

# Moving on With Fiber

WIN Kids Curriculum for 5<sup>th</sup> and 6<sup>th</sup> grade

Designed for classrooms, community youth groups, and other educational settings



## Lesson Objectives

- Understand the health benefits of fiber.
- Know how to identify high-fiber, complex carbohydrate food.
- Formulate and track a goal to substitute higher-fiber for lower-fiber foods.



## Wellness IN (WIN) the Rockies Principles

- Follow MyPyramid.
- Take control - eat when hungry and stop when satisfied.
- Take pleasure in eating.
- Honor the gift of food.



## Health Standards

### Content Area - Nutrition and Dietary Behavior

National Health Standards 1 (concepts), 2 (access information), 6 (decision-making), and 7 (advocacy)

Wyoming Health Content and Performance Standards 1, 2, 6 and 7

Montana Health Enhancement Content Standards 1 and 5

Idaho Grade 5 Health Performance Standards 941 and 944

Idaho Grade 6 Health Performance Standards 951 and 954

Note: Suggested standards can be met depending upon lesson components selected and assessed. Potential assessment tools are designated with a ✓.



## Approximate Length

- 30 minutes



Grandma called  
it roughage.



## Materials and Preparation

Handouts (1 per student):

Fiber Facts

Fiber Fill-Up (2 on a sheet)

WIN the Home: Bread in a Bag

Fiber-Rich Foods Word Search

25' length of rope (any kind will work)

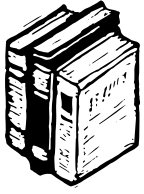
Sponge

MyPyramid for Kids Poster (see Sources and Materials)

Bread packages (labels that say “white,” “whole wheat,” and “wheat”)

24 food picture cards (cut apart) and rubber food models (if available)

Tags for legume jewelry, optional (on heavy paper)



## Background for Educator

Dietary fiber helps maintain health and prevent disease. Learning to eat high-fiber foods and moderate amounts of fat can help children reduce their risk of developing heart disease and some types of cancer later in life. Fiber intakes should increase gradually and be accompanied by an increase in fluid, particularly water.

The Adequate Intake of fiber per day for kids is based on gender and age. Ages 9 to 13 years, boys need 31 grams and girls need 26 grams of fiber daily.

For adults ages 19 to 50 years, the Adequate Intake of daily fiber is 25 grams for women and 38 grams for men. The average intake falls short at 12 to 15 grams per day. Higher-fat and highly processed foods provide little fiber. Higher-fiber foods are mostly whole grains, beans, fruits and vegetables.

Fiber, or roughage, is plant material that the body cannot digest. Fiber passes through the body. It picks up water in the intestines and carries it out through the bowels. Fiber is divided into two primary types - soluble and insoluble.

**Water-soluble fibers** have high water-holding capacity and form a water-holding gel during digestion. They slow the rate of nutrient movement from the stomach to the intestines and can slow down digestion and absorption. Soluble fibers help control blood sugar and may help lower blood cholesterol, which can decrease heart disease risk. Good sources are beans, oats, barley, and some fruits and vegetables.

**Water-insoluble fibers** have lower water-holding capacity. They speed passage of food through the intestines while increasing fecal bulk. These fibers help reduce constipation, diverticulosis, and irritable bowel syndrome. Good sources are whole grains and vegetables.

Protein, iron, folic acid and other B vitamins, and other protective substances in fiber-rich foods contribute to their health benefits. Refined grains, like white breads, are low in fiber and protective substances. Whole-grain food products include the word “whole” on their label both on the front and in the ingredient list.

Benefits of high-fiber foods include the following:

- \* they help protect against some chronic diseases
- \* they promote proper bowel function
- \* they help you feel full more quickly
- \* they take longer to eat (whole apple versus apple juice) so a person can eat less, yet feel full



# Lesson Script

## Fiber Overview

1. Fiber, or roughage, is plant material that your body cannot digest. It picks up water in your intestines, like a sponge (*hold up sponge*) and carries it through your system. This helps move food through your digestive tract.

2. Fiber is found in foods like whole-grain cereal and bread and other baked products made with whole-grain flour. The word “whole” indicates the entire or whole grain is in the food product. A whole-grain food is full of fiber and other important nutrients. White bread and wheat bread without the word “whole” on the label are made from refined flours and don’t have as much fiber. Look at the front label and ingredient list on these bread packages. (*Pass around the bread packages.*) A bread that is brown in color is not always a whole-grain bread.

3. Legumes are another great source of fiber. Legumes are beans, lentils and peas. They may be canned or dried. Dried legumes usually cost less than canned, but they take longer to cook.

4. We can also get fiber from fruits and vegetables. Much of the fiber is in the skins.

5. (*Refer to MyPyramid for Kids poster as needed.*) Foods with fiber come mostly from the grain group (orange colored band), the fruit group (red colored band) and the vegetable group (green colored band). Because they also provide protein, legumes are in the meat, poultry, beans, and eggs group.

6. Most Americans do not get enough fiber. What foods do you think may be lower in fiber that Americans eat frequently? (*Examples include: highly processed foods, many fast food menu items, and higher-fat snacks like chips.*)



More than 100 species  
of beans are grown  
throughout the world!

## The Fiber Walk Activity

1. (*Uncoil the 25' length of rope, have a person hold each end and stretch.*) This 25 foot length of rope is about the same length as our digestive system. That is a very long way for food to travel. Fiber helps to keep food moving along.

2. Everyone stand in a circle shoulder to shoulder. Now, turn to the right and make the circle smaller by taking one or two steps towards the center. (*For the first walking attempt, students should be too close to be able to step forward.*)

3. All at once, slowly sit down on the lap behind you.

4. Without enough fiber in your diet, food tends to move very, very slowly through your system. While sitting, everyone lift their right foot and step forward. Now your left foot. (*It should be very difficult, if not impossible, to do this.*)

5. Now, let's add some fiber. Fiber can help move food along. Stand up and make the circle a little bigger and sit once again. While sitting, everyone lift their right foot and step forward. Now lift your left foot. Keep trying until we can walk while sitting in the circle.

### Fiber Line-Up Activity

1. You can get enough fiber if you choose higher-fiber foods. (*Distribute rubber food models\* and picture cards.*)

\* **Note:** *Food models can vary and may represent different quantities than listed on the card. Ask students to do the activity with the serving sizes on the card.*

2. Without speaking, line up in order, from the food you think has the most fiber to the food you think has the least fiber. (*Once complete, line up correctly and distribute **Fiber Facts.***)

**Answer Key:** bran cereal; baked beans; chili; popcorn; apple; orange; raisins; bran muffin; brown rice; peanuts; (tie) whole-wheat bread and peanut butter; macaroni & cheese; corn chips; (tie) candy bar and corn cereal; (tie) white bread, doughnut and chicken noodle soup; (tie) white rice and orange juice; animal crackers; (tie) cream cheese and apple juice.

3. Split into two groups: those with foods that have 2 grams or more of fiber in one group and those with foods that have less than 2 grams of fiber in another group. Each group make a line and face the other group. Find your partner from the other group. This is the person holding the fiber food listed next to yours on the **Fiber Facts** worksheet. For example: chili and soup are partners.

4. Introduce your partner. Tell us how much more or less fiber is in her or his food than yours.

➤ **MATH Option:** Distribute **Fiber Facts**. Ask students to complete them independently or with their partner. ✓ Discuss decimal points and the *greater than* and *less than* symbols.

### Fiber Fill-Up Goal Setting

1. (*Distribute the **Fiber Fill-Up** table tent.*) For most people, making a change in how they eat takes some time and practice. Select a high-fiber food you enjoy eating and write the food name on the table tent. Complete the rest of the blanks.

2. Place the tent on your desk and color a star every time you eat that food.

3. (Follow up in one week.) How many stars did you fill in? What did you think of this experience? Are there other higher-fiber foods you might try to eat more of? ✓



## WIN the Home: Bread in a Bag and Label Search

- The **Bread in a Bag** activity can be done at home or in class. If ovens are not available at the teaching site, students can make mini-loaves in disposable pans then take the loaves home to bake. See handout for recipe and instructions.
- Ask students to go on a Label Search to find whole-grain food products at home, in the store, or in television or magazine advertisements. Bring labels, advertisements or a list back to class. ✓

*Please note: pilot testing of lessons has determined that WIN the Home activities are most successful when students have time over a weekend to complete them, when a follow-up is conducted in class, and when students receive credit for completion.*



## WIN the Community: Whole-Grain Bread

Work with local grocery stores to label whole-grain breads with a special sticker created by students. These labels can say “contains whole grains” and students can make posters about fiber to display in the bread section of the store. ✓



## Additional Ideas

- Make jewelry using a variety of legumes/beans. To avoid wasting food, try to use beans that are not intended for sale. Contact a bean elevator or a plant for beans that have been sorted as un-sellable (cull beans). Cull beans can be especially interesting in shape and size (shriveled, cracked, different color, deformed). Another option is to contact the local grocery store for dried beans that are past their expiration date.

**Necklaces and bracelets:** Soak beans overnight. Thread beans using a needle and cording. Elastic cording is best for bracelets or smaller necklaces. Let dry.

**Buttons and earrings:** Glue dry beans onto backings. Supplies can be found where craft supplies are sold.

Label jewelry with a card. A template is included. Distribute as a community service project to increase awareness of fiber foods, or sell as a fund raiser.

- LANGUAGE Option – Distribute and have students complete the **Fiber Word Search**. If they are unsure what any of the high-fiber foods are, they can look them up in the dictionary or look for them the next time they go to a grocery store. ✓



## Sources and Materials

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To print MyPyramid for Kids Posters, go to the USDA web site at [www.mypyramid.gov](http://www.mypyramid.gov) and click on "For Kids."

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