

KITCHEN SAFETY

Teacher's
Guide





Introduction

This Teacher's Guide provides information to help you get the most out of *Kitchen Safety*. The contents in this guide will allow you to prepare your students before using the program and present follow-up activities to reinforce the program's key learning points.

With the invisible enemy of bacteria and visible threats like grease fires, the kitchen can be a breeding ground for danger. From painful cuts to cramping guts, poorly maintained equipment and carelessly stored foods can lead to serious health risks. The three-part *Kitchen and Food Safety* series addresses the what's, why's and how's of the hidden health hazards we face with every bite, and the simple steps we can take to preserve our foods—and our well-being.

Learning Objectives

After viewing the program, students will be able to:

- Properly handle knives and other kitchen utensils.
- Prevent burns, fires, falls, and other injuries.
- React properly in the event of an emergency situation.
- Discuss the proper use of electrical appliances in the kitchen.
- Recognize clothing that is most suitable for work in the kitchen.

Educational Standards

National Standards

This program correlates with the National Standards for Family and Consumer Sciences Education, the National Health Education Standards, and the National Science Education Standards. The content has been aligned with the following educational standards and benchmarks from these organizations.

National Standards for Family and Consumer Sciences Education

- Demonstrate food safety and sanitation procedures.
- Apply risk management procedures to food safety, food testing, and sanitation.
- Demonstrate ability to acquire, handle, and use foods to meet nutrition and wellness needs of individuals and families across the life span.
- Evaluate factors that affect food safety, from production through consumption.

National Health Education Standards

- Students will comprehend concepts related to health promotion and disease prevention.
- Students will demonstrate the ability to access valid health information and health-promoting products and services.
- Students will demonstrate the ability to practice health-enhancing behaviors and reduce health risks.

National Science Education Standards

- Science in Personal and Social Perspectives: As a result of activities in grades 9-12, all students should develop understanding of personal and community health, population growth, natural resources, environmental quality, natural and human-induced hazards, and science and technology in local, national, and global challenges.

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English Language Arts from National Council of Teachers for English

The activities in this Teacher's Guide were created in compliance with the National Standards for the English Language Arts from the National Council of Teachers of English.

- Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).
- Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.
- Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.
- Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.
- Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and non print texts, artifacts, people) to communicate their discoveries.

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Technology—National Educational Technology Standards from ISTE

The activities in this Teacher's Guide were created in compliance with the following National Education Technology Standards from the National Education Technology Standards Project, the International Society for Technology in Education.

- Students are proficient in the use of technology.
- Students demonstrate a sound understanding of the nature and operation of technology systems.
- Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.
- Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.
- Students use technology to locate, evaluate, and collect information from a variety of sources.
- Students use technology tools to enhance learning, increase productivity, and promote creativity.

"The National Education Technology Standards" reprinted with permission from the International Society of Technology Education.

Curriculum Areas

- Relevant curriculum areas include Health and Home Economics.

Program Overview

This program, *Kitchen Safety*, covers the importance of cleaning and sanitizing kitchen tools and surfaces, proper use and storage of knives, storage and use of electric appliances, dealing with kitchen fires, and more.

Main Topics

Topic 1: Knives

Using the right knife in the proper manner for a particular task makes kitchen jobs easier and safer.

Topic 2: Spills

By cleaning up spills as soon as they occur, you can prevent injury to yourself or others.

Topic 3: Electrical Hazards

Electrical appliances make kitchen work faster and easier, if used properly and safely.

Topic 4: Fire Hazards

Stoves, ovens, and appliances are all potential fire hazards, but danger can be avoided when careful attention is paid to safety. Should a fire occur, knowing how to handle each distinctive type of fire can mean the difference between life and death.

Fast Facts

- Cooking fires are the number one cause of home fires and home fire injuries. Most cooking equipment fires start with the ignition of common household items, such as food, curtains, grocery bags, etc.
- Hot drinks can scald even 20 or 30 minutes after being made.
- According to the FDA, the kitchen sink drain, disposal, and connecting pipe should be sanitized periodically by pouring down the sink a solution of one teaspoon of chlorine bleach in one quart of water, or by using a commercial cleaning solution.
- More than 1 billion germs can grow in a sponge in 24 hours.
- Poisoning accounts for one in five household deaths; most of the victims are under five years of age.
- An electric burner coil can reach a temperature of more than 1,000° F.
- Before heating, slash a cut in potatoes or similar vegetables to reduce the risk of “bursting” when cut into later.
- Eggs should be removed from the shell before being cooked in a microwave oven; otherwise, the egg may explode, causing burns and other injuries.
- Always remember that steam rises out of a boiling pot of water when the cover is removed. Remove the cover far-side first so the rising steam doesn’t scald your hand.

Vocabulary Terms

bacteria: Tiny living things that live on food, plants, animals and soil. Under the right conditions, bacteria can double in number every 10 to 30 minutes.

chef's knife: An all-purpose kitchen knife that is used for most types of chopping, dicing, mincing, and slicing.

contamination: The presence of harmful substances in food.

cross-contamination: The transfer of harmful bacteria from one food or utensil to another.

danger zone: The range of temperatures, between 41° F and 140° F, at which most bacteria multiply rapidly.

disinfectant: An agent, such as heat or a chemical, that destroys disease-causing microorganisms and their spores.

dry cooking fire: The most common type of cooking fire, in which the water or moisture boils out of the pan and the food left in the pan scorches, producing smoke. This usually doesn't cause a great deal of damage.

electrical fire: One of the leading types of house fires, originating from an electrical appliance or outlet.

fire extinguisher: A portable apparatus containing chemicals that can be discharged in a rapid stream to extinguish a small fire.

grease fire: A grease fire occurs when oil or grease is heated and ignites. A grease fire can cause significant damage; unnoticed, it can spread into a major house fire.

oven fire: A fire that is usually contained in the oven. An oven fire is usually easily extinguished.

paper fires: Are started by common combustibles, and also might include wood, grass, plastics, and rubber.

paring knife: A small knife with a sharp blade that is generally three to four inches long. It is easy to handle and works well for peeling and coring foods.

pathogens: Bacteria that use the nutrients found in potentially hazardous foods to multiply.

perishable: Likely to spoil or expire if not handled properly.

serrated knife: A knife with a sharp edge and saw-like notches or teeth. A serrated knife with a long blade is used to slice through food that is hard on the outside and soft on the inside, such as slicing through the hard crusts of bread. A serrated knife with a short, thin blade is intended for slicing fruits and vegetables. These knives are difficult to sharpen.

Stop, Drop, and Roll: The response recommended by fire personnel if one's clothing catches fire.

Pre-Program Discussion Questions

1. What discoveries or inventions do you think have made kitchens safer over the years?
2. Which populations do you think are at particular risk for injury in the kitchen? Why?
3. Why do you think kitchens themselves pose particular risk for injury?
4. What do you think is the leading cause of kitchen-related injuries? Why?
5. What kitchen safety tips or precautions have your parents or other adults given you? Do you always follow this advice? Why or why not?

Post-Program Discussion Questions

1. What are three keys to the safe use of knives in the kitchen? Why are these safety steps important?
2. Have you ever spilled something in the kitchen? If so, did you follow the safety rules outlined in this video when you were cleaning up the spill? Why or why not?
3. What type of clothing do you typically wear when in the kitchen? Is your attire suitable for cooking? If not, what will you wear the next time you cook?
4. Name some standard kitchen appliances. What safety tips would you give someone trying to use each of these appliances for the first time?
5. What future technologies do you believe will improve our ability to make kitchens even safer?

Group Activities

Extinguishing the Flame

Create groups comprised of four students. Assign each student in a group to research a specific type of fire—Class A, Class B, Class C, or Class D. For each type, students should be able to define what materials can cause the fire and what type of extinguishers can be used to put it out safely. Have each group create a poster or multimedia presentation that summarizes their findings and provides safety tips for dealing with each type of fire.

Kitchen Safety for All

Ask students to think about the kitchen safety concerns faced by those with special needs—the vision impaired, the hearing impaired, the elderly, and so on. Then divide the students into groups and assign each group to devise a plan to educate a special needs population about kitchen safety. Have each group identify specific tools, techniques, resources, and educational materials that might be helpful.

Inventor! Inventor!

Every year new technologies enter the market, changing the way we work and relax. Kitchen appliances are no exception! Divide students into small groups and have each group “invent” a new product or technology that will improve kitchen safety in the future.

Individual Student Projects

Fire Man, Fire Plan

Ask each student to come up with a fire escape plan for his or her household, and to implement it at home with a test run. Have each student report back on how the home fire drill functioned.

From Apple Parer to Z

On February 14, 1803, the apple parer was patented by Moses Coates. Ask each student to research the history behind one modern kitchen appliance that has made life easier and safer for its users. Students should include historical information, biographical information, and earlier attempts or prototypes of today's modern appliance.

Your Own Home

Ask each student to examine his or her kitchen, and determine its current safety level. Students should consider suitability for ages/abilities of people living in the home; knife safety; spill risks and clean-up readiness; appliance safety; fire safety; and safety education. Students should then devise and implement a plan to improve their own kitchen safety. (This project can be done in conjunction with the Internet Activity "Check it Out, Check it Off.")

Internet Activities

Check It Out, Check it Off

Using a variety of Internet sources, each student should develop a comprehensive checklist to determine how safe their kitchen at home really is. Once the checklist is created, ask students to take it home and use it to evaluate their kitchen. Finally, after the evaluation, have them develop clear steps to implement improved safety measures.

Kitchen, Cocina, Mitbah

Ask students to divide into groups, with each group representing a continent other than North America (Asia, Europe, Africa, Australia, and South America). Each group should report on the contents of a typical kitchen among different cultures on that continent, and on issues of kitchen safety that may arise.

Web Review

Type in "fire safety" on any search engine and you will get thousands of hits. Ask students to do a comparative review of fire safety sites, and make recommendations based on educational value, interactivity, graphical user interface, content, navigation, etc. for both children and adults.

Assessment Questions

Q1: What is the proper knife to use for cutting meat?

A: A chef's knife

Feedback: A chef's knife is an all-purpose knife with a big blade well-suited for chopping, and cutting meats and poultry.

Q2: True or False: You are less likely to get injured using a dull knife.

A: False

Feedback: Dull knives don't cut as well as sharp knives do, making you work harder and be more prone to injury.

Q3: What is the best way to clean a knife?

- a) Vertically, from bottom to top
- b) Vertically, from top to bottom
- c) Horizontally, from bottom to top
- d) Horizontally, from top to bottom

A: b) Vertically, from top to bottom

Feedback: By starting at the top, dull edge of the knife and wiping straight down to the sharp edge, you reduce the risk of injury. And never wipe back and forth along the sharp edge!

Q4: True or False: Grease spills respond best to soap and water.

A: False

Feedback: While most spills can be cleaned with soap and water, the oil content of grease spills often requires a commercial cleaner, or a homemade one using borax, water and vinegar, or lemon.

Q5: True or False: A pumice stone is used for putting out paper or fabric fires.

A: False

Feedback: A pumice stone is a safe and commonly used tool for sharpening certain kinds of knives.

Q6: When cleaning appliance blades in hard-to-reach areas, it is best to use a _____ .

- a) damp sponge
- b) paper towel
- c) cotton-tipped swab
- d) brush

A: d) brush

Feedback: Using a brush to clean blenders and choppers can reduce the risk of injury by taking your hand out of the danger zone.

Q7: True or False: Kitchen towels can double as potholders.

A: False

Feedback: Kitchen towels do not provide the proper insulation needed to avoid injury. Furthermore, because of their larger size, a dangling edge of the towel may catch fire.

Q8: When cooking, turn pot handles towards _____.

- a) the front of the stove
- b) the back of the stove
- c) the side of the stove
- d) the ceiling

A: b) and c)

Feedback: By keeping pot handles turned to the back or the side of the stove, you avoid accidentally bumping them and spilling a pot of hot contents.

Q9: Which of the following is *not* a common type of kitchen fire?

- a) Grease
- b) Electrical
- c) Gasoline
- d) Paper/fabric

A: c) Gasoline

Feedback: Grease fires usually happen on or around the stove; electrical fires are often caused by appliances; and fabric/paper fires are caused by towels or paper-based products.

Q10: Which of the following is *not* recommended for extinguishing a grease fire?

- a) A pot lid
- b) Salt
- c) Baking soda
- d) Water

A: d) Water

Feedback: Water will not put out a grease fire and, in fact, will cause the grease fire to spread. A fire extinguisher is the best way to put out a grease fire.

WEB RESOURCES

Home Food Safety

<http://www.homefoodsafety.org/index.jsp>

Food Safety First

<http://www.foodsafetyfirst.org>

The Food Network

<http://www.foodnetwork.com>

Food Safety

<http://foodsafety.cas.psu.edu>

Gateway to Government Food Safety Information

<http://www.foodsafety.gov/~fsg/vlibrary.html>

FDA Foodborne Illness Education Information Center

<http://www.nal.usda.gov/foodborne>

Centers for Disease Control and Prevention

<http://www.cdc.gov/ncidod/op/index.htm>

National Ag Safety Database

<http://www.cdc.gov/nasd>

Additional Resources at www.filmsmediagroup.com

Available from Films Media Group • www.filmsmediagroup.com • 1-800-257-5126

Early Childhood: Food Safety

- VHS
- Includes supplement with quizzes and answer keys
- Item # 32576

This video delivers key information on serving safe food to infants, toddlers, and preschoolers, covering common bacteria, food-borne illnesses, symptoms of food poisoning, sanitizing and disinfecting, and how to be a safe shopper. Make your food safety motto “When in doubt, toss it out!” A supplement, containing the video’s goal and objectives as well as multiple-choice quizzes and answer keys, is included. Filmed in collaboration with Dr. LuAnn Soliah, a registered dietician and director of nutrition sciences at Baylor University. © 2000. (31 minutes)

Food Safety and Sanitation

- VHS
- Includes supplement with quizzes and answer keys
- Item # 32584

Food safety and sanitation go together like a hand in a glove. That’s why your students need to see this video. It addresses personal hygiene, kitchen and equipment cleanliness and sanitation, and proper cooking temperatures while offering tips on how to avoid food-related illness and injury, both at home and when dining out. Interactive scenes identify common food safety problems and encourage classroom discussion. An information-packed supplement, complete with quizzes and answer keys, is included. © 2000. (32 minutes)

Food Safety: From Market to Plate

- VHS/DVD-R
- Closed captioned
- Viewable/printable teacher’s guide online
- Item # 32554

What’s the best way to avoid *Salmonella*, *E. coli*, and other dangerous food-borne bugs? Information! Use this fact-filled video to show your students how to buy, store, and prepare delicious food with their health—and the health of anyone who eats with them—firmly in mind. At the supermarket, in the kitchen, and at the dinner table, knowledge is the key to safety. A Meridian Production. © 2000. (17 minutes)

Food Safety: What You Don’t Know Can Hurt You

- VHS/DVD-R/Digital On Demand
- Also available on CD-ROM (Windows only; Item # 11102)
- Correlates to educational standards
- Item # 11103

Can defrosted leftovers be refrozen? What is trichinosis? And if a pan catches fire, what is the best way to put it out? This concise program explains the importance of proper food handling, storage, and cooking in order to prevent spoilage, waste, and potential food poisoning. Good kitchen safety habits are detailed as well, which can help in avoiding common accidents. A Meridian Production. © 1996. (12 minutes)

Kitchen Safety Posters

- Ten 17"x22" laminated posters
- Correlates to National Standards for Family and Consumer Sciences Education
- Item # 27612

This handsomely designed poster series uses attention-grabbing phrases, informative text, and beautiful illustrations and photographs to teach important aspects of kitchen safety. Perfect for reminding and teaching students how to play it safe, whether they are preparing for a career in an industrial kitchen or learning to manage a home kitchen.

Poster topics: "Away" to Keep Safe; Kitchen Fires (Smoke Detectors); Unplug to Scrub; Microwave Safety; Cut and Burn Treatment; Stove & Range Safety; Work Area; Extinguishers; Bubble, Bubble; Food Safety. A Cambridge Educational Product. © 1996.

Safety in the Kitchen

- VHS/DVD-R
- Item # 26240

Safety and sanitation in the kitchen are areas of vital importance and must be strictly maintained in order to save yourself and your family from dangerous accidents and potentially fatal illnesses. This thorough program covers all the basics of keeping a safe and sanitary kitchen, and is divided into the following topics: burns and scalds; cuts and wounds; slips and falls; kitchen sanitation; and caustic poisons. The section on kitchen sanitation gives special attention to food-borne illnesses and their prevention. Vital information for anyone working in or around a kitchen is presented in a straightforward way, using a visually interesting approach. A Meridian Production. © 1996. (23 minutes)

Irradiation—Promise or Threat?

- VHS/DVD-R/Digital On Demand
- Preview clip online
- Closed captioned
- Correlates to the Health National Standards from the Joint Committee for National School Health Education and the American Cancer Society and the National Content Standards for Health according to the American School Health Association
- Item # 32141

The U.S. government has given its stamp of approval to irradiation as a way of killing food-borne bacteria, germs, and parasites. If irradiated food is considered safe enough to give to immune-compromised patients in hospitals and astronauts in space, why is the practice of food irradiation so controversial? This program offers a balanced look at this important method of food purification as it explains how X-rays, electron beams, and gamma radiation are used to sterilize food; identifies watchdog groups—the World Health Organization, the Centers for Disease Control and Prevention, the American Medical Association, and others—that keep an eye on the effectiveness and safety of irradiation technology; and presents the concerns of opponents. Which side of the debate are your students on? This video will definitely help them decide. A Cambridge Educational Production. © 2004. (19 minutes)

For information on other programs visit our website at

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