

Cooking A World of New Tastes



SEGMENT 3

Cooking With Dry Heat

- Stir-Frying
- Roasting
- Baking





SEGMENT 3

Cooking with Dry Heat

Learning Objectives

- Use the stir-fry cooking method
- Demonstrate roasting and baking techniques

This segment explores cooking with dry heat or cooking with little or no fat or moisture, yet retaining a food item's natural flavors and colors. Dry heat cooking includes stir-frying, roasting, and baking.

“The food we eat comes from all corners of the world, which helps open our eyes to different things; we learn more even when we’re not in the classroom, but sitting at our tables talking to our friends in the cafeteria.”

Student, Sudbrook Magnet Middle School, Baltimore, Maryland





Stir-Frying

Stir-frying is a cooking method similar to sautéing in which items are cooked over very high heat, using little fat. Usually this is done in a wok or tilt fry skillet and the food is kept moving constantly.

A variety of foods may be combined with stir-frying

- Beef, veal, pork, lamb, and poultry
- Seafood
- High-moisture vegetables
- Precooked vegetables and potatoes (as a means to finish or re-heat)

Cooking Medium

- Must be able to reach relatively high temperatures without breaking down or smoking
- Peanut oil, because of its flavor and its high smoking point, traditionally used
- Canola oil, low in saturated fat, can be used

Liquid for sauce

- soy sauce
- meat glaze
- other liquids

Optional Components (for stir-fry)

- aromatics
 - herbs
 - spices
 - citrus zest
- vegetable garnishes
 - thin julienne
 - dices
 - oblique cut
- thickeners
 - arrowroot
 - cornstarch
 - flour



Quick Steps for Stir-Frying:

1. Heat the oil in a wok, large sauté pan, or tilt fry skillet.
2. Add the main item.
3. Stir-fry, keeping the food in constant motion.
4. Add additional ingredients, including aromatics, in the proper sequence (longest cooking in first, shortest-cooking in last).
5. Add the liquid for the sauce; add the thickener.
6. Serve the food immediately.

Pre-preparation

The pre-preparation time required for stir-frying is long but this is offset by the very short cooking time. It is important that foods be cut uniformly so that all foods will be properly cooked and at the same time. Consider the age of your customer when cutting meats and vegetables. Small children will require smaller pieces than high school students.

Pre-prepare all ingredients before beginning to stir-fry. Pre-preparation time may be shortened by using frozen vegetables and raw diced chicken.

Preparation

Stir-fried foods must be prepared in small batches. USDA's Toolkit recipe for Stir-Fry recommends batches no larger than 50 servings per batch. Weigh all ingredients in advance in the quantities needed for 50 servings.



Chef's Tip

"Now what's real important ... you can HEAR it cooking. That's important! You've got to hear food cooking as well as see it!"

— Chef Ron De Santis, CMC
Culinary Institute
of America

Culinary Tip

- Use a well-seasoned or Teflon pan so that no additional fat is needed
- Serve with light, flavorful sauces
- Use low-fat and low-calorie liquids to deglaze
- Use arrowroot or cornstarch to thicken the sauce if necessary
- When cooking several batches, as Tool Kit suggests: remove batch after step 4 and pour pre-prepared sauce on food in steam table tray.



Safety Tip

Caution:

Ingredients should be free of excessive amounts of water. This is very important when adding foods to hot oil to prevent spattering and excessive steaming.



Chef's Tip

Bake or brown beef cubes in oven; then add to stir-fry mixture of sauce and vegetables.



Success in stir-frying depends upon the foods you are using and the order in which you introduce the different foods to the cooking process. The vegetables are added one at a time, starting with the one that requires the longest cooking time. When the additions are timed properly, all the vegetables finish cooking at the same time. Stir-frying time may be reduced for long cooking vegetables if they are steamed lightly before adding to the stir-fry.

Stir-fried foods should not appear raw and should have an appropriate color. The texture should be moist and tender.

Heat oil until it is very hot. The oil should be able to withstand high temperatures without breaking down or smoking excessively. Peanut oil, because of its flavor and high smoking point, is traditionally used. Using part sesame oil will yield an authentic Oriental flavor. Since sesame oil is expensive, use in small quantities for flavor only. Canola or vegetable oil may also be used.

Add the vegetables and stir-fry. Use a gentle stir-and-toss motion with a spatula, being careful not to break vegetables. If more than one vegetable is used, add the harder one first, and the softer cooking ones last. If you wish to add all of the vegetables at one time, longer-cooking (harder) vegetables may be lightly steamed first. Remove from heat and hold at a temperature of 140° F or higher.

Add meat and leave it untouched until it begins to brown. Then stir and toss it with a spatula so that it sears and cooks evenly. A quick sear is important in order to seal in the flavors and juices.

Return vegetables to stir-fry and heat thoroughly with meat. Add sauce. Heat and serve immediately.

At all times while stir-frying, keep food in constant motion by stirring, lifting, and tossing.

Stir-fried foods should be served immediately. If allowed to stand too long, they will become flabby, soft, and greasy. Weak flavor indicates that the food was stir-fried at too low a temperature or that the pan was too crowded.

Seasonings

Excess sodium was once the villain of Chinese cookery. Today low-sodium stocks and low-sodium soy sauces have tamed this beast. MSG (monosodium glutamate) is no longer a necessary ingredient and is usually omitted from any recipe.

Refer to USDA's Tool Kit recipe for Stir-Fry Sauce. This recipe can be made up to 2 days in advance. It makes an excellent sauce for stir-fried vegetables. Use 1 quart sauce for each 12 pounds of vegetables. This is a good "starter" recipe for learning stir-fry techniques with a single vegetable.

Presentation

Display on school lunch tray with following menus:

Menu #1

Stir-Fry Chicken
Steamed Rice
Fresh Pear
Gingerbread
Low Fat Milk

Menu #2

Stir-Fry Beef
Lo Mein Noodles
Broccoli & Cauliflower Polonaise
Cherry Crisp
Low Fat Milk

Use whole wheat spaghetti noodles for the lo mein noodles.

Cooked, diced chicken may be substituted for the raw chicken specified in USDA's Tool Kit recipe for Stir-Fry. Caution must be exercised to only heat the meat through. Overcooking will result in meat that is tough.



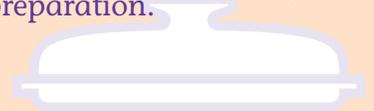
STIR-FRY and GINGERBREAD recipes
(See pages 77 & 83 from USDA's Tool Kit)

Safety Tip

Safe Food Practices

- Wash hands thoroughly before handling foods and after any incident of potential contamination.
- Use utensils that have been washed, rinsed, and sanitized properly.
- Wash raw vegetables thoroughly under running water to remove soil and other contaminants before cutting them.
- Hold all chilled foods at 40°F or lower until ready to cook.
- Cook meats to proper internal temperatures.
- Cutting board and utensils must be washed, rinsed, and sanitized properly after trimming and cutting chicken or other meat to avoid cross-contamination of other foods. Avoid handling other foods or utensils while handling raw meat.
- Serve stir-fry at a temperature of 140° F or higher.

See Resources, page 108, for more information about safe food handling and preparation.





Roasting

Roasting is cooking by dry heat. This method is suitable for cuts of meat, poultry, and some seafood items that are larger than a single portion. Cuts of meat to be roasted are usually tender.

Suitable foods that are roasted:

- Beef
- Veal
- Lamb
- Pork
- Poultry
- Seafood
- Vegetables

Mirepoix - A combination of vegetables (usually onions, carrots, and celery)



Culinary Tip

Do's

- Flavor foods with marinades
- Use herbs and spices for seasonings
- Serve with au jus (natural juices)
- Trim excess fat before cooking
- Roast meats on a rack
- Remove skin of poultry after roasting

Don'ts

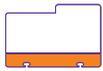
- Don't pierce the roast when turning or removing from the oven (loss of juices results).
- Don't cover the roast during cooking (it causes steaming and toughens fibers).
- Don't use higher heat than necessary during roasting (causes excessive shrinkage and drying).
- Don't add liquid during roasting.



Roasting Information

- Meat that renders a lot of fat should be placed on a rack to prevent contact with the fats and juices.
- The temperature of the oven must be regulated to suit the kind of meat being roasted and its size.
- The type of roasting pan will vary according to the amount of meat or poultry to be roasted, its size and shape, whether or not a rack is used, and spacing of the oven shelves.
- All roasts should have a resting period before carving.
- All roasts should be sliced against the grain.
- Baste the roast with fat drippings that collect in the pan, to prevent meat from drying out.

Roasting is a great cooking method. Try it with potatoes for a new look. Here's a winning recipe from the School Lunch Challenge:



Spicy Italian Roast Potato Chunks
(See page 85)



Chef's Tip

"It's so easy to prepare Spicy Italian Roast Potato Chunks and the kids will love it."

— Aline Rogers,
Food Production Assistant,
Potowmack Elementary
School, Sterling, VA





Baking



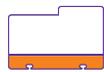
Chef's Tip

“It’s a real good dessert, easy to make. It’s Fruit Pan Dowdy... You can use a variety of fruits in this recipe. Fruit cocktail would also be great!”

— Chef Ron De Santis, CMC
Culinary Institute
of America.

Baking is a dry heat cooking method used for most food items. Baking cooks food by surrounding it with hot dry air. Baking uses no additional liquids, as well as a longer cooking time and lower oven temperatures compared to roasting.

Try some Tool Kit recipes such as New Oatmeal Raisin Cookies and Royal Brownies. These recipes were standardized with the use of applesauce to make them lower in fat.



Fruit Pan Dowdy
(See page 87)

From the
Kitchen of



Stir Fry, (Chicken, Beef, Pork) (Tool Kit)	77
Stir Fry Sauce (Tool Kit)	79
Chicken Fajitas (Tool Kit)	81
Gingerbread (Tool Kit)	83
Spicy Italian Roast Potato Chunks	85
(School Lunch Challenge II)	
Fruit Pan Dowdy (School Lunch Challenge II)	87

**Recipes are from USDA's Tool Kit for Healthy School Meals,
and School Lunch Challenge II Recipes**

Questions & Answers

- Question:** How long do you cook stir fry?
Answer: Preparation of meat, vegetables, and sauces can be long but the actual cooking time is very short.
- Question:** How do you know when meat is done?
Answer: Cook chicken until it loses the pink color. Cut a large piece in half. If it is no longer pink in the middle, and its juices are clear or yellowish, it is done. Be careful not to overcook because this will make the meat tough.
- Question:** In stir fry, when do you add the vegetables and what kind first?
Answer: When using fresh vegetables, add the vegetables requiring the longest time to cook first. Carrots and celery are examples. Then add vegetables that will cook quickly.
- Question:** Can you substitute other fruits in the Pan Dowdy recipe?
Answer: Any fruit or combination of fruits may be used in the Fruit Pan Dowdy recipe.



Chef's Tip

Wipe the rim of the pan as a final touch before putting it in the oven, so that nothing burns on the edges. As it goes to the steam table, or serving line, it looks nice and clean.

— Chef Ron De Santis, CMC
Culinary Institute
of America

