

④ December Lesson: Wholesome Whole Grains

Goals:

- Students will be able to identify the three components of a whole grain
- Students will know the benefits of consuming a diet rich in whole grains
- Students will brainstorm ways to incorporate more whole grains in their diets

Audience: 4th

Optional Craft, Activity or Snack:

- Air popped popcorn

Materials:

- Whole Grain Visual
- Popcorn seed and popped pop corn (optional)
- Several sets of Parts of Grain Samples, labeled. Include the following: whole wheat (such as spelt), wheat bran, wheat germ, whole wheat flour, white flour
- Several sets of Whole Grain Samples including brown rice, white rice and any others such as whole wheat couscous, bulgur, buckwheat, brown rice, barley

Common Core Standards Taught:

- English Language Arts: Speaking and Listening: 4.1
 - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.
 - Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.

Lesson:

(Before starting lesson, distribute Parts of Grain Samples. Tell students not to focus on the samples until they are needed in the lesson.) There is a lot of confusion about whole grains. Can anyone tell me what whole grains are?

Whole grain foods contain all 3 parts of the grain.

(Show Slide #1) A grain consists of 3 parts:

1. The endosperm- this is the starchy part of the grain. It contains a few vitamins, minerals and some protein.
2. The bran- this is the outer protective shell of the grain; it is rich in B vitamins and fiber.
3. The germ- this is where the seed is stored for a new plant. The germ contains B vitamins, protein, minerals and healthy oils.

A food that is 100% whole grain contains all three parts: the bran, the germ and the endosperm.

(Review Parts of Grain Samples, starting with the whole grain. Explain the contents of each bag in relation to the parts of the grain visual. Collect samples.)

To get white flour, the wheat is milled or processed. This removes the germ and bran. When you eat bread, crackers or pasta made with white flour, the only part of the grain you get is the endosperm. The germ and bran are gone. *(Point to Slide #1 again)*

If we eat mostly processed grains, we miss out on the nutrients found in the germ and the bran. Processed grains give you energy and some vitamins (which are added back in) but don't give you the fiber or healthy fats.

(Slide #2) The removal of the bran reduces the amount of B vitamins and fiber in the product. B vitamins are important in keeping your heart healthy. Fiber helps you feel full, regulates blood sugar, and helps maintain a healthy digestive tract.

(Slide #3) The germ portion of the grain is also removed during the refining process. The germ contains healthy fats, minerals, and protein. Healthy fats are important because they help our bodies absorb vitamins and minerals. They also keep our skin, hair, and nails healthy. Protein is important because it helps build strong muscles, bones, and tissues.

By consuming only processed grains we miss out on: vitamins, minerals, fiber, healthy fat and protein.

If whole grains are so good for us, why don't we eat more of them?

People are used to eating processed grains. Whole grains have a slightly different taste, and they take some people a little time to get used to. Also, whole grains can be a bit more expensive than enriched grains. The cost difference is worth it because they contain more fiber so people feel full sooner and don't eat as much of them.

What are examples of whole grains?

Distribute the grain samples to students. First show the brown rice and white rice one so they can see how the outside/color is different. Say aloud a name of each grain and have the student find that one. *(Slide #4)*

100% whole wheat bread

Brown rice

Oatmeal

Quinoa

Whole wheat pasta

Spelt

Whatever ones are decided for the examples

Did you know that popcorn is a whole grain *(Slide #5)*? The outside of the seed is the bran. It is a dark yellow/orange color. When we pop popcorn, what does it look like? It is white and fluffy *(Slide #6)*. This is the endosperm.

When we eat popcorn, we're eating a whole grain because all three parts are still intact: the bran, the germ (we just can't see it), and the endosperm.

But it's important to remember how popcorn is commonly prepared, with lots of butter and salt (think of the big movie theater bucket). To get the most benefits pop your own popcorn at home or get low-fat microwaveable bags from the grocery store.

Raise your hand if you can think of ways to eat more whole grains.

- Choose 100% whole wheat sandwich bread (multi-grain is also a better choice than white bread).
- Eat oatmeal for breakfast or another whole grain cereal
- Choose brown rice instead of white rice

Remember that whole grains contain all 3 parts of the grain. Can you name all three (Slide#7)?

-Bran, germ, and endosperm

During the food refining process, which two parts of the grain are often missing?
The bran and the germ.

By removing the bran and the germ, our bodies miss out on: vitamins, minerals, fiber, protein, and healthy fats. Therefore, we should aim to make at least half of the grains we eat, whole grains.

(Optional): Pass out popcorn seeds for students to see and provide air popped popcorn as a snack.

Tips/Background Information

There is whole wheat white flour. Sarah Lee has a 100% white whole wheat bread. The bran and germ of this wheat are light in color and the flavor is mild. When this wheat is converted into whole wheat flour, the flour is white. This type of flour is becoming more widely available in the United States. It's much more common in Australia. However, emphasize to students that the majority of white flour and white bread in the United States is processed to remove the bran and germ. They should assume white bread is made from only the endosperm.