



Whole Grains Taste Great!

Lesson Description

In this lesson on whole grains, students discover the structural difference between whole and refined grains by sanding a grain with sand paper. They discuss the health benefits of eating whole grains and taste samples of different whole grain foods.

- Time required: 60 minutes
- Location of lesson: Classroom

Learning Objectives

- Describe the structural and nutritional differences between whole grains and refined grains.
- Explain why whole grains are more healthful than refined grains.

Attitude and Behavior Goals

- Like the taste of whole grain foods.
- Eat a variety of whole grain foods.

Materials and Preparation

- Sand paper - 2 small squares per student or group of students
- Brown rice or black wild rice (black wild rice works better) - 2 grains per student or group of students
- Whole grain and refined grain food sample pairs for comparison (see chart for ideas)
- Packages of whole grain food samples with ingredient lists and Nutrition Facts Labels
- Food containers or paper plates labeled A and B - 1 labeled A and 1 labeled B per each food sample pair
- Preparation for “Taste Testing Whole Grains” activity
 - Choose several different grain products sample pairs (see chart below for ideas).
 - For each pair of samples, label 1 container or paper plate with an A and one with a B. Place the whole grain sample on one plate and the refined grain sample on the other. Make an answer key chart for yourself.

Sample Pair	Whole Grain (Sample A or B)	Refined Grain (Sample A or B)
#1	Brown Rice	White Rice
#2	Whole wheat bread	White bread
#3	Popcorn	Cracker made with refined flour
#4	Corn tortilla	White flour tortilla

-  **Experimenting with Whole Grains**
-  **Taste Testing Whole Grains**

- Prepared vegetable snack of the week – 1 for each student
 - *This may be replaced by the Taste Testing Whole Grains activity
- Water to drink during the Class Warm-up – water dispenser in the classroom and 1 cup or a water bottle for each student

Class Warm-up: Champion Cheer and Veggie Taste Test (5-10 minutes)

- Give each student a cup of water or ensure that they have a filled water bottle in front of them.
- Lead the students in enthusiastically reciting the  **Champion Cheer**.
- At the end of the cheer, drink water together (*If you do not plan on doing the Taste Testing Whole Grains activity, eat the veggie snack and have students complete their  **Taste Test Observations**).

Review of Last Lesson (2-3 minutes)

- Review the evaluation questions from last week’s lesson. Evaluation questions from all lessons are listed at the end of the workbook .

Class Discussion (5-10 minutes)

What do you know about grains? Why are they important? A whole grain is a seed from a plant that we eat. They are often ground up to make flour or cereal. Some examples are wheat, rice, corn, barley. Whole grains give us lots of vitamins, minerals, fiber and energy.

Refer students to the workbook page,  **Experimenting with Whole Grains** and the diagram of a grain so they can follow along as you talk.

A whole grain has 3 parts- the bran, endosperm and germ. The bran is the outer layer that protects the seed and has vitamins and minerals. The endosperm is the middle layer that has carbohydrates and proteins. The germ is the core that has a lot of nutrients, vitamins and healthy fats.

Often, when grains are processed into flour and food, companies remove the outer bran and the inner germ leaving only the fluffy white middle part. These are called refined grains. This makes fluffy white bread and other things, but it removes most of the nutrients! The fiber, vitamins and minerals are removed. Fiber is especially good for us because it helps us to feel full after we eat. It’s healthier to eat whole grains rather than refined grains because whole grains have more nutrients.

Activities (40 minutes)

-  **“Experimenting with Whole Grains” (15 minutes)**: Students remove the bran of a grain with sandpaper to observe the difference between whole and refined grains.
 1. Refer students to the workbook page  **Experimenting with Whole Grains**.

2. Give each student (or group of students) 2 grains of brown rice/black wild rice (black wild rice works better).
 - a. Students sketch their rice grain in the workbook page before sanding.
 3. Give each student (or group of students) two pieces of sandpaper.
 - a. Place the rice grain between the pieces of sandpaper and rub.
 - b. Notice that the healthy bran is coming off of the rice as you rub.
 - c. Students sketch the rice grain after sanding.
 - d. Students complete the two questions on the workbook page and discuss the answers and observations as a class.
-  **“Tasting Whole Grains” (25 minutes):** Students taste different samples of grain foods and guess which samples are the whole grain foods.
 1. Prior to class, prepare pairs of food for taste testing, as instructed in the Materials and Preparation section above.
 2. Refer students to the workbook page  **Taste Testing Whole Grains.**
 3. Students taste the pairs of foods marked A and B and guess which sample is the whole grain food. They mark A or B on the Taste Testing Whole Grains workbook page to note which food they guess is the whole grain. They will also note observations about the foods.
 4. After tasting is complete, reveal which sample, A or B, was the correct whole grain product.
 5. *Which whole grain foods did you like? What are some ways we can eat more whole grains?* (Possible ideas: Choose whole wheat bread, eat oatmeal for breakfast, popcorn as a snack)
 6. Show the food packages that you brought to class and point out the Nutrition Facts Food Label and the ingredient list on each package. Tell students which words on the label determine that the product is made with whole grains.
 - a. If the first ingredient listed contains the word "whole" (such as "whole wheat flour" or "whole oats"), it is likely that the product is predominantly whole grain. If there are two grain ingredients and only the second ingredient listed is a whole grain, the product may contain as little as 1% or as much as 49% whole grain (in other words, it could contain a little bit of whole grain, or nearly half). The word 'wheat' alone does not mean the product is made with whole grains.

Evaluation Questions (5 minutes)

1. *What nutrients do whole grains give us?* (Answer: vitamins, minerals, fiber, energy)

2. *What kinds of grains should we eat the most of- whole or refined?* (Answer: whole grains)
3. *What is the difference between whole grains and refined grains? Hint: whole grains have some parts that refined grains don't, what are they?* (Answer: refined grains have been stripped of their outer layer [bran] and the inner layer [germ] and are no longer whole. They have less nutrients than whole grains.)
4. *How do we figure out if we are eating a food that is made with whole grains?* (Answer: look at the ingredients list on the food package and the Nutrition Facts Food Label)
5. *What are 3 examples of whole grain foods?* (Answer: whole wheat bread, brown rice, corn, bulgar, popcorn, barley, oatmeal)
6. *How much water should you drink every day?* (Answer: at least 6 cups of water a day)
7. *How many fruits and vegetables should you eat every day?* (Answer: at least 5 fruits and vegetables a day)
8. *Does gardening connect you to your culture and help you learn new words in your language?* (Answer: yes)

Preparation for Future Lessons – Reminder for the Instructor

- Review the materials and preparation needed for the next lesson.
- Remember that an Elder guest instructor is needed for these Spring lessons: lesson 1 (Eating a Rainbow), lesson 4 (Conserving Water: A Renewable Resource), and lesson 9 (Plant Parts: Flowers and Pollination).

Notes
