



Cupboard, fridge or freezer – which is best?

Lesson overview



This lesson has been developed to build students' understanding of how incorrect storage of food can lead to food waste. They will investigate the storage instructions and use by dates of certain food products. They will plan an experiment to test whether everyday foods, apples and bread, last longer in the fridge or on the bench. This can be carried out over the next week or fortnight. The discussions and reflections based on the experiment are designed to occur over a few lessons to build students' understanding.

Learning intention



Students will:

- Reflect on the actions of themselves and their household that leads to food waste
- Compare, discuss and investigate the recommendations for the storage of specific foods
- Plan and implement an experiment that tests the freshness of apples and bread in different storage areas.

Resources



- Butcher's paper
- Sample food containers; open, unopened or empty, food packaging with use by dates and storage suggestions (some already open or out of date if possible)
- Interactive whiteboard with internet connection
- Student worksheet
- 2x slices of lettuce (any type), 2x bananas (skin on) and two zip lock bags
- Access to a refrigerator, such as in the staffroom or canteen

Differentiation



- Support:** Teacher scaffolds tasks and questions to suit student ability, students work with others and adults to complete tasks
- Structured:** Use small group instruction to help support students discuss food waste and actions
- Extension:** Students extend experiment to other foods and locations to complete at home or at school

Australian curriculum links



Science

Science Understanding - Earth's resources are used in a variety of ways (ACSSU032)

Science as a human endeavour - People use science in their daily lives, including when caring for their environment and living things (ACSHE035)

English

Literacy - Listen for specific purposes and information, including instructions, and extend students' own and others' ideas in discussions (ACELY1666)

Assessment



- Monitoring understanding throughout class discussion and questioning
- Collecting work samples
- Teacher feedback

Lesson introduction – 10 minutes



1. Ask students to reflect on statements given by the teacher and to 'score' themselves and their family. For every 'yes' answer, the students receive one point. Lowest amount of points wins. Give students statements that would lead to food waste by themselves or their households. Students count the number of times they say yes to the following statements: Have you or your household ever...
 - Thrown out a piece of fruit from the fruit bowl that has gone bad?
 - Thrown out something from the cupboard that was past the use by date?
 - Found something in your bag that was rotten or mouldy?
 - Put leftovers in the fridge that no one ate?
 - Taken one bite out of a piece of fruit and thrown it away?
 - Put your sandwich in the bin uneaten?
2. Reflect on the fact that all of these scenarios lead to food waste, explaining that they lead to a waste of food, money, and resources for families. Brainstorm some of the reasons why people throw out food, record on butcher's paper or an interactive whiteboard. Incorrect storage is a main culprit that leads to food waste. Discuss the various ways that food is stored in the students' homes such as paper towel, plastic containers, reusable bags, glass jars etc. Explain that the two main factors contributing to food spoilage are exposure to air and moisture. Discuss what they could do in their own home to change how they currently store food and how this might affect the shelf life of their favourite foods such as freshly cut fruit, bread, and deli meats such as ham. Optional: Read and discuss more information on the Love Food Hate Waste websites about food waste at www.lovefoodhatewaste.nsw.gov.au/about-food-waste

Main body of teaching – 30 minutes



3. Show students various food containers (put some common food items in them if you wish, or add a photo of a food item). Before investigating they need to predict where they should be stored (either fridge, freezer or cupboard) and record these on their student worksheet.
4. Before making their predictions, students can watch the following short video to learn more about the difference between use by dates and best before dates.
www.youtube.com
5. After making their predictions, students move around the room and investigate the food packages discussing where they should be stored, looking for instructions and use by dates. Record their findings on their worksheet.
6. As a class discuss findings and compare them to their predictions. Ask students why storing food in the correct places is important and how it can prevent food waste.
7. Discuss the different parts and shelves inside the fridge such as the crisper, door shelves, egg and cheese caddies. Discuss whether they think storing food in different parts of the fridge makes a difference to food freshness.
8. Watch the video 'Love Food Hate Waste - tips for getting the most out of your fridge by NSW EPA' located on the website www.lovefoodhatewaste.nsw.gov.au/household
9. Read the storage tips on the Love Food Hate Waste NSW website www.lovefoodhatewaste.nsw.gov.au/keep-it-fresh
10. Discuss any differences the students have with the tips and their own households, such as where to best store foods such as bread, tomato sauce, peanut butter, tomatoes etc. Initiate a discussion on whether they think the fridge, freezer or pantry is more suitable for each food type.

Plenary



11. Plan an experiment to be conducted over a short period of time (i.e. a few days) to determine how the level of freshness of everyday food items changes. To effectively highlight the outcome of this experiment, we suggest using pieces of lettuce and bananas as they can both perish quickly if not stored in the right conditions.
12. Place a piece of lettuce in a sealed bag and one banana on a bench in the classroom (not in direct sunlight). Store the second piece of lettuce (also in a sealed bag) and the banana in a refrigerator. Each day ask students to observe the look and feel of the banana and lettuce, recording their observations. They could also take photographs to compare the appearance of the banana and lettuce each day. Use the drawings, observations, photos and descriptions to determine in which location the apple and bread stayed fresh for the longest period.
13. Use the P.R.O.E approach to the experiment – Predict, Reason, Observe, Evaluate and record ideas and observations on the bottom and back of the student worksheet. After the experiment is finished, have a discussion about the findings and if it matched the students' predictions. Reiterate the need to store food correctly to ensure it stays fresher for longer so food is not wasted.

Home activity/extension task ideas



For home

Students take home the worksheet and, under adult supervision, complete a stocktake of five food items found in their fridge, kitchen bench top, and cupboard. The study will check whether any foods have exceeded the use by /best before dates and if correct storage was observed. Discuss with students the importance of doing this activity with parents and carers so they can have a discussion about how and why certain foods should be stored in different ways. Remind students that most fruit and vegetables will not have a use by date unless they have come sealed in a packet or carton, such as a bag of baby cucumbers or cherry tomatoes.

Extension

Propose other investigations and experiments comparing parts of the classroom for the storage of different fruits and vegetables such as in a; dark cupboard, on a bench, in direct sunlight, or in the freezer. Be mindful of food waste when completing these experiments, such as using one carrot and not a whole bag of carrots.

Extension

Plan for the storage of student lunches and snacks each day by auditing lunchboxes to ensure food does not go 'bad' during the day or week, doing a weekly check of bags for forgotten food and having a fruit space or cold storage area in the classroom. A tomato is a good example for this activity (a paper towel underneath, fridge and freezer). Students can smell, touch and look to see the difference. Students brainstorm other ideas on how to keep their food fresh at school, such as the use of ice packs.