Lesson Summary: In this lesson, students will learn about food preservation methods; specifically dehydration. Students will taste fresh and dehydrated foods and compare. They will do an experiment involving rehydration and answer questions about it.

Objectives: Students will be able to:

- Explain how dehydration and rehydration works.
- Identify different food preservation methods
- Sample dehydrated and rehydrated foods

Time Required:
35-40 minutes

Background Information: There are many benefits of this method of food preservation. Dehydration...

1. Does Not Require Electricity.

Most of us are familiar with electric dehydrators seen on infomercials and in stores. But long before any of us came up with those devices people were drying food for the winter. Native Americans dried strips of meat over campfires to take with on hunting trips. Herbs have been put in bunches and hung upside down to dry for centuries in Europe and all over the world.

2. Is Less Time Consuming Than Canning

All you need to do to prep food for drying or dehydration is to clean it, slice it and put it on racks.


How much simpler can it be to throw together a meal when the vegetables are already chopped for you?

4. Requires Less Storage Space.

When you dehydrate you remove the water content, which for a tomato can be upwards of 95%. So you are storing the same amount of food, minus the water content that you will replace later, only using much less space.
Preserve the Harvest

Materials:

- Raisins for tasting/comparison
- Grapes for tasting/comparison
- Examples of dried foods: jerky, dried fruits, cereals/grains, spices, etc.
- Clear plastic cups
- Measuring spoons - one set for each group
- Spoons
- Potato flakes
- Food Dehydrator
- Water
- Bananas or apples for dehydrator
- Knife for instructor/plastic knives for each group of students if allowed
- Cutting board
- Plastic gloves
- Paper towels
- Dehydrated apple recipe (for Oven)
- Small plates

Procedure:

1. Food Preservation is our topic for today. Food preservation is the process of taking fresh foods and preparing them so that they will last longer.
   a. Early Americans did not have the choices that we have today. It was not easy to keep foods fresh as they tend to go bad quickly. We had to come up with different methods to save, or preserve foods. Can anyone think of any foods that go bad quickly? Fruits, vegetables, meats, poultry, grains are all good examples

2. What can be done to preserve these foods? Field answers from group. Write down answers on whiteboard or flip chart paper.
   a. Cooking - can preserve foods for a few days; sometimes longer.
   b. Freezing - helps keep foods fresh for 6-12 months.
   c. Drying - laying foods out over a fire, in a dehydrator or oven to remove water.
   d. Canning - seals out air and bacteria to keep food fresh.

3. Today we are going to concentrate on the drying part of food preservation. People have dried their meats, fruits, grains and vegetables for thousands of years. Early humans knew that they could keep their food from spoiling by drying it in the sun or over a fire. Drying food keeps bacteria and germs from growing. Dried foods are great to keep on hand if you do not have access to fresh fruits or vegetables
Preserve the Harvest

a. This form of food preservation is called Dehydration. Dehydration is the process of removing water from a food so that it will last longer. Fresh foods tend to decay- or go bad- rather fast. Dehydrated foods can last months and even years in some cases. Did you know that raisins are dehydrated grapes?

4. Introduce Activity
   a. I have some samples of raisins and grapes that I will pass around. Please study both the grapes and raisins and then we will talk about them.(Pass out samples)
   b. What are the differences between raisins and grapes? (Weight, size, lack of water, taste, color, texture).
   c. Can anyone think of other foods we dehydrate besides grapes
      i. Examples:
         1. Beef / meat jerky
         2. Sugar
         3. Potatoes
         4. Milk
         5. Dried fruits
         6. Eggs
         7. Tomatoes, peppers
         8. Noodles/Pasta
         9. Spices
         10. Cereals/Grains/Rice
   d. Discuss findings and other dehydrated products.

5. You can eat many dehydrated foods just the way they are. Like raisins, jerky, cereals etc. However, many dehydrated foods need to be rehydrated before we can consume them. If dehydrate means to take away water, what do you think that REHYDRATE means? Right! It means to add water back in.

6. Introduce Activity:
   a. Now we are going to do an experiment to see how quickly a food can be rehydrated. We will be using potato flakes. Potato flakes are made from dehydrated mashed potatoes. The mashed potatoes are sprayed on big racks to dry and then the flakes are collected and boxed up to be sold in supermarkets. Potato flakes make instant mashed potatoes which is a great time saver when cooking a meal. We didn't even have to peel one potato.
   b. Give clear instructions.
   c. Divide kids into groups- or do separately. Use Dixie cups.
   d. Pass out materials:
      i. 1 cup with 1/4 cup potato flakes
      ii. 1 cup with 1/4 cup water
Preserve the Harvest

iii. Plastic stirring spoon
iv. Paper towels

e. Ask students to measure one tsp of water to the potato flakes.
f. Ask group if that was enough to rehydrate.
g. Continue to add water until the potatoes are a mashed consistency.
h. Discuss findings.

7. Introduce Activity
   a. I am now going to show you how some foods can be dehydrated at home. This is a dehydrator. Have teacher or assistant slice fruits, or come prepared with pre-sliced foods. Bananas are the easiest to use and you may even allow students to cut their own bananas if plastic knives are allowed. Slice up fruits or veggies very thin and then place them on the racks, according to dehydrator instructions.
   b. We are using ___________ (bananas, apples etc.) They will take about 6 hours to dry, so we will set the timer and then you can enjoy the dried fruit tomorrow for a snack.
   c. Conclude by handing out dehydration recipe and fielding any questions.

Assessment:

Class Discussion

Supporting materials: http://dontwastethecrumbs.com/2013/08/how-to-dehydrate-fruit-basic-food-preservation/


References/Resources: http://schoolworkhelper.net/food-preservation-history-methods-types/