



Camp Ah-Ha Tech Tuesday- Food Preservation

Learn about different methods early settlers preserved food and a fun science experiment you can do at home!

Who: You and your family

What:

- Think about your kitchen. Where are all the places you have food stored? Freezer? Refrigerator? Pantry Shelves? Cupboards? Cookie Jar? Kitchen Counter?
- Now think of all the containers that food is in. Plastic Bags? Boxes? Plastic Storage containers? Foil? Cans? Bottles? Jars?
- Today we have food stored in many places and in many ways in our kitchen thanks to science. That's right – Science is behind nearly every package of food we have stored in our house right now. We can go to the freezer and thaw a meal or open a can of soup from the cupboard or make macaroni and cheese from a box or open a package of cookies from the counter thanks to inventions that were created to help food stay fresh longer.
- Inventions such as tin cans, freeze drying, plastic containers and preservatives added to food all help to preserve foods longer. Keeping food from going bad is very important to making sure we stay healthy.
- Without preservation food can go bad quickly. Have you ever had bananas turn mushy before you could eat them? Or maybe you sliced up an apple and saw it turn brown right away? Inventions over time have helped us keep these and many other foods fresher longer.
- The goal of food preservation is to keep microbes out. Microbes are tiny organisms like bacteria that causes food to begin to spoil.
- Microbes like certain conditions to survive. The goal of food preservation is to change those conditions.

- Increasing or decreasing the temperature, removing moisture or adjusting the amount of acid in the food can all kill or slow down the work of the microbes making food last longer.
- In Pioneer Days, growing and preserving food took many hours a day. Once the fruits and vegetables in your garden started ripening, you would have to work to keep the food so that you could eat it all winter long.
- There were many ways those pioneers used to preserve their foods:
 - Salting – where food was layered with salt
 - Smoking – where meats are exposed to smoke over time
 - Pickling – where foods are mixed with a mixture of salts and vinegar to adjust the acid levels
 - Jams and Jellies – where fruit is cooked down with sugar and pectin that help remove water and replace it with sugars that cause the fruit to gel.
 - Drying – where foods are sliced thin and dried near a fire or in the sun.
 - Barreling – where foods are placed between layers of straw or sawdust or sand to help keep air and microbes out. Barrels would have been kept in cool cellars
- In future posts we will share some fun old-fashioned recipes you can try at home. But now, we have a science experiment for you to try to see

How:

- You are going to do an experiment where you see how well the preservation methods keep food fresh
- Next time you go to the grocery store, pick up some fresh green beans or a cucumber
- Wash the vegetables and dry completely. Pick out any pieces that are turning brown or are bruised in any way and throw those away.
- If you are using a cucumber, slice it in slices about $\frac{1}{2}$ inch thick. Make sure the slices are pretty even.
- Take one or two green beans or several slices of cucumber for each of the following:

- Salting: Put a layer of table salt in a plastic container. Place several pieces of the vegetables on top of the salt layer. Make sure pieces are not touching each other. Cover with another layer of salt. Put tight fitting lid on top of container.
- Drying: Thread a needle and pull the thread so that the two ends meet and tie a knot to make a double thread. Put the needle through each piece of vegetable making sure they don't touch each other. Cut the thread off the needle and hang the vegetables in a dry place.
- Pickling: Make a simple brine by mixing 2/3 cup vinegar with 1/3 cup water. Put vegetables in a container with a tight lid (glass works best) and pour the brine over the top and put the lid on tight. Place in the refrigerator
- Control: Put several pieces of vegetables on a plate and let sit on your counter
- Check every day to see how the vegetables are doing. Which ones are showing signs of rotting first? Make notes each day so you can keep track.
- After five days, which method seemed to be working better at keeping microbes out? How did the other methods compare to your control? Which ones do you think you'd try to eat first?