

Meat, Fish and Poultry: Practical Application

Summary

Different cuts of meat and the proper tools and scientific principles underlying preparation methods to produce the most nutritional value and suitability.

Main Core Tie

Dietetics and Nutrition 1

[Strand 5](#)

Materials

See materials listed in the Instructional Procedures section.

Background for Teachers

Remember: meat is made up of the muscle portion of the animal along with some bone, fat, and connective tissue. Fat flecks throughout meat are known as marbling. Marbling gives meat flavor and juiciness.

Two types of connective tissue are:

Collagen is white, fairly thin tissue between layers of muscle. It softens when cooked in moist heat or liquid.

Elastin is a thick, yellowish-white connective tissue that is rubbery in texture even when cooked. It is usually cut away from meat before cooking. The only way to tenderize elastin is to pound, dice, grind, or cube it (to cut partly through it in a checkered pattern).

Connective tissue holds together the fibers of the muscle tissue. Some meats have more collagen than other meat cuts. Cuts of meat with a lot of collagen are called less tender cuts. Meats with very little collagen are called tender cuts.

Intended Learning Outcomes

Understanding scientific principles related to meat preparation will aid families and individuals in managing resources to obtain maximum nutrition and satisfaction from this important food group.

Instructional Procedures

See attachments below:

As a PREASSESSMENT, the students will determine their knowledge of meat, meat products, and their preparation methods.

The students will take notes on MEAT UNIT NOTE TAKING OUTLINE, Section I, during class discussion on meat. Have available for the students BONES IDENTIFY SEVEN BASIC CUTS charts to view as bones and cuts are discussed.

As the teacher holds up bone flash cards of each bone, the students will call out its name and cut. See BONES FLASH CARDS. (Do this activity several times.)

NOTE TO TEACHER: For your convenience, the following is the KEY to the bone pictures found in the flash cards by page number:

row 1 (right) - Blade (near back)

row 2 (left) - Arm bone

row 2 (right) - Blade (near rib)

row 3 (left) - Blade (center cut)

row 3 (right) - Back or T-bone

row 4 (left) - Back or rib bone
row 4 (right) - Flat bone (center cut)
row 5 (left) - Pin bone (near short rib)
row 5 (right) - Leg or round bone
row 6 (left) - Wedge (near round)
row 6 (right) - Breast bone and ribs

The students will view wholesale and retail cuts of the cow (BEEF CHART). Each unit will draw a cow chart on a large piece of butcher paper. Each chart must identify meat cuts (each section of the cow's body) and color code each section for tenderness. They can also identify the bones.

Pairs of students will receive an envelope of bone and meat pictures. They will sort the retail cuts and bones according to the part of the animal's body they come from. Then, the students will mix all the pictures and sort again according to tenderness.

NOTE TO TEACHER: Pictures can come from the beef and bone charts, cut apart, and placed in the envelopes. Make copies of charts from textbooks to cut apart.

Students will participate in the MEAT RELAY.

The teacher will display the transparency A MEAT LABEL and discuss it with the class.

The students will take notes on six kinds of meat and storage methods. See Section II of MEAT UNIT NOTETAKING OUTLINE.

The teacher will discuss and/or demonstrate various meat-cooking methods including dry and moist heat and the use of various pieces of equipment including the fry pan, griddle, oven, crock pot, microwave, etc. See Section III of MEAT UNIT NOTETAKING OUTLINE.

The teacher will discuss what happens if meat is burned--meat cooking is in part an oxidation reaction and the burning of meat protein is just oxidation. It is important to understand that oxidation as part of the process of meat cooking is a help, but it must be controlled.

The teacher will discuss ways to tenderize meat and will demonstrate as specified in the FAJITAS recipe (found in the Resource for Option 13) which utilizes mechanical methods and commercial meat tenderizer.

The students will complete a PROTEIN DIGESTION EXPERIMENT using a powdered meat tenderizer to simulate an enzyme effect on digestion of protein in the human body.

The students will complete the meat questions on worksheet MEAT QUESTIONS using any good food text. Correct in class.

In pairs, students will research cookbooks and find two recipes that utilize dry heat and two recipes that utilize moist heat. Have the students list:

- the recipe name
- the ingredients to provide liquid
- meat cut
- cooking temperature
- cooking time

Discuss as a class some of the recipes.

The students will complete their lab sheets in preparation for a meat lab in which they will prepare TORTILLAS, FAJITAS, and CHIMICHANGAS.

NOTE TO TEACHER: Fajitas and tortillas can be prepared during one lab with half the units preparing each. Chimichangas can be prepared as a separate lab if scheduling permits. The students will review meats by participating in a FORMATIVE REVIEW - MEAT BINGO.

The students will observe a demonstration on cutting up a chicken and answer the questions on CUTTING UP A CHICKEN DEMONSTRATION QUESTIONS STUDY SHEET.

NOTE TO TEACHER: This is an excellent place to review food sanitation and the proper care of cutting boards and other tools to prevent illnesses from foods and food preparation.

Each group of students will cut up and boil 1/2 a small chicken and complete lab sheet for a CHICKEN ENCHILADAS lab. Students will complete the lab.

After the students observe a teacher demonstration, they will complete the note-taking assignment CHICKEN IN A CHICKEN DEMONSTRATION QUESTIONS worksheet. Use CHICKEN PATTERN or have students create their own.

The students will complete a Meat Unit Homework Assignment. They will choose from one of the following recipes and prepare it for their family: SKILLET BURGERS, ORANGE CHICKEN, CHICKEN IN A CHICKEN.

The students will fill out the HOMEWORK ASSIGNMENT FORM and return it to the teacher with a parent signature. The students will take a SUMMATIVE EVALUATION - MEAT AND POULTRY TEST.

Authors

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