

**PLANNING, SELECTING, STORING, PREPARING & SERVING FOOD TO
MEET NUTRITIONAL NEEDS**
Planning, Selecting, Storing, Preparing & Serving Food to Meet Nutritional Needs
 Grade Levels: 7-12

Concept: Food Handling and Food Safety

Comprehensive Standard: 6.4 Evaluate factors affecting food safety, from production to consumption

Technical Standard(s): 6.4.1 Determine conditions and practices that promote safe food handling
 6.4.2 Analyze safety and sanitation practices throughout the food chain
 6.4.5 Review current issues about food safety and sanitation

LESSON COMPETENCIES

- Identify the causes of food borne illness
- Explore food borne illness
- Demonstrate appropriate food safety and sanitation practices in selecting, preparing and storing food

Anticipated Behavioral Outcomes

- Student practice food safety principles when purchasing, preparing, serving and storing foods at home or on the job.

Resources Needed:

- Operation Food Safety: A Middle/Junior/High School Food Safety Curriculum (2000) available from the South Dakota State University Cooperative Extension Service.
- *Science and Our Food Supply: Investigating Food Safety from Farm to Table* sponsored jointly by the *National Science Teachers Association* (www.nsta.org/288) and the *Food and Drug Administration* (www.foodsafety.gov/~fsg/teach.html) has updated materials. The curriculum contains several useful components: separate guides for middle level and high school science teachers; an interactive video, "*Dr. X and the Quest or Food Safety*"; and the comprehensive "*Food Safety A to Z Reference Guide*." The site has links to games and other resources on the topic.

References for teachers and students:

NOTE TO TEACHER: The first 2 references listed above for this unit provide a wealth of information and activities on the topic of food safety. Obtain copies and carefully select those appropriate for your students. Consider team teaching or working with your science teacher.

Operation Food Safety: A Middle/Junior/High School Food Safety Curriculum (2000) available from the *South Dakota State University Cooperative Extension Service*. The

curriculum is divided into the following units: handwashing, keeping things clean and keeping foods hot or cold. Two additional units are included for high school students: food irradiation and biotechnology.

Another free curriculum is *Science and Our Food Supply: Investigating Food Safety from Farm to Table*. The curriculum also includes a video on food safety. It can be ordered at www3.nsta.org/fdacurriculum. This curriculum guide is recommended by the USDA for use with 9-12 grade students.

NEW – The *University of Nebraska-Lincoln* at Lancaster County webpage has a variety of resources on food safety including two PowerPoint presentations, “Food Borne Illness Can Cause More Than a Stomachache” and one specifically for teens, “Cold Pizza for Breakfast: MyPyramid Food Safety for Teens and Tweens That Cook”. Download at <http://lancaster.unl.edu/food/mypyramid-foodsafety.htm>.

NEW *Iowa State University Cooperative Extension Service* has a series of lesson plans on food safety for youth available for you at: www.extension.iastate.edu/foodsafety/Lesson/glossary.html.

NEW A series of fact sheets on safe food handling is available from USDA at www.fsis.usda.gov/Fact_Sheets/Safe_Food_Handling_Fact_Sheets/index.asp

Texas Tech University, Iowa State University and University of Wisconsin-Stout (September, 2001). Assessment Strategies for Family and Consumer Food and Nutrition National Standards. Funded by the USDA, Cooperative State Research, Education and Extension Service and Higher Education Challenge Grants. Available from The Curriculum Center for Family and Consumer Sciences, Texas Tech University, Box 41161, Lubbock, TX 79409-1161, Phone 806-742-3029. Request Item #4500. Cost is \$20.00 + \$5.00 shipping and handling.

A wealth of information and additional web links is available at the government food safety site accessible at www.FoodSafety.gov Do a site search for ideas for National Food Safety Education Month. There are several food safety experiments available at this site also.

NEW “Can Your Kitchen Pass the Food Safety Test?” (www.fda.gov/fdac/quiz/onlinequiz_js.html) is a food safety quiz from the USDA.

NEW An article on “Food Safety” (www.kidshealth.org/teen/food_fitness/nutrition/food_safety.html) is available at the KidsHealth website; it is available in a printer friendly format.

A newsletter article, *Seven Highly Effective Habits for Home Food Safety*, is available at <http://lancaster.unl.edu/food/ftsep97.htm>

The *Fight BAC!* Website is www.fightbac.org. This site includes a survey related to food safety, fact sheets, information on foodborne illnesses, and numerous links to other food safety sites. The “BAC-Catcher Game” can be found here. **NEW** There are curriculum activities for all grade levels and teacher’s resource guides for each area as well. A PowerPoint presentation on food handling is available to download.

The *Food and Drug Administration* has links to sites with information on food safety and food safety issues at www.foodsafety.gov/~dms/fs-toc.html. Information and fact sheets on foodborne illnesses and links to additional info on food safety can be found at <http://vm.cfsan.fda.gov/~mow/foodborn.html>.

NEW The *Bad Bug Book* (<http://vm.cfsan.fda.gov/~mow/intro.html>) is a handbook that provides basic facts regarding foodborne pathogenic microorganisms and

natural toxins. It brings together in one place information from the *Food & Drug Administration*, the *Centers for Disease Control & Prevention*, the *USDA Food Safety Inspection Service*, and the *National Institutes of Health*.

Food safety songs and raps can be found at <http://foodsafe.ucdavis.edu> Click on Food Safety music to hear the songs and to access the lyrics **NEW** – Music videos are now available for some of the raps and safety songs.

Other web sites:

USDA/*Food Safety and Inspection Service* www.fsis.usda.gov

Thermy Web page www.fsis.usda.gov/thermy

FDA/*Center for Food Safety & Applied Nutrition* www.cfsan.fda.gov/

USDA/FDA *Food borne Illness Education Information Center*

www.nal.usda.gov/fnic/foodborne/foodborn.htm

Centers for Disease Control and Prevention www.cdc.gov/foodsafety

Center for Food Safety www.centerforfoodsafety.org/

Food Safety Consortium www.foodsafety.iastate.edu/

Microbiology's Clean Hands Campaign www.washup.org/index.html.

NEW The *New York Times* has an archive of lesson plans with related news articles. Check out this lesson plan for use in this area:

It Might Come in Handy. www.nytimes.com/learning/teachers/lessons/20050927tuesday.html

Learning About Hand Washing and Communicable Disease

In this lesson, students will learn about the latest study on routine hand washing practices. They will then research some of the possible communicable diseases that can be transmitted by having lax hygiene. (September 27, 2005)

Background Information:

The United States has one of the safest food supplies in the world. However, according to the *Center for Disease Control and Prevention*, food borne illness causes an estimated 5,200 deaths, 76 million illnesses and 323,000 hospitalizations in the United States each year.

According to the *Center for Food Safety and Applied Nutrition* (2000), there are many issues that make food safety more of a concern now than ever before. These include:

- **More meals prepared away from home** – Today, nearly 50% of the money we spend on food goes toward buying foods that others prepare such as “take-out” and restaurant meals. Plus, a growing number of Americans eat meals prepared in hospitals, nursing homes, day-care centers and senior centers.
- **Food from around the globe** – Food in your local grocery store comes from all over the world, which may bring in new microorganisms. This presents a whole new set of modern food safety challenges.
- **Resistant Bacteria** – In 1950, scientists knew of 5 foodborne pathogens. In 2000, there were at least 25 foodborne pathogens, including 25 newly discovered ones.

Learning Activities:

Middle School Level

- Choose activities from the Operation Food Safety: a Middle/Junior/High School Food Safety Curriculum and/or Science and Our Food Supply: Investigating Food Safety from Farm to Table curriculum. See reference list.
- Complete one or more of the food safety experiments available at the government food safety site (www.foodsafety.gov) Click on “Kids, Teens and Educators”; Click on “Experiments for Fighting BAC! In Fourth –Eighth Grade Classrooms!” (www.fightbac.org/content/view/39/3).
- Conduct the *FBI Case: Perils at the Picnic* (www.fightbac.org/content/view/39/3) a case study where children become the detectives on the case of a foodborne illness, can found at the same curriculum site. Following this activity, ask students to write their own case studies involving improper or proper food handling strategies OR rewrite the case studies from the FBI Case example by correcting the errors made.
- To review food safety practices, make copies of the “BAC-Catcher game” (www.fightbac.org/content/view/39/3) Divide the class into teams of two, students play the game together following directions on the game handout (see reference list)

High School Level

- Choose activities from the *Operation Food Safety: A Middle/Junior/High School Food Safety Curriculum* and/or *Science and Our Food Supply: Investigating Food Safety from Farm to Table* curriculum. See reference list.
- Have students plan experiments on food safety for elementary students. Use one or more of the food safety experiments available at the government food safety site (www.foodsafety.gov) Click on “Kids, Teens and Educators”; Click on “Fight BAC! In Fourth-Eighth Classrooms!”(www.fightbac.org/content/view/37/3) Click on Experiments (these experiments are designed for grades 4-8).

Extended Learning Activities

- **Food Safety Posters** – Have students create clever posters for the school bathrooms and school cafeteria, family and consumer sciences classroom and faculty lounge, reminding students, faculty and staff of appropriate food safety principles. Some great ideas to assist students with this activity can be found at Website listed in the reference section for the *Seven Highly Effective Habits for Home Food Safety* (<http://lancaster.unl.edu/food/ftsep97.htm>) newsletter from the *Nebraska Cooperative Extension Service* in Lancaster County.
- **National Food Safety Month Campaign** – As a class or FCCLA Student Body or Community Project conduct a Food Safety Month campaign in your school and community. The month is sponsored by several organizations including the USDA – check out the theme and promotional ideas from their site at

- www.foodsafety.gov/%7Efsg/september.html . Additional Ideas for activities, sample press releases and PSAs and much more can be found at the government site on food safety (see reference list) National Food Safety Month is September sponsored by the *National Restaurant Association* – you can review their promotional materials at www.nraef.org/nfsem/ The site also has links to other resources on food safety issues.
- **NEW Sink Those Germs Campaign:** Work with elementary aged children in issues related to food safety and food borne illness by conducting a “Sink Those Germs” campaign. This could also be done as a part of a health fair. See the “Sink Those Germs” webpage at <http://lancaster.unl.edu/food/sinkgerms.htm>

Academic Connections NEW

- ✓ **Science** – The *Science and Our Food Supply: Investigating Food Safety from Farm to Table* (www3.nsta.org/fdacurriculum) curriculum featured in the reference list has a supplement for science teachers on the topic of food borne illness with experiments and applications.
- ✓ **Music** – Students can create their own food safety songs and raps for performance at a school concert or use those available at the food safety songs and raps website found at <http://foodsafety.ucdavis.edu>
- ✓ **Economics** – Research the cost of food poisoning to restaurants and to lost productivity at work/missing work. Check out the press release at the “Microbiology’s Clean Hands Campaign” (www.washup.org/index.html) for more information.