



## Lesson # 5

### Full of Fiber

#### Time Table

**Total Time: 30 minutes**

- 2** Minutes: Introduction to lesson
- 15** Minutes: *Full of Fiber* PowerPoint Presentation
- 5** Minutes: Sponge demonstration
- 5** Minutes: Activity: *Fiber Filled Grains!*
- 3** Minutes: Explain the Take Home- *Fiber for Parents*

**Goal:** Introduce children to the importance of fiber-rich foods in their daily lives to maintain a balanced and healthy diet.

#### Objectives:

Students will:

1. Learn the important role fiber plays in the diet.
2. Learn the difference between insoluble and soluble fibers.
3. Understand that the MyPlate guidelines must be followed in order to consume the adequate amount of fiber per day.
4. Be able to provide sources of high fiber foods.

#### Materials:

- PowerPoint: *Full of Fiber* PowerPoint Presentation
- Demonstration:
  - a. Medium sponge piece
  - b. Bowl or cup
  - c. Water
- Activity: *Fiber Filled Grains!*
  - a. Pencils or crayons
  - b. Instructor's answer key
- Take Home: *Fiber for Parents*

#### Instructions:

1. Begin the lesson with a quick review of the previous lesson on carbohydrates and ask the students to give some examples of complex carbs and grains.
2. Tell students that today's lesson focuses on how to eat fiber rich foods and being able to determine which foods are high in fiber.
3. Ask the students if they know what fiber is or if they have ever heard of it.
  - Explain that **fiber** is found in many types of foods such as fruits, vegetables, grains, beans and oats. Fiber is a special type of carbohydrate that passes through the digestive system (stomach and intestines) almost unchanged and unbroken. Fiber swells up in the body, absorbs water and passes through the body unbroken.
  - **Dietary Fiber**- a naturally occurring non-digestible carbohydrate found in plants and "woody" plant cell walls.

### **Demonstration:**

This demonstration will illustrate the fiber phenomenon. Gather a sponge piece and a bowl or cup of water. Explain that the sponge is similar to fiber. When fiber enters the mouth and goes into the stomach it becomes bigger because it absorbs water as it passes. Put the sponge into a bowl or glass of water and show how it expands and becomes bigger. As the fiber gets bigger and jelly-like, it helps push other small food particles that you eat through the body. These pieces of food will pass through the body and come out in your bowel/stool.

### **Why do we need Fiber?**

- It makes you feel full.
- It fights against certain cancers, heart disease and other illnesses.
- It prevents constipation and helps decrease diarrhea.
- It increases bulk of your bowel/stool.
- It slows down the rate of food going through the body.
- It increases the water amount in your bowel/stool

### **How much Fiber do I need?**

The recommended dietary fiber intake is 14 grams per 1,000 calories consumed. So if you consume 2,000 calories in a day, the fiber recommendation is 28 grams per day. This recommendation is set by the 2010 Dietary Guidelines for Americans. How many people actually understood what I just said? Does anyone know how to consume 14 grams of fiber or actually know if they ate 1,000 calories in a day or not? The average American child doesn't really care about calorie counting or reading their food labels so to make this easier to understand, use the MyPlate diagram set by USDA. Try to make half your plate fruits and vegetables and make at least half your grains whole grains. Vegetables, fruits, and whole grains are rich in fiber and eating these foods in your meals are essential to achieving the amount of fiber needed by your body. It is quite simple, just follow the MyPlate diagram for all your meals and you will reach your goal of a healthy diet.

Explain that there are two types of fiber: insoluble and soluble. Each type of fiber has specific functions that they perform in the body and you can get both of these fibers from food. Some rich sources of fiber are listed below. You may write these on the blackboard or just state them.

<b>Insoluble Fiber</b>	<b>Soluble Fiber</b>
<p>- Insoluble fiber moves faster through the digestive tract.</p> <p>- Insoluble fiber helps move the large contents through your intestines</p> <p><b>Functions:</b></p> <ul style="list-style-type: none"> <li>❖ Increases bulk of bowel/stool</li> <li>❖ Prevent constipation</li> </ul>	<p>- Soluble fiber combines with the liquid and fat in your body to create a gel-like substance.</p> <p>- It helps the stomach empty slower; slowing down the rate that sugar is released into your body.</p> <p><b>Functions:</b></p> <ul style="list-style-type: none"> <li>❖ Forms a gel-like substance in the intestines (point to your lower stomach so they know where the intestines are).</li> <li>❖ Slows down the rate of food going through the body.</li> <li>❖ Increases the water amount in your stool</li> </ul>

<b>Sources:</b> <ul style="list-style-type: none"> <li>❖ Wheat bran</li> <li>❖ Oat bran</li> <li>❖ Whole cereal grains</li> <li>❖ Vegetables</li> <li>❖ Leafy Vegetables (like Spinach)</li> </ul>	<b>Sources:</b> <ul style="list-style-type: none"> <li>❖ Citrus fruit</li> <li>❖ Apples</li> <li>❖ Beans and Peas</li> <li>❖ Oats (oatmeal)</li> <li>❖ Seeds and Nuts</li> </ul>
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### The difference between refined grains and whole grain products

- **Refined grain products** are usually white or light in color. They are mostly made of simple carbohydrates and will not make you feel full for a long time.
- **Whole grain products** are usually brown or darker in color. They are mostly made up of complex carbohydrates and keep you feeling full for a long time. They also have other nutrients in them such as fiber, vitamins and minerals.

Something to be cautious about when adding more fiber to your diet is that newcomers might experience diarrhea, bloating, and gas initially. To avoid these side effects, add sources of dietary fiber slowly into your diet.

### **Student's Goal:**

Eat more fiber rich foods this week! Try going shopping with your parents and help them pick whole grains, fruits, and vegetables that are rich in fiber.

### **Activity:** *Fiber Filled Grains!*

- Read the background section of the worksheet to the students. Explain the instructions on the worksheet and let them complete the activity.
- Have students label the three parts of a whole grain kernel. Color the three parts of the grain in its appropriate colors. Students may use the word bank and the description provided to help them complete the activity. Student will also have to answer two questions at the end of the activity.
- After the students have completed the activity, share the answers with them. The instructor's answer key is provided on the website.
- Collect the student's activity sheets and put them into each student's personal *Fit4kidz* binders or folders.

### **Take Home:** *Fiber for Parents*

- Print *Fiber for Parents* handout for each student to take to their parents. This activity will be sent home with the students for the parents to read.