

Manager's Corner

Common Large Cooking Equipment

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PURPOSE

Improve the operation of child nutrition programs through research, education and training, and information dissemination.

VISION

Lead the nation in providing research, education, and resources to promote excellence in child nutrition programs.

MISSION

Provide relevant research-based information and services that advance the continuous improvement of child nutrition programs.

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Professional Standards

FOOD PRODUCTION – 2100

Employee will be able to effectively utilize all food preparation principles, production records, kitchen equipment, and food crediting to prepare foods from standardized recipes, including those for special diets.

2140 – Use and Care of Equipment
Properly use and care for equipment.

Introduction

Manager's Corner: Common Large Cooking Equipment is designed to empower managers to use in training their staff. Each lesson is roughly 15 minutes. This lesson plan contains:

- Learning objective
- Statement explaining the importance of the topic
- List of materials
- Instructions on how to present the information
- Questions to ask staff
- An activity to strengthen or refresh the knowledge of the staff

Lesson Overview

Instructions for lesson:

- Review the lesson objective and background information.
- Review why it is important.
- Ask staff the questions.
- Facilitate the activity outlined.
- Provide time for staff to ask questions.

Objective: Identify common large cooking equipment and use for each piece of equipment.

Background information: Using the correct equipment is a critical step in ensuring foods are cooked properly so they are safe and appealing. The first step an employee must take if they do not know how to use a feature on a piece of equipment or how to use the equipment at all is to request training from a manager or read the equipment's user manual.

There are some common pieces of equipment that may appear in your school nutrition operation, such as:

- Steam jacketed kettle- Moist heat cooking
- Steamers- Moist heat cooking
- Tilting skillets- Dry and moist heat cooking
- Combi-ovens- Dry and moist heat cooking
- Ovens (conventional and convection)- Dry heat cooking

Why it is important: In order to prepare quality foods, the staff needs to have an understanding of equipment types and uses.

Questions for Staff

- **Why is using the correct piece of equipment important?**

Answer: Using the correct equipment is a critical step in ensuring foods are cooked properly so they are safe and appealing.

- **What is the first step an employee should take if they do not know how to use a certain feature on a piece of equipment?**

Answer:

- Request training from a manager
- Reference the equipment's user manual

Please note: The answers provided are only examples and are not an inclusive list of possible responses.

- **What are the three categories of cooking methods?**

Answer:

- Dry-heat cooking – roasting, baking, and sautéing
- Moist-heat cooking – braising, steaming, simmering, and boiling
- Combination of moist and dry heat – baking, roasting, and re-heating

Activity: Equipment Selection

Activity materials included in this document:

- **Handout: Large Cooking Equipment**
- **Activity: Equipment Selection**
- **Answer Key: Equipment Selection**

Materials provided by the school nutrition operation:

- Copies of handout(s)
- Writing utensils

Activity Instructions:

- Print the handout(s) and worksheet(s)
- Individually or in teams, complete the activity worksheet.
- Match the food items with the proper type of equipment to cook the food item.

Please note: Some items may be cooked in more than one type of equipment.

Handout: Large Cooking Equipment

Working with large equipment requires a keen eye on safety, proper maintenance, and consistent cleaning. Each piece of equipment may slightly vary from other like pieces of equipment; best practice is to consult the operator's manual for specific operating questions. There are some common pieces of equipment that may appear in your school nutrition operation, such as:

A **steam-jacketed kettle** is a kettle that circulates steam through the double-sided walls, providing an even heat source. Unit types vary with features such as tilting ability, insulation, mixing arms, spigots, and lids. They can range from 2 gallons to over 250-gallon capacity. They are ideal for cooking soups, pasta, stews, sauces, and chili.

Tilting skillets, also known as braisers or tilting frying pans, are freestanding units with a relatively shallow cooking pan. A tilt skillet is a versatile piece of commercial cooking equipment that allows the user to prepare a variety of foods in large batches. Also known as a braising pan, the tilt skillet can be used to simmer, steam, sauté, or as a griddle. A useful feature of a tilting skillet is the ability to tilt the pan forward to transfer foods into storage containers or serving dishes.

Steamers utilize steam as the heat source to cook foods. Due to the efficient method of heat transfer, it cooks food quickly without drying it out. Steamed vegetables retain their vibrant color and natural texture. There are two types of steamers commonly found in school kitchens: pressure steamers and convection steamers.

- Pressure steamers allow the pressure of the steam to build gradually within the compartment during the cooking process, up to anywhere between 5 and 15 pounds of pressure per square inch (PSI).
- Convection steamers cook food at 212 °F under no pressure. The steam transfers the heat to cook the food.

Handout: Large Cooking Equipment, continued

Ovens are simply insulated boxes that cook foods by surrounding the food item with heat. There are three types of ovens commonly found in school kitchens.

- **Conventional ovens** typically produce heat from an element in the bottom of the oven. Foods near the bottom may cook faster than foods higher up due to where the heat source is located. It is a good idea to rotate foods between racks, during the cooking process, to ensure food items are cooked more evenly.
- **Convection ovens** utilize a blower or fan to move hot air within the oven, evenly surrounding food items with hot air. Foods cook quicker and more even than in a conventional oven. A note of caution, some older convection ovens still may develop "hot spots," areas of the oven that are hotter than the rest of the oven. These areas are typically in the top corners of the oven where air may not circulate as well, especially when the oven is overcrowded.
- **Combi ovens** combine moist- and dry-heat cooking. The oven can be used in steam mode, only producing moist air cooking. In convection mode, the oven produces dry heat cooking with circulating air; or it can be used in combination, hence the name combi – utilizing both steam and circulating air. The addition of hot air and moisture allows foods to cook faster with less loss or shrinkage.

Activity: Equipment Selection

Instructions: Match the food items listed below with the proper type of equipment to cook the food item.

Note: Some items may be cooked in more than one type of equipment.

| Steam-Jacketed Kettle | Tilting Skillet | Pressure & Convection Steamer | Conventional & Convection Oven | Combi Oven |
|--|---|---|--|--|
| Circulates steam through the double-sided walls, providing an even heat source | A freestanding unit with a relatively shallow cooking pan | Utilizes steam as the heat source to cook foods | Cooks foods by surrounding the food item with heated air | Combination of moist- and dry-heat cooking |
| | | | | |

Food Items

| | | | |
|-----------------------|-----------------------------|------------------------|--------------------------|
| Roasted Potato Wedges | Chicken Drumsticks | Frozen Vegetable Blend | Whole Grain Dinner Rolls |
| Tortilla Soup | Roasted Cauliflower Florets | Penne Pasta | Lasagna |
| Ground Beef for Tacos | Breadsticks | Stir-Fry Vegetables | Brown Rice |
| Steamed Broccoli | Baked Beans | Chili | Grilled Cheese Sandwich |

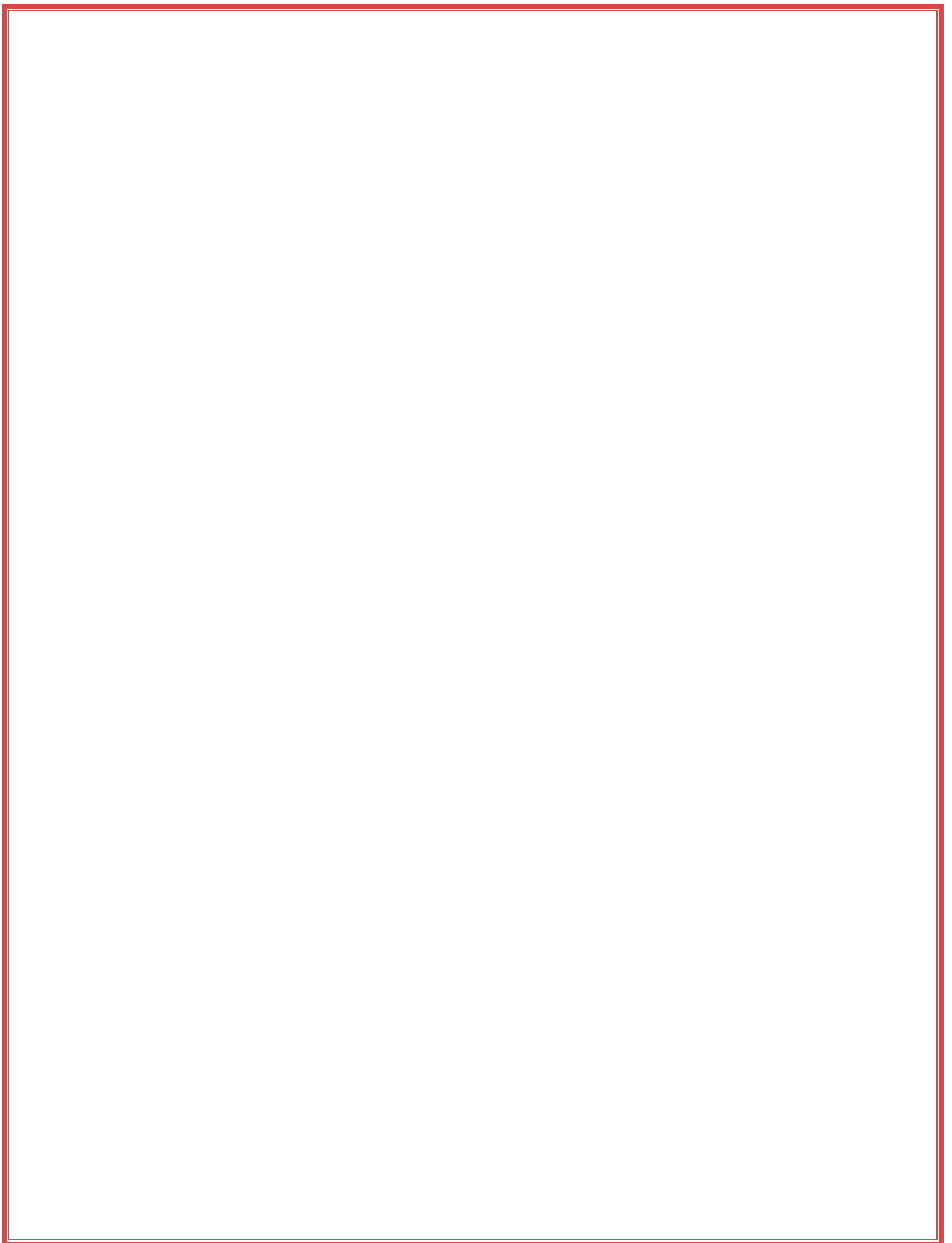
Answer Key: Equipment Selection

| Steam-Jacketed Kettle | Tilting Skillet | Pressure & Convection Steamer | Conventional & Convection Oven | Combi Oven |
|---|---|---|---|--|
| Circulates steam through the double-sided walls, providing an even heat source | A freestanding unit with a relatively shallow cooking pan | Utilizes steam as the heat source to cook foods | Cooks foods by surrounding the food item with heated air | Combination of moist- and dry-heat cooking |
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