

Cycling carbon: seeing how plants use carbon dioxide in the lab (for pupils)

Introduction

Carbon exchange with the atmosphere mostly happens through photosynthesis and respiration. During the growing season leaves take up carbon dioxide. Carbon is stored in the living biomass.

What you will need:

3 boiling tubes

A drinking straw

Boiled water

Phenol red indicator (which is red and goes yellow in the presence of carbon dioxide)

A sprig of *Elodea*

Bright light

Carbon cycle diagram

Safety

Blow through the straw do *not* suck. Only one person in the group should use the straw. Dispose of the straw at the end of the activity.

Activity

1. Pour about 2-3 cm depth of water into each boiling tube (same depth in each).
2. Add a few drops of indicator to each.
3. Breathe out gently through the straw into two of the tubes until the indicator colour changes to yellow.
4. Put the sprig of *Elodea* into one tube.
5. Place all three in bright light and leave them for about 40 minutes.
6. Go back and observe what has happened to the three tubes. Answer the following questions.

Questions

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| <p>Q 1. What happened to the indicator in the tube containing <i>Elodea</i>?</p> <p>Q 2. What does this mean?</p> <p>Q 3. How do you know it was due to the <i>Elodea</i>?</p> <p>Q 4. What caused this to happen?</p> <p>Q 5. Highlight the stage of the carbon cycle on the diagram that this relates to.</p> <p>Q 6. State two ways in which this carbon can be returned to the atmosphere.</p> |
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THE CARBON CYCLE

KEY: Carbon cycle product *carbon cycle process*

