

ACTIVITY 5: INVESTIGATING FOOD STORAGE METHODS



The purpose of this multi-day experiment is to investigate the effects of different storage methods on the rate of food spoilage, simulating real-world scenarios to understand how proper storage can reduce food waste.

Materials:

- Four identical samples of perishable food items (e.g., slices of bread, bananas, berries)
- Different different storage conditions, such as refrigerated vs. room temperature; open air vs. sealed container
- Different storage containers: plastic zipper-top bags, plastic takeout containers, styrofoam or cardboard takeout containers, brown paper bags.
- Labels or markers for labeling the storage methods
- Camera or smartphone (optional)

First, inform students that they will be conducting an experiment to investigate how different storage methods affect the lifespan of perishable food and reduce food that goes to waste. Explain to them that they will be researching different conditions, like cold vs. room temperature, and various container types.

Next, have students partner up and choose two storage methods to compare. For example, they might choose the same type of container in the refrigerated vs. room temperature conditions. They could also choose an open container like a styrofoam takeout container vs. a closed one like a plastic zipper-top bag. Make sure that you have groups testing as many methods as possible before allowing groups to double up and experiment with the same methods. That way, there are a variety of results that—as a class—can be summarized for consensus building and large-scale conclusions.

Then, have students plan out their procedures and length of time to track the food storage and collect data before beginning to carry those procedures out. A sample of steps might include a procedure like the following:

1. Place one food sample of the same amount from the same source into each of the storage methods you are testing.
2. Monitor and record initial observations about the food in each storage method.
3. Assign a specific time each day for observations.
4. Observe and record any changes in the appearance, odor, ripening, or mold growth of each food sample.
5. Take photographs (optional) to document the changes over time.
6. Compile the recorded observations for each food sample and storage condition each day.
7. Analyze and compare the rate of spoilage and mold growth across the different storage methods based on the observations you made and any data you collected.
8. Look for patterns and draw conclusions based on the data collected for the storage methods your group investigated.

Last, have all the students share their results with one another, or collect and display all the results from all the groups in a singular place where all the students can view all the results. Have groups summarize their results alongside the results of other groups to draw larger conclusions about all the methods and what the data of other groups might mean about the methods they individually investigated and what their results mean for other storage method outcomes. Finally, engage the whole class in a discussion about what the results reveal about which storage methods might have the most beneficial impact on reducing food waste and how the data supports that conclusion. Have them make some recommendations for food storage in everyday life to help people combat food waste.

Note: Ensure safe disposal of spoiled food, reminding students not to consume any food samples used in the experiment at any point.