

Age Range: 11-14

Note: Can be adapted to older or younger audiences as needed.

Duration:

60-90 minutes

Note: May vary based on number of activities.

4-H Project Connection:

Family & Community Health - Food & Nutrition, Consumer Education

Agriculture & Livestock - Agronomy

Objectives:

- Members will identify and describe the three main parts of the wheat kernel and their nutritional benefits.
- Members will identify and describe the key nutrients found in wheat.
- Members will understand the significance of gluten in wheat-based products and the definitions of gluten-related disorders.
- Members will understand the difference between whole wheat, enriched, refined and fortified flour.

Suggested Materials:

- 'Wheat Nutrition' slide presentation (optional)
- 'Wheat Nutrients' handout and 'Mythbusters' worksheet (optional)
 - Instead of using the 'Mythbusters' activity as guided practice, adapt the worksheet into a group, movement-based activity. Label or identify one side of the room "true" and the other side "false." Call out one statement at time and instruct members to move to the side of the room they believe to be correct. As a follow up, ask members to defend their reasoning.
- 'Wheat Kernel Coloring-Labeling' worksheet (optional)
- 'Wheat Nutrition' fact sheet (optional visual aid or handout)
- 'Wheat Nutrition' postcards (optional)
- Various packaged wheat-based food items (nutrition labels can also be copied and printed)
 - Items can include but are not limited to: bread, pasta, crackers, tortillas, pretzels, cookies, etc.
- Ingredients for build-a-snack activity
 - Ingredients will vary based on snack(s) selected.

Program Outline:

Introduction (10-15 minutes)

Key Topics:

- Parts of the wheat kernel
 - Bran
 - Endosperm
 - Germ
- Macro and micronutrients found in wheat
 - Carbohydrates
 - Protein
 - Fat
 - Vitamins
 - Minerals
- Gluten & gluten processing disorders
- Types of flour
 - Whole wheat flour vs. refined flour
 - Enriched & fortified flour

Food Label Detective

Objective:

- Understand how to read nutrition labels.

Materials:

- Various packaged wheat-based food items (nutrition labels can also be scanned and printed)
 - Items can include but are not limited to: bread, pasta, crackers, tortillas, pretzels, cookies, etc.

Activity:

- Each member or group will read the nutrition labels and highlight the following nutrients: total carbohydrates, dietary fiber, protein and vitamins and minerals.
- Extension: Have members rank products in order of category (e.g. rank in order of total carbohydrates).

Wheat Nutrition Activity Overview

Activity: Wheat Kernel Coloring Page & Labeling

Objective:

- Identify the parts of the wheat kernel and their nutritional value.

Materials:

- 'Wheat Kernel Coloring-Labeling' worksheet (one copy per member)
- Writing utensils (i.e. pencils or pens)
- Coloring utensils (i.e. crayons, colored pencils, markers)

Activity:

- Give each member a copy of the coloring/labeling worksheet.
- Direct members to identify, label and color each part of the wheat kernel.
- As a group, discuss the different parts of the wheat kernel and nutrients included in each part.

Activity: Build-a-Snack

Objective:

- Allow members to apply nutritional knowledge to real-world food preparation.

Materials:

- Varies based on snack(s) selected to prepare.

Activity:

- Select snack(s) to prepare from the following page or another wheat-based snack.
- Prepare item(s).
- Ask members to identify the food group of each ingredient.
- Discuss importance of including multiple food groups in a snack to increase nutrient density.

Accommodation:

- Consider any known or potential allergies and adjust ingredients accordingly.

Wrap Up (5 minutes)

Key Topics:

- Each part of the wheat kernel has a distinct purpose and nutritional value.
- Wheat and wheat-based products include valuable nutrition and help promote healthy diets and lifestyles.
- Different flours are produced using different methods but are still safe and healthy.

Optional Extension:

- Members identify wheat-based products in their homes and investigate the nutritional makeup of those products.

Wheat Nutrition Activity Overview

Build-a-Snack Ideas

Snack Mix:

- Wheat Chex cereal
- Pretzels
- Dried fruit
- Nuts
- Mini chocolate chips

Cracker Creations:

- Crackers (eg. Wheat Thins)
- Cheese (eg. cheddar cheese)
- Lunch meat (eg. turkey or ham)

Tortilla Roll-Up:

- Tortillas
- Lunch meat (eg. turkey or ham)
- Cheese (sliced cheese)
- Vegetables (eg. lettuce, spinach, cucumbers, tomatoes)
- Hummus or cream cheese

Apple Nachos:

- Graham Crackers (traditional or flavored)
- Apple slices
- Peanut or almond butter
- Cinnamon

Bagel Bites:

- Mini bagels
- Cream cheese
- Peanut or almond butter
- Sliced fruit (eg. blueberries, strawberries, apples, bananas)

**Note: Wheat-based items can be white or whole wheat versions.*

Guided Discussion Questions:

The Wheat Kernel

- Question: *What are the three parts of the wheat kernel, and what does each one do?*
- Potential Answer: *The bran provides fiber and nutrients, the endosperm provides energy and protein and the germ helps the plant grow and contains vitamins and fats.*

Wheat Nutrition

- Question: *How does wheat provide energy for the body?*
- Potential Answer: *Wheat contains complex carbohydrates that break down slowly and provide long-lasting energy.*

Types of Flour

- Question: *What is the difference between whole wheat flour and refined flour?*
- Potential Answer: *Whole wheat flour is made from all three parts of the wheat kernel, while refined flour is made from only the endosperm.*

Fortification & Enrichment

- Question: *Why was flour fortification introduced in the U.S.?*
- Potential Answer: *Fortification was added to help prevent neural tube defects by increasing folic acid intake.*