Yeast and Carbon Dioxide

Summary

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

Time Frame

1 class periods of 60 minutes each

Group Size

Small Groups

Materials

- student page
  (attached)
  150 mL Ehrlenmyer 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.

Authors

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