

Grains: Refined or Not?

Learning Objectives

- I can explain what the difference is between a whole grain and a refined grain. I will explain the benefits of eating whole grains. (SOI 3.2c)

3.2c The student will demonstrate the ability to use essential health concepts to improve personal health.

Nutrition

- Explain the difference between a whole grain and a refined grain and the nutritional benefits of eating whole grains.

Teacher Notes

- Grains Group: Make Half Your Grains Whole Grains Choose whole grain foods such as whole wheat bread, oatmeal, whole wheat tortillas, brown rice, and popcorn more often.
- Grains are divided into two groups: whole grains and refined grains.
- Whole grains contain the entire grain kernel — the bran, germ, and endosperm. Examples of whole grains include whole wheat flour, bulgur (cracked wheat), oatmeal, whole cornmeal, brown rice, and quinoa.
- Refined grains have been milled which means the bran and germ have been removed. This gives grains a finer texture. It also improves shelf life. Unfortunately, it also removes dietary fiber, iron, and many B vitamins. White flour, white bread, and white rice are all examples of refined grain products.
- According to the 2015-2020 Dietary Guidelines for Americans (DGAs), at least half of the grains we eat each day should be whole grains. Whole grains are high in B vitamins, minerals, and dietary fiber. Substitute whole grain choices for refined grains whenever possible.
- Watch for food products labeled with words such as wheat flour, multigrain, stone-ground, 100% wheat, bran, and cracked wheat. Companies can be clever with words used on the front of packaging. Color is also not an indicator of whole grain content as additives can be used to make refined grains darker in color. If a whole grain such as whole wheat flour, whole cornmeal, oatmeal, or brown rice appears first in the list of ingredients, it often (although not always) indicates that the product is mostly a whole grain since ingredients are listed in order of weight. Another way to identify whole grains is by the 100% Whole Grain stamp from the Whole Grains Council, which indicates a product is a whole grain.
- On average, a child age 4-8 years old should be eating 4-6 ounce equivalents of grains each day.* Half of that amount should come from whole grains. Examples of amounts of food that count as one ounce equivalent of grains include 1/2 cup cooked grains (i.e., oatmeal, pasta, rice); 1 cup dry cereal; or 1 standard size slice of bread.
- **Materials needed for lesson:** Little Red Hen book, MyPlate Chart, Plate or Poster, Poster of whole grain with removable parts, “The Chicken Dance” music, Bread models (Whole wheat and refined)

Lesson Steps

Step 1 (Engage learners/access prior knowledge)

- Today we are going to learn about the Grains group. The Grains group is part of My Plate. (Show MyPlate chart, poster or plate.) Can you see where the Grains group is on MyPlate?
- We are going to read the book “The Little Red Hen” by Paul Galdone. (Show the book.) While we read the book, see if you can figure out what it has to do with the MyPlate Grains group.
- Read the book.

Step 2 (New information – direct instruction/teacher-facilitated learning)

- Hold up the MyPlate poster or plate again. Remember when we looked at MyPlate before we read the book? Which food group was the book about again? (Let children answer.) That’s right! The Grains group! MyPlate helps us to know how to eat in a healthy way. It reminds us that we should eat food from each of the food groups each day. Foods are divided into five different food groups: Grains, Vegetables, Fruits, Protein and Dairy.
- Did you know there are three different parts to a kernel of grain? A whole grain has three parts. Point to all three and say the names. If a grain is a whole grain it has all three. When a grain is refined some parts are removed. The bran is removed. Tear the bran off. The germ is also removed. Tear the germ off. So a kernel of whole grain is made up of three parts and a refined grain has only one part– something called an endosperm. Which do you think is more healthy? (Allow kids to guess.) It is better to have ALL of the parts. At least half of the grains we eat each day should be whole grain.
- In the book, the little red hen grew the grain, then had it milled and turned into flour. It was milled into white or refined flour. She then used it to make a cake. Cake is really yummy but isn’t as healthy as another kind of food the hen could have made from the wheat. Any guesses what kind of food I’m thinking about? Here’s a hint (show food replica of whole grain bread).
- Show the children the bread models. The darker brown slice of bread is a whole grain and just like the whole flower, it was made with all of the parts of the grain—the “whole grain.” Show the white bread model. When making this white bread the bran and germ are removed. Which of these two breads (show both) do you think are a healthier choice? (Allow children to guess.) That’s right the whole grain bread is better for us. Remember that half of our grains each day should be whole grains!

Step 3 (Application – how student will apply/practice new learning)

- You will need: “The Chicken Dance” music –Watch the video if you are not familiar with the dance movements.



- Show children the Chicken Dance Steps. Ask children: What kind of animal was the “Little Red Hen”? She was a chicken, and because she was a chicken, we are going to do the chicken dance!
- Have children stand up and face you. Start music. Demonstrate the steps so they can follow you. Here are the basic movements:
 - Begin with arms by sides.
 - Put your forearms up with your hands facing in front of you. Make a beak shape with fingers. Use a “quack-like” movement with fingers and thumbs.
 - Do the above movement four times to the beat of the music.
 - Flap arms like a chicken: elbows out, forearms facing inward.
 - Do the above movement four times to the beat of the music.
 - Clap hands four times.
 - Wiggle your tail feathers (shake your rear end) down to the floor for two counts and back up.
 - Repeat from beginning.

References

1. United States Department of Agriculture. (2017, November). Choosemyplate.gov. All about the grains group. Retrieved from <https://www.choosemyplate.gov/grains>
2. United States Department of Agriculture. (2015, June). Choosemyplate.gov. Grains: Nutrients and health benefits. Retrieved from <https://www.choosemyplate.gov/grains-nutrients-health>
3. Whole Grains Council. (n.d.). Identifying whole grain products. Retrieved from <https://wholegrainscouncil.org/wholegrains-101/identifying-whole-grain-products>
4. Lesson plan adopted from Utah State University. This material was funded by USDA’s Supplemental Nutrition Assistance Program -- SNAP. This institution is an equal opportunity provider. Utah State University is an affirmative action/equal opportunity institution.

Assessments

Ask children:

1. Do you remember how a whole grain is different from a refined grain? (Allow children to give answers, then show diagram again.)
2. Why are whole grains better for you? (Allow children to give answers and then talk about it again.)
3. What are some whole grains you like to eat? Help children come up with some whole grains they will try.

Extensions/Connections

- Create a snack with whole grains.



Sample Lesson Plan
Virginia 2020 SOL Edition
Health – GR3-NUTR-2
3rd Grade Grains
PWCS- Maria Trochan
(adapted lesson from Utah
State University)

Handout



Sample Lesson Plan
Virginia 2020 SOL Edition
Health – GR3-NUTR-2
3rd Grade Grains
PWCS- Maria Trochan
(adapted lesson from Utah
State University)