

Abiotic vs Biotic

Summary

In this activity students will distinguish between abiotic and biotic factors in an ecosystem. They will demonstrate this by identifying and classifying various biotic and abiotic objects.

Main Core Tie

Science - Biology

[Standard 1 Objective 3](#)

Time Frame

1 class periods of 60 minutes each

Group Size

Individual

Materials

- [student sheet](#)

(attached)

10 black garbage bags and rubber bands or boxes with holes for hands to reach through

Collect random biotic and abiotic objects to place in the boxes. Possibilities include: live insects (worms or grasshoppers), yeast culture, walnuts or other nut (in the shell if possible)

dry ice

heat lamp

leaf

soil

water

salt

piece of wood

small battery powered fan

flashlight

(you may need additional supplies depending on your set up, e.g. a pan for water, towels to cover dry ice etc)

Background for Teachers

Experimental Design:

Notes to Teacher:

This lab requires a significant amount of set up. You may want to have a teacher's aide help you prepare the boxes several days before you plan on doing the lab. Be sure if you are using dry ice you cover it so students are not harmed.

Student Prior Knowledge

Students need no prior knowledge. They may come with an incomplete understanding of abiotic factors. Many times they just think dead and do not connect things like temp and elevation.

Instructional Procedures

Gather needed supplies. Use the supplies listed or come up with your own creative ideas.

Prepare the containers for your objects, as shown in the experimental design

Place objects inside the containers.

Label the containers 1-10 and place them around your classroom.

Have students visit each station around the classroom.

At each station they should make 2 observations.

They may do this assignment in groups or individually

Assign groups different boxes, they must tell the class what they think is in the box and how it should be classified

Other groups can present any disagreements

Uncover boxes

Write terms abiotic and biotic

Discuss what questions are best to ask when determining

Show the class a seed or a cyst

Introduce dormancy

Quiz on several objects.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)