



**In The Kitchen**

## **Cooking Techniques: How It All Boils Down**



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# Cooking Techniques

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# Summary

This program covers the equipment required, basic preparations techniques and terminology used in dry-heat and moist-heat cooking processes. Thirteen common techniques are reviewed, with step-by-step direction provided by Chef Christopher Koetke, Dean of Culinary Arts at Chicago's Kendall College. Ovens and utensils are discussed, as are safe and appropriate temperatures for oils, oven settings and food doneness. Emphasis is also placed on organization, health and overall kitchen safety in food handling and preparation.

## Kitchen Organization

Preparing the work area, equipment, utensils and ingredients

## Food and Kitchen Safety

Personal cleanliness and how to avoid food-borne illness

### Cooking equipment:

- Convection oven - circulates hot air with a fan to cook food
- Conduction oven - cooks by using the direct transfer of heat to food
- Radiant oven - radiates heat onto the food from a single source
- Grills, both outdoor barbeques and indoor burners
- Stove top burners

## Techniques for dry-heat cooking:

Dry-heat cooking browns foods by using little or no liquid.

### Cooking methods using hot fat:

- |                 |             |
|-----------------|-------------|
| Deep-fat frying | Sautéing    |
| Pan-frying      | Stir-frying |

### Cooking methods that do not use added oils:

- |          |          |
|----------|----------|
| Roasting | Broiling |
| Baking   | Grilling |

## Techniques for moist-heat cooking:

Moist-heat cooks foods with liquid or steam and does not brown foods.

### Moist-heat methods for the stove top:

- |           |           |
|-----------|-----------|
| Blanching | Simmering |
| Boiling   | Steaming  |
| Poaching  |           |

## Combination methods:

Two other methods combine both moist-heat and dry-heat techniques.

Braising

Stewing

# Kitchen Organization

*Mise en place* is a French term that translates to “everything in its place.” This phrase refers to the importance of being organized in the kitchen.

1. Read the recipe.    2. Assemble all needed kitchen tools and utensils.    3. Assemble all ingredients.

## Kitchen Safety Tips

When everything is “in its place,” take a minute to think about kitchen safety.

- Pay close attention to the proximity of hands and fingers to the blade when using a grater or peeler.
- When using a food processor, carefully put the shredding blade inside and latch the top onto the bowl before turning the unit ON.
- Always be alert when working around hot surfaces and open flame. Most fires are caused by burners that have been left on and unattended.
- Never walk away from a flame or leave boiling foods unattended.
- Do not wear loose fitting clothing or long sleeves that could easily fall into open flames.
- Turn pot handles inward to avoid accidentally knocking them off the stove.
- Use oven mitts when handling hot pots and pans.
- When deep-frying, to help provide protection from burns, and allow the food to cook evenly and only fill the fryer with oil half way.
- Never put water into a pan with hot oil. Water boils instantly in hot oil and can make the oil splash up or overflow, causing dangerous burns and ruined food.
- To prevent scratches to the surface of coated, non-stick pans never use metal utensils. These utensils can cause the surface of the pan to flake off and contaminate the food.
- Place the oven rack at the correct location to accommodate the height of the food and pan before you preheat the oven.
- After putting a lid on a steaming pot, be sure to turn the burner down to prevent the water from overflowing.
- Be careful of the steam cloud when removing the lid from a pot.

# Health and Food Safety Tips

## Health Tips

Anytime you are working in the kitchen, cleanliness is a must. Before you begin preparing your food, the most important step, before you do anything else is: **wash your hands**.

- Use water that is hot and an anti-bacterial soap
- Scrub hands thoroughly for 20 seconds, getting in between the fingers
- Rinse well, dry with single-use paper towel, then dispose of the towel

## Food Safety Tips

- Never use the same cutting board for raw meat and vegetables so as prevent meat bacteria from transferring to the other foods.
- To avoid food poisoning from uncooked bacteria, always use a thermometer to ensure the food is completely cooked.

# Cooking Techniques

## Matching Quiz

Match the words in the first column to the best available answer in the second column.

- |       |   |                    |
|-------|---|--------------------|
| _____ | Requires a special pan called a wok and a small amount of hot oil.  | 1) convection oven |
| _____ | Cooking food in a liquid heated just below a simmer, which allows food to remain tender and not lose its shape.       | 2) braising        |
| _____ | Cooks by transferring heat directly to the food.  | 3) overflowing     |
| _____ | Searing food so that a brown, caramelized crust forms on the surface, and then simmering in a small amount of liquid. | 4) conduction oven |
| _____ | Cooking by direct exposure to radiant heat from beneath the food through open metal grates.                           | 5) poaching        |
| _____ | Cooks with hot air that circulates with a fan.  | 6) stir-frying     |
| _____ | Blanching, boiling, poaching, simmering and steaming are all examples of this method of cooking.                      | 7) dry-heat        |
| _____ | This cooking technique is a combination method, combining moist-heat and dry-heat techniques.                         | 8) moist-heat      |
| _____ | Deep-fat frying, stir-frying, roasting, baking and broiling are all examples of this method of cooking.               | 9) stewing         |
| _____ | After putting a lid on a steaming pot, be sure to turn the burner down to prevent water from doing this.              | 10) grilling       |

# Cooking Techniques

## Matching Quiz

- |           |   |                    |
|-----------|---|--------------------|
| <u>6</u>  | Requires a special pan called a wok and a small amount of hot oil.  | 1) convection oven |
| <u>5</u>  | Cooking food in a liquid heated just below a simmer, which allows food to remain tender and not lose its shape.       | 2) braising        |
| <u>4</u>  | Cooks by transferring heat directly to the food.  | 3) overflowing     |
| <u>2</u>  | Searing food so that a brown, caramelized crust forms on the surface, and then simmering in a small amount of liquid. | 4) conduction oven |
| <u>10</u> | Cooking by direct exposure to radiant heat from beneath the food through open metal grates.                           | 5) poaching        |
| <u>1</u>  | Cooks with hot air that circulates with a fan.  | 6) stir-frying     |
| <u>8</u>  | Blanching, boiling, poaching, simmering and steaming are all examples of this method of cooking.                      | 7) dry-heat        |
| <u>9</u>  | This cooking technique uses both moist-heat and dry-heat techniques.  | 8) moist-heat      |
| <u>7</u>  | Deep-fat frying, stir-frying, roasting, baking and broiling are all examples of this method of cooking.               | 9) stewing         |
| <u>3</u>  | After putting a lid on a steaming pot, be sure to turn the burner down to prevent water from doing this.              | 10) grilling       |

# Cooking Techniques

## Fill-In-The-Blank

Select the correct term from the list below and write it in the blank space.

1. Deep-fat frying, pan-frying, sautéing and stir-frying are all stovetop, \_\_\_\_\_ methods of cooking that brown food using oil.
2. Simmering and boiling are different ways to describe the temperature of \_\_\_\_\_ when it's cooking food.
3. Over-steamed vegetables lose their firmness, color and \_\_\_\_\_.
4. \_\_\_\_\_ is achieved by first boiling and then “shocking” the food in ice water.
5. Deep-fat frying, pan-frying, sautéing and stir-frying are all stovetop, dry-heat methods of cooking that brown food using \_\_\_\_\_.
6. If an oven doesn't have a “preheat” button, a feature which tells you when the desired temperature has been reached, use an oven \_\_\_\_\_ to measure the temperature inside.
7. When \_\_\_\_\_ foods, be sure to only fill the fryer or pot halfway. The food needs room to float in the oil to cook properly, and the extra space helps provide some protection from burns if the oil splashes or boils over.
8. It only takes about 3-4 minutes to \_\_\_\_\_ vegetables, and they should remain crisp during the process.
9. The only way to really know if meat is done cooking, and to avoid food poisoning from uncooked \_\_\_\_\_, is to use a meat thermometer.
10. \_\_\_\_\_ cooks by direct exposure to radiant heat that comes from beneath food through open metal grates.

<b>moist-heat</b>	<b>nutrients</b>	<b>braising</b>	<b>stir-fry</b>	<b>thermometer</b>
<b>Celsius</b>	<b>liquid</b>	<b>saturated fat</b>	<b>oil</b>	<b>stewing</b>
<b>bacteria</b>	<b>deep-fat frying</b>	<b>poaching</b>	<b>grilling</b>	<b>blanching</b>

# Cooking Techniques

## Fill-in-the-Blank Exercise Answer Key

1. Deep-fat frying, pan-frying, sautéing and stir-frying are all stovetop, **dry-heat** methods of cooking that brown food using oil.
2. Simmering and boiling are different ways to describe the temperature of **liquid** when it's cooking food.
3. Over-steamed vegetables lose their firmness, color and **nutrients**.
4. **Blanching** is achieved by first boiling and then “shocking” the food in ice water.
5. Deep-fat frying, pan-frying, sautéing and stir-frying are all stovetop, dry-heat methods of cooking that brown food using **oil**.
6. If an oven doesn't have a “preheat” button, a feature which tells you when the desired temperature has been reached, use an oven **thermometer** to measure the temperature inside.
7. When **deep-fat frying** foods, be sure to only fill the fryer or pot halfway. The food needs room to float in the oil to cook properly, and the extra space helps provide some protection from burns if the oil splashes or boils over.
8. It only takes about 3-4 minutes to **stir-fry** vegetables, and they should remain crisp during the process.
9. The only way to really know if meat is done cooking, and to avoid food poisoning from uncooked **bacteria**, is to use a meat thermometer.
10. **Grilling** cooks by direct exposure to radiant heat that comes from beneath food through open metal grates.

# Cooking Techniques

## Multiple Choice

Circle the best answer for each question.

<p>1. Dry-heat cooking techniques do not include:</p> <ul style="list-style-type: none"> <li>a) Blanching</li> <li>b) Stir-frying</li> <li>c) Baking</li> <li>d) Sautéing</li> </ul>	<p>6. Braising is typically this combination of techniques:</p> <ul style="list-style-type: none"> <li>a) Searing and simmering</li> <li>b) Conduction and convection</li> <li>c) Sautéing and stir-frying</li> <li>d) Steaming and poaching</li> </ul>
<p>2. Which one of these is NOT a safety tip?</p> <ul style="list-style-type: none"> <li>a) Use oven mitts</li> <li>b) Never leave boiling foods unattended</li> <li>c) Only add water to a fryer when it's hot</li> <li>a) Don't wear loose clothing near flames</li> </ul>	<p>7. The boiling point of water at sea level is:</p> <ul style="list-style-type: none"> <li>a) 325° to 375° F or 163° to 191° C</li> <li>b) Exactly 212° F or 100° C</li> <li>c) Approximately 32° F or 12° C</li> <li>d) Around 350° F or 177° C</li> </ul>
<p>3. Being prepared and organized in the kitchen is known as:</p> <ul style="list-style-type: none"> <li>a) Microplaning</li> <li>b) Mise en place</li> <li>c) Mise en scene</li> <li>d) Sautéing</li> </ul>	<p>9. In French, sauté means to:</p> <ul style="list-style-type: none"> <li>a) Broil</li> <li>b) Jump</li> <li>c) Burn</li> <li>d) Stew</li> </ul>
<p>4. To avoid accidentally knocking cooking pots off the stove, turn their handles:</p> <ul style="list-style-type: none"> <li>a) Sideways</li> <li>b) Toward the front of the stove</li> <li>c) Outward</li> <li>d) Inward</li> </ul>	<p>9. To avoid food poisoning from uncooked bacteria, always use a:</p> <ul style="list-style-type: none"> <li>e) Meat Thermometer</li> <li>f) Non-stick pan</li> <li>g) Single-use paper towel</li> <li>h) Metal skewer</li> </ul>
<p>5. Rapid, rolling bubbles are indicative of:</p> <ul style="list-style-type: none"> <li>a) Poaching</li> <li>b) Overflow</li> <li>c) Boiling Liquids</li> <li>d) Blanching</li> </ul>	<p>10. The moist-heat technique cooks food with:</p> <ul style="list-style-type: none"> <li>a) Liquid or steam, but without fat</li> <li>b) Canola oil on the stove top</li> <li>c) Saturated fat</li> <li>d) A thermometer</li> </ul>

# Cooking Techniques

## Multiple Choice Answer Key

<p>1. All of these are Dry-heat cooking techniques EXCEPT:</p> <ul style="list-style-type: none"> <li>a) <b>Blanching</b></li> <li>b) Stir-frying</li> <li>c) Baking</li> <li>d) Sautéing</li> </ul>	<p>6. Braising is typically this combination of techniques:</p> <ul style="list-style-type: none"> <li>a) <b>Searing and simmering</b></li> <li>b) Conduction and convection</li> <li>c) Sautéing and stir-frying</li> <li>d) Steaming and poaching</li> </ul>
<p>2. Which one of these is NOT a safety tip?</p> <ul style="list-style-type: none"> <li>a) Use oven mitts</li> <li>b) Never leave boiling foods unattended</li> <li>c) <b>Only add water to a fryer when it's hot</b></li> <li>d) Don't wear loose clothing near flames</li> </ul>	<p>7. The boiling point of water at sea level is:</p> <ul style="list-style-type: none"> <li>a) 325° to 375° F or 163° to 191° C</li> <li>b) <b>Exactly 212° F or 100° C</b></li> <li>c) Approximately 32° F or 12° C</li> <li>d) Around 350° F or 177° C</li> </ul>
<p>3. Being prepared and organized in the kitchen is known as:</p> <ul style="list-style-type: none"> <li>a) Microplaning</li> <li>b) <b>Mise en place</b></li> <li>c) Mise en scene</li> <li>d) Sautéing</li> </ul>	<p>9. In French, sauté means to:</p> <ul style="list-style-type: none"> <li>a) Broil</li> <li>b) <b>Jump</b></li> <li>c) Burn</li> <li>d) Stew</li> </ul>
<p>4. To avoid accidentally knocking cooking pots off the stove, turn their handles:</p> <ul style="list-style-type: none"> <li>a) Sideways</li> <li>b) Toward the front of the stove</li> <li>c) Outward</li> <li>d) <b>Inward</b></li> </ul>	<p>9. To avoid food poisoning from uncooked bacteria, always use a:</p> <ul style="list-style-type: none"> <li>a) <b>Meat Thermometer</b></li> <li>b) Non-stick pan</li> <li>c) Single-use paper towel</li> <li>d) Metal skewer</li> </ul>
<p>5. Rapid, rolling bubbles are indicative of:</p> <ul style="list-style-type: none"> <li>a) Poaching</li> <li>b) Overflow</li> <li>c) <b>Boiling Liquids</b></li> <li>d) Blanching</li> </ul>	<p>10. The moist-heat technique cooks food with:</p> <ul style="list-style-type: none"> <li>a) <b>Liquid or steam, but without fat</b></li> <li>b) Canola oil on the stove top</li> <li>c) Saturated fat</li> <li>d) A thermometer</li> </ul>

# Glossary of Terms

**Baking** – Cooking food in dry, indirect hot air; usually applies to cakes and cookies (like roasting).

**Blanching** – This technique cooks fruits and vegetables by briefly boiling them and then “shocking” them in ice water to retain color and crispness.

**Boiling** – Cooking food in hot water. The “boiling point” is 212° Fahrenheit or 100° Celsius.

**Braising** – A two-step dry-heat cooking process. Sear, or cook at a high temperature so that a brown, caramelized crust forms on the surface, then simmer slowly in a small amount of liquid.

**Broiling** – Cooking with a radiant and intense direct heat source that comes from above the food, cooking only one side of the food at a time. Taken from the French word “bruler” meaning “to burn.”

**Convection oven** – Cooks with hot air that circulates with a fan.

**Conduction oven** – Cooks by transferring heat directly to the food.

**Deep-fat frying** – Cooking food by fully immersing it in hot fat.

**Dry-heat cooking** – Browning and cooking foods by using little or no liquid utilizing a convection, conduction, or radiant oven: baking, broiling, deep-fat frying, grilling, roasting, pan-frying, sautéing and stir-frying.

**Grilling** – Cooking by direct exposure to radiant heat that comes from beneath food through open metal grates, heating first one side, then the other. The goal is to brown without burning.

**Marbled** – Marbling in red meat indicates that it contains intramuscular fat which gives it an appearance similar to a marble pattern.

**Mise en place** – Refers to being organized in the kitchen. A French term that translates to “everything in its place” (be prepared).

**Moist-heat cooking** – Cooking food with liquid or steam; not browning by heat or fat: blanching, boiling, poaching, simmering, and steaming on the stovetop. Poaching, simmering and boiling are different ways to describe the temperature of liquid when it is cooking food.

**Pan-frying** – Cooking with a small amount of hot fat or oil in a frying pan, resulting in food that’s crisp on the outside, moist on the inside. Uses half the fat of deep-fat frying.

**Poaching** – A delicate process of cooking food in a liquid at 160° to 180° Fahrenheit or 71° to 82° Celsius that allows food to remain tender while not losing its shape.

**Preheat** – An oven feature which indicates when the desired temperature has been reached; also refers to heating an oven to the desired cooking temperature before adding the food.

**Radiant oven** – Cooks using heat that radiates from a single source within the oven.

**Roasting** – Cooking in an oven with dry, indirect hot air. Usually applies to meats and vegetables.

**Sautéing** – Cooking with a small amount of hot oil in a frying pan. In French, sauté means to “jump”. The technique is to move food around with a wooden spoon or rubber scraper and by lifting the pan from its burner and moving it back and forth horizontally to keep the food jumping. Cooks food evenly, while preventing it from sticking or burning.

**Simmering** – Cooking in liquid heated to between 185° and 200° Fahrenheit or 85° and 93° Celsius. A simmering liquid appears as small bubbles periodically popping up along the side of the pan. Used for delicate sauces where the flavors need time to blend, and tougher cuts of meat that need more time to tenderize.

**Skewers** – Thin metal or wooden sticks to hold small pieces of food together and prevent them from rolling or falling in into the flame while grilling.

**Steaming** – Using pressurized boiling water to cook food. Food cooks when steam seeps through holes in a basket without letting the meat, fish, vegetables or fruits soak in the water.

**Stewing** – Stews utilize the same process for cooking as braising, but with more liquid and smaller cuts of meat.

**Stir-frying** – Requires a special pan called a wok and a small amount of hot oil to cook the food. Keep the food moving - stir very quickly to allow the food to remain crisp during the process and keep the food “jumping” as when sautéing.

**Wok** – A versatile round-bottomed cooking vessel originating in China that is used for stir-frying.

**Yeast** – A microbe used for baking and fermentation; it produces carbon dioxide that creates bubbles.

# Additional Resources

## Print

Laresen, Linda. Busy Cooks. The Top 15 Safety Tips. Web. 27 Jul. 2009.  
<http://busycooks.about.com/od/organizingandbasics/tp/Kitchen-Safety.--PU.htm>

Maran Graphics Development Group. Maran Illustrated Cooking Basics. Course Technology PTR. Florence, KY: 2006.

## Online

Aki's Kitchen	<a href="http://www.akiskitchen.ca/">http://www.akiskitchen.ca/</a>
Cooking Glossary	<a href="http://www.international-gourmet.net/glossary.htm">http://www.international-gourmet.net/glossary.htm</a>
Culinate	<a href="http://www.culinate.com/">http://www.culinate.com/</a>
Food Day Archive	<a href="http://www.globalgourmet.com/food/foodday/">http://www.globalgourmet.com/food/foodday/</a>
Food For Thought	<a href="http://www.foodforthoughtonline.net/">http://www.foodforthoughtonline.net/</a>
Food Reference	<a href="http://www.foodreference.com/">http://www.foodreference.com/</a>
The Kitchn	<a href="http://www.thekitchn.com/">http://www.thekitchn.com/</a>
The Reluctant Gourmet	<a href="http://www.reluctantgourmet.com/technic.htm">http://www.reluctantgourmet.com/technic.htm</a>
What's Cooking America	<a href="http://whatscookingamerica.com/">http://whatscookingamerica.com/</a>