Yeast and Carbon Dioxide

Summary
Students will model carbon cycle and the effects of human activities on the respiration of yeast.

Main Core Tie
Science - Biology
Standard 2 Objective 2

Time Frame
1 class periods of 60 minutes each

Group Size
Small Groups

Materials
- student page
  (attached)
- 150 mL Erlenmyer flask
- thermometer
- balance
- 50 mL graduated cylinder
- rapid rise yeast
- sugar
- water
- heat source
- one-holed #5 stopper
- glass tube
- plastic tubing
- ring stand and clamp

Background for Teachers
Safety Issues:
Dispense chemicals in small quantities, warn students not to get on skin, eyes, or eat them.
Duration:
One class period (50 min.) and part of another

Instructional Procedures
Students need to work in groups of 2-4.
Make the yeast solution by mixing 1 tsp yeast in 200 ml water. Expand this to fit the number of
student groups you have. Each group will need 100 ml. The yeast should be started before class
by adding a tablespoon of sugar to the mixture. It should sit for at least 15 minutes to activate
the yeast.
The day before the lab, have students choose the variable they will test and design their
experiment. Have them write their hypothesis on the board and make sure it makes sense and
that no two groups have the same one. That way, they will have plenty of time to do the lab the
next day. Sample hypothesis:
If we use 2 tsp sugar, then there will be more gas.
If we use more yeast, then there will be more gas.
If we raise the temperature to 40 C, then there will be more gas.
If we don't add sugar, then there will be less gas.

Bibliography
Lesson Design by Jordan School District Teachers and Staff.

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