Next, use the equation  $d = c \div \pi$  to calculate the diameter of the tree (where  $d$  = diameter;  $c$  = circumference; and  $\pi = 3.14$ ). Record tree diameter in Data Table 1.

Data Table 1

Tree	c circumference (cm)	d diameter (cm)
1		
2		
3		
4		
5		

## Calculating Carbon

1. The table below provides carbon content values for trees, based on their diameter values. This table is specific to urban trees in a developed area. The values were calculated in a study conducted in Escambia County, in Florida's panhandle (Escobedo et al., 2009). We can use this information to get a general idea of the amount of carbon in a tree that falls within a certain diameter range. Using the table below, match the diameter you calculated for your tree with the diameter in the left column. Find the carbon storage capacity of the tree and record in Data Table 2.

Data Table 2

Diameter Range (cm)	Carbon Content per Tree (kg)
0–15	22
16–30	250
31–45	604
46–60	1,169
61–76	2,664
77+	15,034

Tree	Carbon content (kg)
1	
2	
3	
4	
5	