

Bread Winner

Standards of Learning

Science 6.1, 6.9, LS.1, LS.12, LS.14

English 6.1, 6.5, 6.6, 7.1, 7.8

Social Studies CE.1

Objective

Students will:

- Conduct a scientific experiment
- Identify the steps of the scientific method and complete an experiment to prove a hypothesis

Materials

- worksheet
- 1 loaf of bread WITHOUT preservative
- 1 loaf of bread WITH preservatives
- Plastic baggies

Background Knowledge

Molds can grow on wood, paper, carpet, and foods. But what conditions are most favorable for mold spores to reproduce? Usually wet conditions are favorable for mold to reproduce but the conditions really depend on the type of mold because there are molds that cannot reproduce if it is too hot or too cold. In this activity, students will grow bread mold under several different environmental conditions where the variables include temperature and moisture levels. Before the experiment, students will be asked to form a hypothesis about the best conditions for growing mold. After the mold-growing experiment, students will form their conclusions and present their results to the class.

Procedure

1. Distribute the work sheet describing the use of the scientific method to prove a hypothesis.
2. Lead a discussion about hypotheses and the scientific method.
3. Have the students complete the experiment using the materials available.
4. Each day have them write descriptions of the different samples.
5. After the ten days are completed have the students record their conclusion and explanation.

Discussion Questions

Can what is happening to your bread be defined as decomposing?

What is the job of a decomposer?

What will happen to this bread eventually?

What are preservatives? Are they always good, and what effect could they have, if any on the environment and people?

Preservatives being a form of biotechnology, how has it changed our lives, and how we see food?



Extension

- Research the debate about preservatives and how they are affecting humans in the long run.
- How was food production and consumption before we had preservatives? (Was it more limited?)
- What other things besides food use preservatives?
- Make a graph of deterioration for each piece of bread and compare the two.
- Talk about consumers and what consumers want, how has this affected our food production and processing?
- Make bread in a bag (without preservatives) using lesson plan included in curriculum.

