



FOOD SCIENCE

SKILLS :

- Learn about nutrients
- Complete a food science service project
- Increase technology skills
- Discover careers in food science
- Gain knowledge about food safety practices
- Perform a scientific experiment
- Assess your food-borne illness prevention

Food is important. The growth and maintenance of our bodies depend on the proper amounts of healthy food that we eat. While good foods are good for us, each year in the United States, millions of people are sickened by food-borne illnesses. Learning about good foods and how to keep foods safe are just a few of the skills that you can learn in the 4-H Food Science project. Look at the skills to your left. Check your favorites. Then work with your 4-H leaders and parents to make a 4-H project plan of what you want to learn and do this year.



Life Skills: Healthy Lifestyle Choices

DINNER DETECTIVE

We get nutrients from healthy foods that our bodies use to grow and maintain strength and proper function. Look at the three columns below. Fill in the blanks with the letter that is missing. The blanks spell out the name of a nutrient found in each of the healthy foods listed in the columns below. Then, read the nutrient descriptions listed at the bottom of the page. Write the number of the nutrient in the green circle that corresponds to the proper nutrient.

___ e a n u t s

p e a n u t b u t t e ___

t - b ___ n e s t e a k

m e a ___

___ g g s

d r ___ e d b e a n s

g r a i ___ s

l ___ v e r

d ___ y b e a n s

e g g y ___ l k s

g r e e ___ , l e a f y
v e g e t a b l e s

g r e e n , l e a f y
___ e g e t a b l e s

c ___ t r u s f r u i t s

g r a p e f r u i ___

w ___ t e r m e l o n

___ e l o n s

b r o c c o l ___

c a ___ t e l o u p e

___ a b b a g e

NUTRIENT #1: _____

NUTRIENT #2: _____

NUTRIENT #3: _____



This nutrient not only helps the body produce strong bones and teeth, but also assists in healing wounds, including broken bones. The nutrient also keeps the body cells and tissues strong and healthy.



Also known as **building blocks**, this nutrient aids in growth, replaces worn-out cells and helps resist disease.










This nutrient should be consumed in small amounts. Nevertheless, it is important for your body as it supplies energy by carrying vitamins A, D, E and K to your cells.

FOOD SAFETY TRUE OR FALSE

Bacteria are easily transmitted and can make you sick. According to the Centers for Disease Control, each year food-borne diseases cause millions of people to become sick. Hundreds of thousands are hospitalized. And some of these diseases have resulted in death. But, do not panic! It is important to understand that all foods contain some type of bacteria. Foodborne illnesses are caused by an over-abundance of these bacteria in foods. The overproduction of bacteria is more often than not a result of improper food handling and preparation. Having a clean cooking environment is important to preventing food illness.

Read the statements below. Circle **true** if you think the statement is correct. Circle **False** if you think the statement is incorrect. Visit www.youthlearningnet.org and click on **fantastic foods** to learn more.

-  You do not have to wash your hands after you sneeze or cough as long as you use a tissue.
-  Wiping your hands on an apron is just as effective in preventing the spread of germs as washing them with soap and water.
-  You should wash your hands with soap and warm water for at least 20 seconds.
-  Symptoms of food illness can include headache, stomach cramps, fever, vomiting, diarrhea and nausea.
-  You should wash fresh fruits and vegetables under running water before eating them.
-  It is not necessary to wash utensils and cutting boards between each use as long as they were washed before you started.
-  Putting food in the refrigerator will stop bacteria and mold from growing.

 **TRUE**  **FALSE**

 **TRUE**  **FALSE**

 **TRUE**  **FALSE**

 **TRUE**  **FALSE**

 **TRUE**  **FALSE**

 **TRUE**  **FALSE**

 **TRUE**  **FALSE**

ACTIVITIES

Collect recipes and create a recipe book to give as a gift.

Plan, cook and serve meals to your family.

Organize the grocery list and shop for your family.

Teach a cooking class to younger 4-H members or siblings.

Enroll in a cooking class.

SERVICE IDEAS

Design and create **food preparation safety posters** for your school's cafeteria.

Plan, cook and serve meals to your family.

Work with a local homeless shelter to assist in preparing meals.

Teach a cooking class to younger 4-H members or siblings.

RESOURCES

- School and public libraries
 - Chefs, farmers, butchers
 - 4-H project leader/group
- The following Websites were used to create this activity sheet. To learn more, visit:
- www.utextension.utk.edu/4H/projects/foodscience.htm
 - www.n4hccs.org
 - www.cdc.gov
 - www.youthlearningnet.org
- Don't forget! For more ideas and info, contact your 4-H office.

YOU ARE GOING ON A

PICNIC!

Pretend it is a beautiful Saturday morning in mid-July. You are going on a picnic with your family to a local water park. The sun will be shining and the weather will be hot! You are in charge of packing the picnic basket. Some foods can go safely in a picnic basket and withstand the hot, summer temperatures. There are other foods, however, that could spoil and make you sick.

Look at the list of food options below. Mark an X through the foods that should not go in the picnic basket.

Ham Sandwiches

Potato Salad

Potato Chips

Carrots and Celery Sticks

Canned Sodas

Deviled Eggs

Hamburger Patties

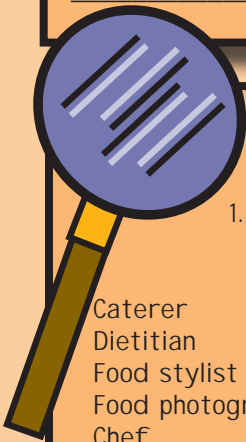
Cookies

Hamburger Buns

Fruit

Pickles

How can you safely pack those items that can not go in the picnic basket?



CAREER SEARCH

1. Using the Internet, research the following careers that involve food science.

Caterer	Extension educator
Dietitian	Grocery store manager
Food stylist	Farmer
Food photographer	Nutritionist
Chef	Food demonstrator
Food scientist	Test kitchen manager

2. Write a short essay (or 4-H speech) about these careers. Answer the following questions based on the information you find:

- What do you do in this job?
- How are food science skills used?
- What kind of education do you need?
- Is this a career you might be interested in pursuing? Why or why not?

BROWN-BE-GONE

Have you ever noticed that when you cut an apple, it eventually begins to turn brown? In many foods, preservatives are added to help prevent this type of discoloration as well as decay and spoilage. There are two different kinds of preservatives -- antimicrobial agents and antioxidants. Try the experiment below to learn more about how antioxidants work.

SUPPLIES

Apple
Lemon
Knife

DIRECTIONS:

1. Cut a half-inch-thick slice of lemon
2. Cut the apple in half
3. Place the slice of lemon on one half of the apple
4. Set both halves of the apple aside for one hour
5. Remove the lemon. Compare the two apple halves.

The lemon contains vitamin C. Vitamin C is also an antioxidant that reduces the browning reaction.