

## **Lesson: Identifying Whole Grains**

### **Supplies Needed:**

- 4.2\_LV\_Identifying-Whole-Grains-Visual
- Packages of Whole and Enriched Grains (optional)

### **Goals:**

- Students will be able to identify foods containing whole grains.
- Students will be able to distinguish between whole grains and enriched grains.
- Students will learn to read ingredient lists to identify whole grain products.

### **Background:**

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.

### **Lesson:**

Let's start today by getting our blood pumping with 30 jumping jacks. **(Do jumping jacks.)** Good! Now take your seats.

Who can tell me what we should drink after running around or exercising? (*Water*)

Yes! Water is just what your body needs to rehydrate after exercise.

Suppose you have just eaten a big meal and feel really full, would you feel like running around and playing?

(*No*)

When we over fuel our bodies we might feel tired and sleepy. When you eat meals or have snacks remember to eat enough so you are not hungry but not to eat too much so you are too full. Does anyone have any ideas of how to do this? (*Build meals using MyPlate, eat slowly, eat Go Foods, take small portions*)

You want just the right amount of energy to be active and feel your best!

Last month we talked about whole grains. Does anyone remember the three parts of a whole grain? What are whole grains? **(Show slide 1.)**

Whole grains contain all three parts of the grain:

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.

What are examples of foods that contain whole grains?

*(Whole wheat bread, oatmeal, popcorn, brown rice, whole wheat pasta)*

Foods such as crackers, white breads, pastas and some cereals are refined during the manufacturing process so the only part of the grain that remains is the endosperm. **(Show slide 1.)**

During the food manufacturing process, grains are put into a big machine, like a big blender. The machine separates the grain so that the only part left is the endosperm.

Companies will add back some of the vitamins and minerals that were lost during the separation process, but they usually do not add back the fiber or the healthy fats. These types of grains are called enriched grains.

It can be difficult to understand enriched grains. Can one of you explain how they are made?

*(A machine separates the parts of the grain and saves only the endosperm. Then, some vitamins and minerals are added to the endosperm.)*

Why do companies enrich grains?

*(To prevent a disease)* When the bran and germ are taken away, grains lose most of their vitamin B. Vitamin B plays an important role in heart health and growth and development. A long time ago, in 1900, people were starting to get very sick with a disease called pellagra. Pellagra was caused by a vitamin B deficiency **(Show slide 2.)** Symptoms of pellagra include: black tongue, swollen limbs, dementia/ confusion, and if left untreated, death.

To prevent pellagra, companies now enrich their grains with vitamins. Almost all processed grains purchased in the U.S. are enriched with vitamin B. Consequently, pellagra is very rare.

If processed grains are enriched with vitamin B, why do we need to eat whole grains?

*(Enriched grains are missing fiber, healthy fats, and minerals.)*

Here are two pieces of bread (**Show slide 3.**) One is enriched. The other is made from whole grains. Can you tell which one is the whole grain? (*The one on the right.*)

Whole grains tend to be darker in color, browner, because they contain the germ and the bran. Enriched products tend to be lighter in weight and in color because they only contain the endosperm, which is very starchy.

It is important to note that just because a product looks brown, doesn't mean it is contains whole grains. Sometimes food coloring or other ingredients turn the product brown. To determine if a food is a whole grain, we need to do some detective work.

Here are some clues to determine if a product contains whole grains:

Clue #1- (**Show slide 4.**) read the ingredient list. Look for words such as 100% whole wheat, or grains such as: barley, brown rice, bulgur, corn, millet, oatmeal, quinoa, wheat berries, and spelt.

Clue #2- (**Show slide 5.**) look out for the word enriched or refined. Remember, an enriched food is one where the germ and bran were removed, and then vitamins were added back to the food product.

The ingredient list ranks ingredients in order from majority to minority. Therefore, focus on the first few ingredients listed on the label.

Are you ready to practice some whole grain detective work?

Bread #1: (**Show slide 6.**) Is this made from whole grains or enriched grains?

*(Whole grains)*

Bread #2: (**Show slide 7.**) Is this made from whole grains or enriched grains?

*(Enriched grains)*

***(Optional: distribute some packages of grain based foods like bread, cereal, crackers, etc. and have the students work as teams to see which products contain whole grains and which contain enriched grains. This would replace the remaining slides.)***

Cereal #1: (**Show slide 8.**) Is this made from whole grains or enriched grains?

*(Enriched grains)*

Cereal #2: (**Show slide 9.**) Is this made from whole grains or enriched grains?

*(Whole grains)*

Crackers #1: (**Show slide 10.**) Is this made from whole grains or enriched grains?

*(Enriched grains)*

Crackers #2: **(Show slide 11.)** Is this made from whole grains or enriched grains?  
*(Whole Grains)*

Now that we know what to look for when picking whole grain products, let's talk about how many whole grains we need to eat each day! MyPlate recommends that half of the grains we eat should be whole grains.

**(Show slide 12.)** Here are some examples of whole grains. Can we think of ways to incorporate more whole grains into our diets?

*(For Breakfast: Eat a bowl of oatmeal or whole grain cereal.)*

*(For Lunch: Choose whole wheat bread or whole wheat pita.)*

*(For dinner: Try a new grain such as quinoa, millet, or brown rice.)*

Whole grains are an excellent source of energy for our bodies. Whole grains contain essential vitamins and minerals, healthy fats, and fiber that help keep our bodies healthy.