



Food Safety Curriculum for Secondary School Students

Lesson 2: Clean!

Major concepts from unit:

- Clean
 - * Difference Between Clean & Sanitary
 - * Effective Handwashing Techniques
 - * Effective Equipment, Utensils, & Surface Washing Techniques
 - * Effective Techniques for Washing Fruits & Vegetables

Terminal Objective(s):

- * To describe effective techniques for washing fruits and vegetables. (C-C)
- * To practice effective techniques for washing fruits and vegetables. (P-GR)

Establishment of Set: Cover a porous ball with Glo Germ®. Pass the ball around the classroom without telling the students that it has the product on it. Then show everyone his or her hands under the fluorescent light. It is a good way to show how easily germs get passed from one person to another. Bacteria are easily transferred from one surface to another and from one person to another. Keeping yourself clean, your cooking equipment and surfaces clean and keeping your food clean are important ways to prevent food-borne illness. (Glo Germ® is a specially formulated lotion that glows under fluorescent light. It is used by many schools and institutions to demonstrate the importance of proper hand washing. To use the kit for handwashing training, the lotion is applied to the hands like hand lotion. This spreads the “germs” on the hands. After handwashing, use the fluorescent light to see any spots that did not come clean. Glo Germ® can be purchased at www.glogerm.com)

Objective 1 – To explain the difference between clean and sanitary. (C-C)
Objective 2 – To explain how to mix sanitary mixtures for use on counters and tables.

(C-C)

Content	Learning Experience
<p>1 & 2. Clean vs. Sanitary Believe it or not, these two words don't mean the same thing. Something that is <i>clean</i> is free of visible dirt. Something that is <i>sanitary</i> is free of germs and microorganisms.</p> <ul style="list-style-type: none"> • Can something be sanitary, but not clean? Sure. Think of a baby bottle that is sterilized but still looks dirty because of the stains on the plastic. • Can something be clean, but not sanitary? Yes! Consider a counter that appears clean, but may have invisible 	<p>1 & 2.</p> <ul style="list-style-type: none"> - Students will listen as teacher explains the difference between clean and sanitary. - Students will watch as teacher mixes up recipe for sanitizing. - Students will view teacher sanitizing what looks like a clean counter. Ask the students first, Is this clean? Then, Is this sanitary?



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bacteria on it.	
<p style="text-align: center;">Recipe for Sanitizing:</p> <p>For <i>counters and equipment</i>, make a solution of 2 tablespoons bleach* and one gallon of water. For <i>counter spaces and equipment too large for sink</i>, wipe surface well with solution for about 1 minute. For <i>equipment that fits in the sink</i>, dip in sink full of solution and leave for 1 minute.</p> <p>For <i>tables</i>, make a solution of one tablespoon bleach* and one quart water. Pour into a spray bottle. Spray lightly on surface and do not wipe. Air dry.</p>	
*Bleach is a dangerous chemical. Do not use bleach without a supervising adult.	

<p>Objective 3 – To describe effective handwashing techniques. (C-C)</p> <p>Objective 4 - To explain when to wash hands. (C-C)</p> <p>Objective 5 – To watch effective handwashing techniques. (P-P)</p> <p>Objective 6 – To practice effective handwashing techniques. (P-GR)</p>	
Content	Learning Experience(s)
<p>3, 4, 5, & 6. <i>Wash hands - do it right and do it often!</i></p> <p>One of the easiest and most effective ways to protect yourself and others from food-borne illness is to wash your hands. However, you need to do it right! A quick rinse under the sink won't remove a significant amount of the bacteria.</p> <p><i>How to wash your hands:</i> Start with hot water. Lather your hands with soap and rub them together briskly for at least 20 seconds before rinsing in hot water. Don't forget to wash the backs of your hands, in between your fingers and even your fingernails.</p> <p><i>How to dry your hands:</i> The best way to</p>	<p>3, 4, 5, & 6.</p> <ul style="list-style-type: none"> - Students will listen to teacher lecture on why we wash hands. - Students will participate in Activity A – “Soapy Solutions” (Attached) - Students will view teacher demonstration on the correct way to wash hands. Then go into kitchens and wash hands correctly. - Students will view examples of anti-bacterial soaps, wipes, and lotions. Discuss effectiveness <p>* Additional Activity: USDA Activity #2: There is more than meets the eye! http://www.foodsafety.gov/~fsg/f02exp2.html</p>



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<p>dry your hands is with a clean, disposable towel. You throw it away after you use it. If you must use a cloth towel, make sure it is clean and designated for hands, not for wiping up counter spills, etc.</p> <p><i>When to wash your hands:</i> Often!! You should wash your hands:</p> <ul style="list-style-type: none"> • before preparing food • after handling raw food • between handling different kinds of food • after using the bathroom or changing a diaper • after handling pets • after blowing your nose or using a handkerchief • after touching your mouth, nose, hair or other parts of your body while handling food <p><i>What about antibacterial soap?</i> It seems that everywhere you turn these days, there are new anti-bacterial products! Antibacterial soap is readily available in stores. However, if you are doing a good and thorough job of washing your hands, any soap will do. It is not necessary to purchase special anti-bacterial soap. If water is not available, you can use one of the antibacterial wipes or lotions, although they are only partially effective.</p>	
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Objective 7 – To explain ways to keep clean when handling food, besides handwashing. (C-C)	
Content	Learning Experience
<p>7. <i>Other ways to keep clean</i></p> <ul style="list-style-type: none"> • Don't handle food if you have diarrhea, a fever or other symptoms of illness • Before preparing food, tie back your hair or wear a hair net • Cover any cuts or sores on your 	<p>7. Students will listen to lecture and watch teacher show the following strategies of other ways to keep clean: plastic gloves, waterproof bandages, and hairnet.</p>



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<p>hands with a clean waterproof bandage before handling food or use clean plastic disposable gloves. However, plastic gloves need to be washed or replaced as frequently as uncovered hands need to be washed.</p> <p>Don't sneeze or cough over food</p>	
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<p>Objective 8 – To describe effective equipment, utensils, and surface washing techniques. (C-C)</p> <p>Objective 9 – To watch effective equipment, utensils, and surface washing techniques. (P-P)</p>
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Content	Learning Experience
<p>8 & 9. <i>Washing equipment, utensils and surfaces</i></p> <p>In addition to keeping yourself clean, you need to keep your food preparation surfaces clean. That includes things like cutting boards, counters, knives and other utensils and equipment. Cutting boards should be made of a non-porous material and in good condition (no cracks). If possible, run your used cutting board through the dishwasher which uses high temperature water to be sure that it is clean and sanitary.</p> <p>To wash equipment and utensils: Wash in hot soapy water after preparing each food item and before preparing another item. This is especially important after preparing raw meat, poultry, eggs or seafood. Whenever possible, use the dishwasher to ensure thorough cleaning and sanitizing. Another way to offer even more protection against bacteria is to sanitize surfaces using a disinfectant or a mixture of bleach and water.</p> <p>Just as with hand washing, consider using disposable paper towels for cleaning up. When you are done, you can just throw them away. Dishcloths and sponges can harbor bacteria and spread them over the</p>	<p>8 & 9.</p> <ul style="list-style-type: none"> - Students will watch as teacher demonstrates effective techniques for washing equipment, utensils, and surfaces. Teacher will demonstrate how to clean a cutting board, knives, bowls, and measuring cups; and show the use for paper towels vs. dishcloths and sponges.



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<p>entire surface that you are trying to clean. If you must use them, be sure to wash them often in the hot cycle of your dishwasher (for the sponges) or washing machine (for the dishcloths).</p>	
<p>Objective 10 – To explain why we need to wash fruits and vegetables. (C-C) Objective 11 – To describe effective techniques for washing fruits and vegetables. (C-C) Objective 12 - To watch effective techniques for washing fruits and vegetables. (P-P) Objective 13 – To practice effective techniques for washing fruits and vegetables. (P-GR)</p>	
Content	Learning Experience
<p>10, 11, 12, & 13. <i>Clean Food</i></p> <p>Now that your hands are clean and your surfaces are clean, you need to think about some of the food that may need washing. Fruits and vegetables (produce) often need to be washed, especially if they are not going to be cooked before consuming them.</p> <p><i>How can produce be a source of bacterial contamination?</i></p> <p>Humans are the major vehicle of bacterial contamination of produce. People with unclean hands may be handling the produce before you purchase it. Also, produce grown in organic conditions (i.e. manure) can be a source of bacteria as well as items grown or watered with an unclean water source. In addition, field workers who are handling the produce often do not have sanitary toilet and handwashing facilities.</p> <p>How do I wash fruits and vegetables?</p>	<p>10, 11, 12, & 13.</p> <ul style="list-style-type: none"> - Students will listen as teacher explains why we wash fruits and vegetables, and effective techniques for washing fruits and vegetables. - Students will watch as teacher demonstrates effective techniques for washing fruits and vegetables (suggest demonstrating on an apple, and carrot); and view examples of new fruits and vegetables sprays. - Students will break into kitchen groups, then go into kitchens and each wash an apple and a carrot.
<p>Recipe for Safety: (from www.fightbac.org)</p> <p>Prepare the kitchen: Before preparing fruits and vegetables, wash your hands and clean and/or sanitize your cutting board and utensils. Don't forget to use hot soapy water.</p>	



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<p>Add water: Remove any lingering dirt by washing fresh produce under running water</p> <p>Scrub thoroughly: Use a vegetable brush to scrub fruits and vegetables that have firm skins, such as potatoes, carrots, etc.</p> <p>Cut Accordingly: Cut away any damaged or bruised areas on produce. Bacteria are more likely to thrive on these places.</p>	
<p>What about those new sprays for washing fruits and vegetables?</p> <p>The new sprays available in the produce section of your supermarket promise to get rid of dirt, wax and chemical residues. They don't actually claim to get rid of microorganisms. Most of the research has found that washing produce under running water does as good a job. It is also a lot less expensive than the pricey produce washes! Save your money and spend it on some healthy tasty food instead!</p>	

Closure – Teacher will ask and discuss the following questions with the class.

- **What is the difference between something being clean and something being sanitary?**
- **How do you effectively wash your hands?**
- **How do you effectively wash equipment, utensils, and surfaces?**
- **How do you effectively wash fruits and vegetables?**



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Resources Needed:

- Ball
- Glo Germ
- Activity A – “Soapy Solution”
- Cooking Oil
- Cinnamon
- Sinks
- Soap
- Measuring Spoons
- Examples of Fruit & Vegetable Sprays with prices
- Dishcloths or Sponges
- Sanitizing Solutions
- Examples of equipment, utensils, & surfaces to effectively wash
- Countertop
- Spray bottle
- Bleach
- Examples of anti-bacterial soaps, wipes, and lotions
- Plastic gloves
- Waterproof bandages
- Hairnet
- Carrots
- Apples
- Cutting board
- Sharp Knives
- Bowl
- Paper Towel
- Measuring cups
- Fluorescent light
- Vegetable brush
- Copies of Attachment A



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Attachment A

USDA Fightbac[®] Activity: “Soapy Solutions”

Question? What is the most effective way to remove bacteria from your hands?

My Hypothesis:

Materials Needed:

Cooking oil
Cinnamon
Access to sink to wash hands
Measuring spoons (teaspoon and tablespoon)

GETTING READY

Ask three classmates to volunteer for the experiment.

Procedure:

For the student volunteers:

1. Rub 1 tablespoon of cooking oil all over your hands until completely coated. Sprinkle 1 teaspoon of cinnamon on hands and rub it around until it's evenly distributed. The cinnamon will be like bacteria. It's all over!
2. Wash hands as follows, rubbing them briskly for 20 seconds:
 - Student #1: wash hands with cold water and no soap
 - Student #2: wash hands with warm water and no soap
 - Student #3: wash hands with warm water and soap

For the rest of the class:

1. Observe the three handwashing methods.
2. Record the results.

My Observations:

The method of handwashing that removed the most "bacteria" was:

The method that removed the least "bacteria" was:



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Illustrate how the hands of Students 1, 2 and 3 looked after washing.

My Conclusions

I can remove bacteria from my hands by:

If I used only cold water and no soap to wash, this is what might happen:

Why does the . . .

Warm water help?

Soap?

Rubbing?

Tip:

Check to make sure there is handwashing soap at every sink in your home and at school.

Tell Your Family ...

Encourage all family members to wash hands with soap and warm water for 20 seconds. Extra tip: a nailbrush does an even better job of removing bacteria from hands and even cleans under the fingernails.