



Jr. Chef Club Jr. Chefs Munch on Lunch Lesson 5



Educator Information Preparing to Teach the Lesson

Fruits and Vegetables

Most people, including children, do not eat the recommended amounts of fruits and vegetables. Research indicates that people who eat generous amounts of fruits and vegetables have fewer health problems and chronic diseases than those who eat less fruits and vegetables. Helping children learn eating habits that include plenty of fruits and vegetables will help them be healthier for life. The 2005 U.S. Dietary Guidelines recommend the following amounts of fruits and vegetables each day for children.

Girls and Boys

	4–8 Years Old	9–13 Years Old	14–18 Years Old
Vegetables	1½ cups	2–2½ cups	2½–3 cups
Fruits	1½ cups	1½–2 cups	2 cups

Note that amounts are listed in “cups,” rather than as “servings” since consumers’ serving sizes can vary widely. This is the first time the Guidelines have given recommendations in cups (and ounces) rather than “servings.”

One goal of the Jr. Chef Club is to make students aware of the need to eat plenty of fruits and veggies and why it is healthy to do so. They are introduced to ways of using fruits and vegetables that may be new to them. Students are also shown that fruits and vegetables can be tasty and easy to fix. These objectives are accomplished through role modeling—most of the recipes used throughout the program use fruits and/or vegetables.

In the past, Jr. Chef Club educators have taught students about the “5 A Day” program which is sponsored by the National Cancer Institute and the Produce for Better Health Foundation and works in partnership with the health community, government agencies, the fruit and vegetable industry, and other private sectors. Jr. Chef has moved away from the 5-A-Day slogan, since recommendations are no longer “5 servings a day.” However, the website: <http://www.5aday.com> has an excellent section for children where they can learn fun facts about fruits and vegetables in interactive, entertaining ways. You may choose to refer your students to this site to do research—possibly to write an advertisement, poem or poster for their favorite fruit or vegetable.

Fruits and vegetables are “Glow” foods. They keep skin healthy looking, help eyes sparkle and keep students in tip-top shape on the inside. “Glow” foods provide vitamins, minerals, fiber, and phytochemicals that support health and help prevent chronic diseases. For example:

- **Vitamin A:** Helps eyes to see clearly both day and night, and keeps them sparkling and healthy. (Note: Vitamin A does *not* effect/improve nearsightedness or farsightedness.)

Vitamin A is found in plant foods and in foods from animals. It is also found in fortified milk and in liver. The type of vitamin A found in plants (beta-carotene) also acts as an antioxidant. This means it helps protect cells from oxidizing free radicals. Free radicals damage cells and can cause cancer, heart disease, cataracts and some experts think it may contribute to aging. Free radicals are formed when the body is exposed to things such as air pollution, cigarette smoke, X-rays, UV rays from the sun, rancid foods and over-heated oil, as in deep fryer at fast food restaurants. The body is exposed to many things that can harm cells; beta-carotene helps protect cells from these things that can damage them and make us sick. Beta-carotene is turned into vitamin A inside the body.

The plant form of vitamin A, beta-carotene, is found especially in orange colored vegetables (carrots, yams, sweet potatoes, squash, pumpkin) and in dark green vegetables (broccoli, romaine lettuce, spinach, kale). The green chlorophyll in these plants covers up their orange/red colors. This is similar to tree leaves which are green all summer, but when the chlorophyll dries up in the fall, the beautiful oranges, reds and yellows that were always there, are beautifully revealed.

- **Vitamin C:** Helps skin be supple, stretchy, moist and healthy feeling. Vitamin C forms the foundation of our bones, skin, hair, and all our internal organs. If we didn't have vitamin C, we'd be limp little puddles on the ground! Vitamin C helps our body be firm and strong.

Vitamin C is also an antioxidant, like beta-carotene, serving to keep us extra healthy. Research indicates that although it does not prevent colds, it may decrease a cold's severity and duration. This vitamin is found in abundance in all citrus fruits as well as in strawberries, cantaloupe, broccoli, bell peppers and potatoes. It is plentiful in most of the other fruits and vegetables too.

- **Potassium:** This mineral keeps the heart healthy. It normalizes the heartbeat and helps keep blood pressure in check. Potassium is abundant in most fruits and vegetables. Bananas have a reputation as being high in potassium, but other foods such as acorn squash, potatoes,

prunes, cantaloupe, oranges, tomatoes, dark leafy greens, and dried beans (black beans, kidney beans, etc) have nearly as much or more potassium. Overall, fruits and vegetables are a good source of potassium. The 2005 Dietary Guidelines put a new emphasis on potassium, recommending increased consumption levels:

Children ages 4–8: 3,800 milligrams potassium

Children ages 9–13: 4,500 milligrams potassium

(For comparison, a banana contains about 450 milligrams of potassium, and a cup of acorn squash contains about 900 milligrams.)

- **Fiber:** In general, fruits and vegetables have fiber that keeps the colon swept clean and the body healthy. Most of the fiber in fruits and vegetables is “insoluble,” the kind that keeps the colon healthy. Yet these foods also contain “soluble” fiber, which can help lower blood cholesterol levels.
- **Phytochemicals:** These are substances that occur naturally and abundantly in plant foods, like fruits and vegetables. Many phytochemicals are actually the pigments that give color to fruits and vegetables. These compounds are not vitamins or minerals, but they play a positive role in good health. Hundreds have been identified so far, and scientists expect to identify thousands more. It will be years before we fully understand and know all the functions of these health-promoting substances nature has provided. Many of them are antioxidants much more powerful than vitamin C or beta-carotene. They help keep cancer away, boost the immune system and mimic estrogens. This is too much information for children this age, so merely explain the concept as:

Special substances that give fruits and vegetables all their pretty colors help us stay extra healthy. So eat fruits and vegetables every day, and choose ones with different colors.

People are often concerned about the price of fruits and vegetables, thinking they are expensive. But when compared to the amount of vitamins and minerals you get for the money, they are a nutritional bargain. When over 600 supermarket foods were compared for the amount of nutrients they offered compared to the price paid for them, fruits and vegetables came out big winners. (Journal of the American Dietetic Association, Dec. 2005.)

The foods that scored the highest—which meant they were chock-full of nutrients and the price was reasonable, were oranges, bananas, carrots, cabbage, tomatoes, zucchini, celery, onions, canned mixed vegetables and fruit juices.

Nutrient Symbols

Use hand symbols with saying to teach the nutrients that the “Glow” foods offer. Then make a game of using the hand motions every time you say one of the nutrients.

- *Vitamin A*—put fingertips together in front of face (letting arms form the A) then point to your eyes. Say “Vitamin A for healthy eyes”.
- *Vitamin C*—make a “C” by cupping your hand, then gently pull up a pinch of skin on your arm. Say “Vitamin C for healthy skin.”
- *Potassium*—hold arms in circular shape in front of you to form a large cooking pot (pot sounds like potassium). Then thump your hand on your chest for heartbeat. Say “Potassium for a healthy heart.”
- *Fiber*—perform a sweeping motion in front of your body. Say “Fiber sweeps our insides clean.”

Food Safety for Fruits and Vegetables

Many fruits and vegetables are imported—some from countries where hygienic standards are not as high or regulated as they are in the United States. Some of this produce, as well as domestically grown produce, may carry a host of bacteria that can cause illness. Pesticides used on crops are also a concern—making their way up the food chain and possibly causing illness and cancer.

To safeguard health, students need to learn to wash ALL fruits and vegetables before eating them. Some people don’t realize the importance of washing produce that can be peeled. For instance: oranges, bananas and watermelon seem safe since the peel isn’t eaten. But a knife blade cutting into the produce can carry bacteria that are on the outside deep into the inside of the fruit or vegetable.

In addition, much of our produce is handled by many people before it reaches us from field workers to produce stock people at the grocery store to other customers who examine each item—sometimes picking them up and putting them back to find just the right ones. Who knows what bacteria are on all those hands?

Washing will also help to remove waxy coatings and anything that might be trapped by the coating. It can also help to remove pesticide residues. Peeling is also a good way to get rid of residues, such as peeling carrots or potatoes. Peel thinly to preserve as many nutrients as possible, but you will still lose some fiber. Purchasing “certified organic” produce will help to eliminate pesticides from your diet too, without peeling; but it is often priced at a premium. Be sure to wash all organic produce, as it can be contaminated with bacteria from manure and other sources—just like non-organically grown produce.

How do you give fresh produce a bath or shower? Wash your own hands first, then use briskly running water and scrub the item with a nylon scrubber or stiff brush. On small items, such as berries and grapes, put them in a strainer or colander and run water briskly over them while gently rubbing and shifting them around. The force of the running water, plus scrubbing or rubbing is sufficient to remove unwanted substances. Do NOT use soap—it's not necessary and is not approved for food use. Soap can be absorbed by the produce. Soap residue, in a large enough quantity, can cause diarrhea.

Once the produce is clean, be sure knives and cutting boards are also clean. It's a good idea to have separate cutting boards—one for produce and one for meats. WSU Extension recommends using plastic cutting boards rather than wood to guard against food borne illness. This helps avoid cross contamination. If your household has only one cutting board, be sure to clean and sanitize the board when switching from meats to produce. To sanitize a cutting board, use a diluted bleach solution— $\frac{3}{4}$ teaspoon bleach in one quart of water. Keep in a labeled spray bottle. Use soap and water first to clean the cutting board, then always sanitize the board with the spray bottle. Leave on for one to two minutes and rinse.