Grains

2nd Grade Lesson

Goal: Students will learn what foods are in the grains group and will recognize the healthier choices in the grains group.

Objectives:

1. Students will state that the grains group foods give our bodies energy.
2. Students will differentiate between healthier whole grains and less healthy refined grain food choices.
3. Students will name at least two whole grain foods.

Materials Needed

- ☐ MyPlate
- ☐ Stalk of wheat
- ☐ Pictures of grains group foods
- ☐ "Grains are Seeds" poster
- ☐ "Grain Anatomy" poster
- ☐ Wheat berries, plain and/or sprouted
- ☐ "Making Bread" pictures
- ☐ Grinder, sifter, bowl and wheat berries if grinding; white flour & whole wheat flour if doing flour demo
- ☐ Battery toy or flashlight
- ☐ Student/parent handouts
- ☐ Taste test
- ☐ Incentives

Lesson

Talking Points	Materials/Activities/Notes

Review

• Who remembers what we talked about last time I was here? • I gave you a challenge last time I was here. Does anyone remember what it was? Does anyone want to share how they did with the challenge?	Give students a brief chance to respond to questions. Review topics briefly.

Mind Grabber

• During our first nutrition lesson, we talked about MyPlate. Today we'll talk about one of the food groups on MyPlate. Let's see if you can guess which one we are going to talk about. ○ Ask students where the flashlight gets the energy to light up. *(batteries)* ○ Ask students where plants/flowers get energy. *(the sun)* ○ Tell students to do 10 jumping jacks. ○ Then ask where they got the energy to do that. *(food)* ○ Ask if anyone remembers which food group gives us the best energy to fuel our activities. *(grains group)* ○ Who can guess what group we're talking about? *(grains)*	Show students MyPlate. Show a flashlight and turn it on and off. Point out where the Grains group is located on MyPlate.

Discussion

Foods In the Grains Group

- Let's start by talking about all the foods found in the grains group. Raise your hand if you can name a food found in the grains group.
- Do you remember our MyPlate friend Jane Grain?
- What color are the foods in the grains group? They are mostly brown, white, tan, etc… And foods in the grains group are made from different grains.
- Where do grains come from? *(plants)*
- Take a look at this poster I brought in with me and see how many different grains there are that we can eat. There are even more grains than this that we can eat, but these are some of the most common. What do these grains look like?
    - Seeds! All grains are seeds. We make different food from these grains, such as bread, cereal, and noodles. Some of them we can also eat on their own, like rice and oats.
- Many foods are made from grains and, as you saw in the poster, most of the grains look a lot alike. We are going to talk mainly about wheat today, but remember that there are many different grains to choose from!

Show pictures of foods from the grains group.

Show the "Grains are Seeds" poster with examples of real grains. Go over the poster and discuss the foods we get from each one of the seeds on the poster – may also reinforce with picture or food models.

Parts of the Grain Seed

- Wheat is one kind of grain that we make a lot of foods from, including bread, cereal, and pasta.
- This is a wheat stalk. This is how wheat grows. I'm going to walk around with the wheat stalk and I need you to be very quiet so that you can hear it when I tap it. What do you think is on the inside, making that noise? Seeds, wheat seeds! Each wheat stalk has 30-50 seeds on the inside!
- What do we do with seeds? That's right, we plant them and then they grow. That tells us that there is a baby plant inside each seed. The baby plant is called the germ (not like the germs that are on your hands!). What are two things that babies need to live? Food and something to protect them – these are the other two parts of the seed! So the three parts of the seed are:
    - **Germ**: The baby plant is called the germ. That sounds kind of funny doesn't it?!? It's not like the germs you find on your hands, it's a baby plant found in a seed!
    - **Bran**: The bran is what you see on the outside and is the coat that protects the babies.
    - **Endosperm**: Inside the coat is the food for the baby plant, called the endosperm. The food is white.
- Let's take a look at some real seeds. I have one wheat seed for each of you to examine
    - What you see on the outside (the brown part) is the coat that protects the babies. It is called the **bran**. You might

Walk around with the wheat stalk and tap it for the students to hear.

Show Grain Anatomy poster.

Distribute sprouted wheat berries to each student to further illustrate the parts of the seed. (**Instructions for sprouting are at end of lesson).

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have heard this word if you eat things like raisin bran cereal or bran muffins. Each of these foods had bran as one of its ingredients.
    - You can also see the baby plant beginning to sprout out of the seed. This is called the **germ**.
    - Break open your seed and see what you find on the inside. The white part, also called the **endosperm**, is the food for the baby plant, which looks a bit like milk now that it is wet—just like the food for baby people.
- All grains seeds have these three parts: The bran, the germ, and the endosperm.
- When we eat grains do we usually eat them as seeds?
    - Sometimes yes and sometimes no. We often eat oats, rice and barley as seeds. We just need to cook them and then eat them!
    - Other times, we grind the grain seeds up to make flour, and then we use flour to make other foods. Bread, pancakes and crackers are made from wheat flour (ground up wheat seeds); cornbread and corn tortillas are made from corn flour (ground up corn seeds).
- We use wheat seeds to make all sorts of foods from the grains group. Let's learn how to make bread from these tiny seeds.

Making Bread

- Does anyone know how we make bread from wheat seeds?
    - First we have a picture of the wheat stalks growing in a field. Notice that they are green.
    - After a while, they turn brown or golden. This means that they are ready to be harvested.
    - Farmers use a big machine called a combine to cut down the wheat and take out all the seeds.
    - The machine pulls out the wheat seeds so that we can use them.
    - Then the wheat seeds are taken to a mill. Milling allows the grain to be used to make lots of different foods.
    - At the mill, the grain seeds are first sorted and cleaned to remove dust, straw, stones and other things that we do not want to eat.
    - Then the wheat seeds are ground up in steel rollers to break them into tiny pieces. Then, they're sifted to separate the three parts of the seed (the bran, germ and endosperm). The seeds keep getting ground and sifted until it becomes a very smooth flour.
    - At the mill, different types of flour can be made depending on which parts of the seed are left in or sifted out.
        - Whole wheat flour has all parts of the grain seed

Use "Making Bread" pictures to illustrate how bread is made from wheat berries.

AND/OR

Use the grinder to grind wheat berries into flour and sift. Put a handful of wheat berries in the grinder and grind. When finished show the students what the "flour" looks like. Tell them that this is whole wheat flour because it used ALL three parts of the seed – the WHOLE seed. Whole wheat flour results from grinding the seed and using all of it. Whole wheat flour is used for making whole wheat bread. Sift the flour into a bowl. The flour that comes through is white. This is white flour (or at least it is closer to white flour than what we started with; if we had a better sifter, we could sift out all of the bran and germ to make white flour). Show to students and compare it to the color of the flour left in the sifter. The flour in the bowl should be whiter than what is left in the sifter. The white flour is the small part that falls through the sifter. This is the food inside the seed (or the endosperm). This is what we use to make white bread. The white flour is made up of only the endosperm and none of the bran or the germ. Remind students that using the bran and the germ together with the endosperm will give more nutrients.

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(the bran, germ and endosperm). It is called <u>whole</u> wheat flour because it uses the <u>whole</u> seed.
        - White flour has just the inside white part of the seed (the endosperm). The bran and germ have been removed.
    - Then, the flour can be used to make bread (or other grains foods).
    - We mix flour with other ingredients such as water, yeast and salt to make dough.
    - Then we put it in a pan, bake it in the oven, and we get a loaf of bread! There are many different types of bread we can make.
- Here, we have a picture of white bread and whole wheat bread. The white bread is made from the white flour, and the whole wheat bread is made from whole wheat flour.
- Can anybody tell me the difference between white bread and whole wheat bread?
    - *White bread is made from only the endosperm or food for the baby plant.*
    - *Whole wheat bread is made from all 3 parts—the endosperm, the germ, and the bran.*
- Grains that have had the bran and germ removed are called **refined grains**. Grains that have all three parts are called **whole grains**. White bread is a refined grain while whole wheat bread is a whole grain.
- Now, which one do you think is healthier: **refined grains** like white bread or **whole grains** like whole wheat bread?
    - Whole grain foods are healthier for us because they are made from the whole seed, so we get all the goodness of all three parts of the seed. Remember how we talked about how the bran and the germ are packed with nutrients – like B vitamins and fiber – and the endosperm has nutrients, but not as many as when you put it together with the bran and the germ?
    - White bread is okay for our bodies, but does not have as many good things so it doesn't have as much nutrition as whole wheat bread.
    - To help you remember this, think about this example: Suppose I come and offer you something you really like (maybe ripe, juicy strawberries, for example). In one hand I have three strawberries, and in the other hand I have one. Which hand would you choose? *(The one with three because it gives you more of the good thing you like. It's the same with grains: refined grains like white bread that give you only one part of the seed are good for you, but whole grains like whole wheat bread give you the goodness of all*

AND/OR

Show white flour and whole wheat flour models.

AND/OR

Show video
Wheat into Flour:
https://www.youtube.com/watch?v=3wyhzKX97Vk
Or
Baked Bread: How is Flour Made:
https://www.youtube.com/watch?v=y8vLjPctrcU

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three parts of the seed, definitely a better choice.)

- All grains can be either refined grains or whole grains.
    - Examples of refined grains include white bread, white rice, flour tortillas, regular (white) pasta.
    - Examples of whole grains include whole wheat bread, brown rice, whole grain cereals, whole grain corn or whole wheat tortillas, whole wheat pasta, oatmeal and popcorn.

Optional Video:
White Bread vs. Whole Wheat
https://www.youtube.com/watch?v=418KSrmpMwc

Identifying Whole Grains

We know that whole grains are healthier, but when you are in the grocery store shopping for grain foods like bread or cereal, how can you tell if a food is a whole grain or a refined grain?

- It's pretty easy. Look at the ingredient list on the package. If the first ingredient has the word "whole" in it (whole wheat, whole grain corn, whole grain oats, etc), that gives you a big clue that the food has a lot of whole grain in it.
- If the label just says wheat or corn or oats, or enriched wheat that is a clue that the food is mostly refined grain.

Show ingredient lists for both whole and refined grain products.

Have students practice identifying whole grains by reading ingredients lists:
Distribute empty packages of grains foods – have a few students share with the class or have them sort into piles (whole grain vs. refined grain). Could be done as a relay race if space permits.

Importance of Eating Grains

- Let's take a look are MyPlate again. How much of your plate should be foods from the grain group? That's right! One fourth of your plate should be grains. That's a lot!
- Why are the foods in the grains group so important for us to eat? Energy! The foods in the grains group help our bodies stay healthy by giving our bodies energy. That's because foods in the grain group contain a nutrient called carbohydrates. Your body uses carbohydrates for "get up and go" energy to run, jump, and play. You're going to learn more about nutrients, including carbohydrates, in 4th Grade.
- What things do you do that use energy? What are some ways you use energy when you play? What are some of the ways you use energy in school? What are some of the ways you use energy at home? Do you think you would be able to do any of these things if you didn't have any energy?
- Foods in the grains group are also good for our bodies because they are good sources of fiber, especially the whole grains. Fiber keeps our bellies and hearts working well.
- That's why it is so important for us to eat foods from the grains group.
- No matter what grain you choose, it will give you energy that your body needs to keep going each day!

Have students do a few activities: jump in place, run in place, do arm circles, or dance.

Use a flashlight or battery powered toy to demonstrate how batteries give the flashlight energy (just like grains give our bodies energy) and if the flashlight does not have batteries it can't do what it is supposed to.

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Wrap-Up

- Today we learned all about the grains group and why grains are so important for our bodies.
- What is the difference between whole grains and refined grains?
- Which is healthier for you: whole or refined grains?
- Who can name a whole grain food?
- Who can tell me why the foods in the grains group are so important for us to eat?

Challenge

- Now that you know about the grains group, I challenge you to eat at least two whole grain foods from this group before I come back. Next time I come for nutrition class, I'll ask you what grain foods you ate.

Taste Test Ideas

- Whole grain sampler-- a mix of some or all of the following: whole grain cereals, popcorn, wheat thins, mini brown rice cakes, other whole grains you may find at the store
- Whole grain bagels or mini bagels with cream cheese
- Brown rice cakes and sun butter
- Raisin bran muffins
- Popcorn

Additional Activities/ Energizers

1. Popcorn Popping Rhyme: Read poem and have students act out poem as you are reading it.

   Popcorn, popcorn a crunchy snack
   Put it in a bowl or eat it from a sack
   It's a whole grain food I like a lot
   Let's put it in the popper and make it hot
   (students stand and recite the poem with the teacher)

   Sizzle, sizzle, sizzle, popcorn walk! *(students walk)*
   Sizzle, sizzle, sizzle, popcorn hop! *(students hop)*
   Sizzle, sizzle, sizzle, popcorn skip! *(students skip)*
   Sizzle, sizzle, sizzle, popcorn march! *(students march)*

   Now the popcorn is getting hot!
   All the kernels get down and squat! *(students squat)*
   Sizzle, sizzle, sizzle, sizzle, sizzle, sizzle…*(add as many sizzles as you want so students will be surprised when you say "pop")*
   POP!!!!! *(students jump up)*
   Adapted from the Go with the Whole Grain Kids
   Bell Institute of Health and Nutrition

2. Grain Group Foods: Have students act out foods from the grain group:
   - Pop up like bread in a toaster
   - Go limp like a noodle

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- Break like a cracker
- Pop like popcorn
- Get flat as a pancake
- Roll up like a tortilla

3. White vs. Whole wheat: Using a food scale, weigh the difference between white and whole wheat bread. Why is one loaf of bread so much heavier than the other? Which bread do you think has the most nutrients and fiber?

4. Whole Grain Game: Hold up pictures of whole grain and refined grain foods and ask the students to identify which are whole grains and which are refined grains. Pictures are included in the Whole Grain Game in the materials section of this lesson.

5. Whole Grains Sorting Relay: Divide students into teams and have them line up on one side of the classroom or along one side of the carpet with their team. Set up baskets labeled "Whole Grains" and "Refined Grains" at the opposite end of the carpet. Place a pile of grains group food labels in front of each group. Have one person from each team pick up a label, read it to determine if it is a whole grain or refined grain, then hop (or do some other movement) to get across the carpet to place the label in the correct bin. Then, the student hops back across the carpet, tags the next member on their team, who then picks up another label and continues the game until all the food labels are sorted.

Student Handouts

- Parts of a Grain Seed
- Searching for Whole Grain Bread
- Use Your Brain to Find the Grains word search
- Grains for Brains word scramble
- Grain Group Crossword Puzzle
- Find the Whole Grain Cereals

Parent Handouts

- Today in Nutrition Class…Grains (English & Spanish)
- 10 Tips: Make Half Your Grains Whole (English & Spanish)
- Grains Handout (English & Spanish)

Lesson Roadmap

- Review previous lesson and challenge
- Mind Grabber: energy discussion or Popcorn rhyme
- Discussion:
    - Foods in the grains group

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  - Grains are seeds
  - Wheat stalk and seed anatomy
  - Making bread
  - Difference between whole and refined grains
  - Identifying whole grains
  - Importance of grains
- Wrap-up
- Challenge
- Student workbook or worksheets
- Tasting/Cooking

***To sprout wheat berries, place a handful of wheat berries on a wet paper towel in a plastic container, uncovered. Keep at room temp and dampen as needed until sprouted (a few days) OR soak berries in water overnight, then drain and put into a strainer and rinse 1-2x a day until sprouted – less likely to encourage mold growth; store in fridge.*

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