

Carbon Cycle Demo

Summary

Students will be introduced to the carbon/oxygen cycle and the concept of matter reservoirs.

Main Core Tie

Science - Earth Science

[Standard 3 Objective 3](#)

Time Frame

1 class periods of 60 minutes each

Group Size

Large Groups

Materials

Rubber glove
gloves for handling dry ice
brown paper sack to hold dry ice
dry ice
7 black balloons
hammer
clear plastic bag

- Optional Costumes:

cow (can be made by placing black spots on a white t-shirt and attaching a tail to the back of the t-shirt, ears can be glued on a hat), sun (large yellow butcher paper cut-out), tree (a silk tree or make one from butcher paper), ocean (large blue waves from butcher paper), atmosphere (cloud out of butcher paper), decomposer (wrap a student in black garbage bags to look like a worm), and rock (cut hole in top of garbage bag for student to put head through) *These are just ideas, be as creative as you can!

Background for Teachers

This is an introductory activity.

Instructional Procedures

Obtain dry ice from the grocery store the morning of this demonstration

When students come into class hide the dry ice. Pull it out and ask them what it is. Take a small chunk of ice and place it in a rubber glove, this is a good visual and can double as an "udder" for the cow!

Point out to students that they are watching carbon dioxide change state. Ask students what states of matter they are seeing. (solid and gas)

Challenge the students to think of other sources of carbon dioxide in the classroom (plants/people/animals (biomass), air (from our respiration) etc)

Ask for 7 student volunteers. One to represent each of the following: Sun, plant, cow, atmosphere, rocks, ocean, decomposer

Instruct students to dress in their costumes

Using the balloons as carbon dioxide molecules demonstrate the matter cycle. Students should

show movement of molecules by handing the balloons to one another. Make sure to point out the reservoirs where balloons collect. Clear up the student's misconceptions that reservoirs only hold water!

Repeat the cycle with the students several times and then have the students complete the cycle without any direction from you

Have each student get out a blank sheet of paper, with no help from their neighbors they should try to diagram the carbon cycle

Have them switch papers with their neighbors and make any corrections they feel need to be made

Switch papers once more and make any extra corrections or additions the student felt was missed.

Switch papers once more and ask students to raise their hand if they think the paper in front of them is correct. Quickly assess how well you think students grasp the concept.

Ask 3 students to come draw the cycle on the board. As a class choose the correct cycle, or make any modifications necessary to have a complete diagram.

Discuss how the carbon is changing form. (Solids, gasses etc)

Ask how they think this cycle is similar and different if it were to take place in the ocean?

Have students then brainstorm a list of ways humans have influenced the carbon cycle

The last 5 minutes of class have each student draw the carbon/oxygen cycle and label 4 reservoirs without using their notes. Have students turn their papers in as they walk out of the classroom.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)