

Lesson: Wholesome Whole Grains

Supplies Needed:

- 4.1_LV_Whole-Grain-Visual
- Popcorn seed and popped corn (optional)

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.

Background:

There is whole-wheat white flour. Sarah Lee makes 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.

Lesson:

(Start with two or three exercises suggested by the students.)

Who remembers why we eat?
(Fuel/energy for our bodies)

How do we know when to refuel our bodies?
(We feel hungry.)

Yes! Our bodies communicate with us by making us feel hungry when we need food or thirsty when we need water. What do you feel when you feel hungry? *(Emptiness in your stomach, gurgling sounds, weak, tired)*

What do you feel when you are thirsty?
(Dry throat, tired).

It is important to recognize these feelings in order to feed your body what it needs to stay healthy and working at its best. If you cannot decide if you are hungry or thirsty, what do you think you should do?

(First, drink some water and then wait a few minutes. If you are still hungry, fix a great tasting Go Food snack.)

What are some of your favorite Go Foods to eat when you are hungry?
(Fruits, vegetables, lean meats, grains, low fat dairy).

Today we are going to talk more about the grain food group, which gives you energy and helps you stay full.

There is a lot of confusion about whole grains. Can anyone tell me what whole grains are?

Whole grain foods contain all three 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.

Show Slide 2

In the center of the picture is a whole grain. This is what it looks like right after it is harvested from the plant. At the top of the picture is whole wheat flour. This flour is made by taking the whole grain and grinding it up. It still contains the bran, germ and the endosperm. Often the whole grain is processed and separated into the three different parts of the grain. Wheat germ, white flour, which is the endosperm and wheat bran.

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.

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.

(Show slide 3) 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.

(Show slide 4) 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? **(Show slide 5)**

- 100% whole wheat bread
- Brown rice
- Oatmeal
- Quinoa
- Whole wheat pasta
- Spelt

Did you know that popcorn is a whole grain **(Show slide 6)**? 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 **(Show slide 7)**. 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 that we can't see, 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.)*
- *(Choose whole grain pasta instead of white pasta.)*

Remember that whole grains contain all three parts of the grain. Can you name all three **(Show slide 8)**?

(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 activity):

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