Terrestrial Sequestration – Photosynthesis and Cellular Respiration

Science

Goal: Students define key terms and link plant cellular functions based on experimental data and observations.

Objectives: Students will …

- Observe the differences between photosynthesis and cellular respiration
- Observe the links due to climate changes
- Relate how climate change affects their lives

Materials (for each group):

- 6 test tubes
- 2 test tube racks
- 6 rubber stoppers
- 1 250ml beaker
- 150ml of phenol red
- plant leaves (aquatic plant – Elodea)
- CO_2 generator (250 ml flask with rubber stopper and tubing)
- baking soda
- vinegar
- lamp
- microspoon spatula
- 30 copies of Terrestrial Sequestration – Student Sheet

Time Required: 45-60 minute class period

Standards Met: S1, S2, S3, S4

Procedure:

PREP

- Set up lab stations, enough to have no more than 4 students per group.
- Review background information.
- Make phenol red.
- Purchase Elodea (available online or at local pet stores).

IN CLASS

- Explain to students that they will be investigating the carbon cycle as it relates to global climate change.
- Get students into groups of 3 or 4.
- Hand out Terrestrial Sequestration – Student Sheets.
- Review the background information.
- Review the student procedure and expectations.
- Circulate as students begin the lab.
- Students should continue to monitor the experiment, record data in the chart and answer the questions. When comparing the color in the test tube, place in front of a white background.