

## Part 1 and Part 2.

Sample	Circumference	Color original	Predict CO <sub>2</sub> —lowest To highest	Color after gas bubbled through	Drops used in titration	Percentage CO <sub>2</sub>
A pure CO <sub>2</sub>						= 100%
B room air						
C control						
D human breath						
E car exhaust						

## Part 3.

The number of drops of ammonia solution required to neutralize the solution is proportional to the concentration of carbon dioxide in the gas sample that was bubbled through the solution. The number of drops to neutralize sample A will be the 100% comparison.

If another sample took half the number of drops then it is 50% CO<sub>2</sub>.

1. Write down the percentage concentration of carbon dioxide in each of the samples.
2. Make a bar graph showing how many drops were required to turn each of these solutions back to the same color blue as the control vial. Label both axes of the graph.
3. Answer the following questions:
  - a. If a gas sample is suspected to contain CO<sub>2</sub>, but its presence is not indicated by the BTB test, what conclusion can you draw?
  - b. What does this experiment tell you about the concentration of CO<sub>2</sub> emitted in animal breath and vehicle exhaust?
  - c. What additional information would you need to judge how much CO<sub>2</sub> animals and vehicles each contribute to the total atmospheric concentration of CO<sub>2</sub>?
  - d. What are some solutions that you can consider doing to reduce your contribution of CO<sub>2</sub> into the atmosphere?