

The Whole Story: Using Ancient Grains

Leader Guide

Lesson Objectives

Participants will identify the health benefits of whole grains
Participants identify ancient whole grains, how to prepare and store them
Participants will incorporate more whole grains in their diet

Lesson Materials

Activity Handouts: Great Pyramid of Grains, Label Reading Activity
Visuals: Whole Grains Stamp, Grain Anatomy, Ancient grain samples
FCD09-10 The Grain Guru Cookbook (Leader only)
Cereal or cracker boxes (optional)
FCD09-05 Participant Handout: Ancient Grains and sample recipes
Evaluation and Consent forms

Before the Lesson

Obtain grain samples from Extension Office
Copy participant handout and activities
Copy and cut labels so that you have a set for every 2-3 people
Make overhead transparencies of Whole Grains Stamp and Grain Anatomy graphics
Prepare grain recipe for tasting, making sure you have plate ware and utensils for serving samples

Introduction:

As the low carbohydrate diets lose popularity, many of us are considering ways to incorporate more healthful carbohydrates into our diet which include whole grains. What are some “grains” or foods made with grains that you eat?

Do you think you eat enough whole grains? Most people think they do. Americans on average eat 10 servings of grain a day. Only one of those servings is considered a true whole grain (Journal of the American Dietetic Association, 12/05).

Whether you’re accustomed to white rice or are already a fan of whole grains, there’s always a new grain to be tried. Whole grains can add a variety of flavors and textures to your plate while providing disease fighting compounds. They’re easy to store and many are reasonably priced.

Italicized type gives teaching instructions.

Brainstorm grains and/or grain products that participants currently eat—give them ideas if they can’t think of any such as pasta, oatmeal, bulgur, crackers, rice, bread, cereal, tortillas.

We'll be learning about the benefits of eating whole grains and how to identify them as well as how to prepare less well-known ancient grains such as amaranth, quinoa (pronounced "KEEN-wah") and couscous. By the end of this session, you'll be ready to add a new whole grain to your daily meal repertoire.

What is Whole Grain?

Grains are seed-bearing fruits of cultivated grasses. The grain seed (or kernel) of various grains are similar in structure but differ in size and shape. A grain is considered "whole" when it has the bran, germ and endosperm in place. Bran and germ layers contain most of the disease preventing nutrients but are often removed (or refined) because of taste and color preferences. Refined grains are made of mostly the starchy part (85% of the whole grain) which is light and very shelf stable.

Outer Shell or Bran: protects the seed; provides us fiber, B-vitamins and trace minerals

Germ: provides nourishment for the seed; provides us antioxidants, vitamin E (oil), and B-vitamins

Inside or Endosperm: provides energy for the plant; provides us calories primarily from carbohydrate.

Whole Grains are More than Just Fiber:

When you choose whole grains you get the nutritional benefit from the entire grain. It was previously thought that the main reason to eat whole grains was to get the fiber. Although this is still true, the benefits of whole grain go beyond the fiber. The vitamins, minerals and phytonutrients (plant compounds that offer health benefits) appear to work together to enhance the body's ability to ward off disease.

In other words, when it comes to whole grains the "whole" is greater than the sum of the individual parts. When you eat refined grains, you miss out on all the grain parts that can keep you from getting sick.

Diets rich in whole grains (and low fat) may lower your risk of heart disease and some cancers. Emerging research suggests whole grains may also reduce the risk of diabetes. They can help you feel full and aid in weight management.

Note: There are pseudo or false grains that are still called grains but technically are not because they come from broad leaf plants, not grasses. Pseudo grains include amaranth, quinoa, flaxseed, buckwheat.

Show picture of the whole grain anatomy.

Ask if anyone knows specific health benefits to eating whole grains.

Other benefits include minimal processing (so no additives or added sodium) and a distinctive flavor. Many people grow to like the earthy taste of whole grains and actually prefer it to refined grains.



For you to receive the healthful benefits of whole grains, the 2005 Dietary Guidelines for Americans recommends the average adult eat at least three 1 oz servings of whole grains each day.

Ancient Grain Lingo:

As the name implies, ancient grains have been around a long time. Hundreds of years ago these grains were the primary sustenance for early civilizations. In today's culture, food more often than not comes packaged "ready-to-eat." We have forgotten not only the value of these ancient grains but how to go about preparing them. Let's review the types of ancient grains and how to cook them.

Give examples of what 1 ounce serving would be such as 1 slice of bread or 1/2 bagel, 1/2 cup rice or oatmeal, 3 cups popcorn. Go to www.mypyramid.gov "Inside the Pyramid," choose "Grains" then "What Counts as an Ounce."

Review description of grains in participant handout. Pass around samples of each grain as you discuss how they are used.

Point out the symbols used:  indicates a grain that is wheat free and ideal for wheat allergies;  indicates gluten free grain; \$\$ indicates a grain that is expensive.

Time Saving Note: If you're running short on time, consider discussing only 3 or 4 grains rather than all of them.

Great Pyramid of Grains Activity (optional). Before you begin this section you can test the knowledge of your group by having them match the grains with the appropriate row. Review Answers later:
Row 1: Amaranth, Barley, Buckwheat, Kamut, Rice
Row 2: Teff, Quinoa, Millet, Corn
Row 3: Wheat, Corn, Oats, Rice
Row 4: Bulgur, Couscous, Semolina
Row 5: Teff, Amaranth
Row 6: Triticale

You'll notice the handout has instructions on preparation and storage. There are recipes for you to try as well.

How to Identify Whole Grains:

Whole grains are made from the entire grain seed (usually called the kernel). If the kernel has been cracked, crushed or flaked, it must retain nearly the same relative proportions of bran, germ and endosperm as the original grain to be called whole grain (example: rolled oats).

The samples of ancient grains we've just looked at are easy to identify as being "whole." However when grains are processed into breads, cereals, crackers and other products it's harder to determine whether the whole grain was used and if so how much. Product labeling such as "made with whole grains" can be confusing. So can coloring—brown bread or crackers are not always made with the whole grain.

Where can you find information on the amount of whole grains in a processed food?

How many of you would use the "Nutrition Facts" label to find the information? How many of you would use the ingredient list? How many of you would use other information on the box and if so what?

Although the "Nutrition Facts" label has a wealth of information, it's not very helpful in determining if the item is whole grain. Usually, but not always, whole grain foods will have more dietary fiber—you can use this to compare products. You can also use the ingredient list as a guide. Ingredients are listed in descending order of weight—from most to least. Choose foods with a whole grain ingredient listed first such as "whole oats or whole grain flour."

Other labeling on the box can also give you clues. Choose products that specify "100% whole grains" or those with FDA health claim: "Diets rich in whole grain foods and other plant foods and low in total fat, saturated fat and cholesterol may reduce the risk of heart disease and some cancers."

Recipes: Sample recipes are in the participant handout. Pass around the full set and point out the web site where all recipes can be accessed. If possible, prepare one of the recipes to taste.

Optional: Have several empty cereal or cracker boxes to pass around.

Label Reading Activity (optional):
Practice reading product ingredient lists, sorting out which would be considered whole grain.

Instruct pairs of participants to sort labels into two piles – those that are whole grain and those that aren't.

Note: Item must be 51% or more whole grain by weight to use this FDA health claim.

Answers to label reading activity:

#1 Crackers – No

#2 Multi-grain bread – Yes

#3 Toasted O-ring cereal – Yes

#4 Popcorn – Yes

#5 Wild rice grain mix – No

#6 Whole wheat blend pasta – No

#7 Granola bars – Yes

#8 Corn muffins - No

The Whole Grain Council developed a voluntary “whole grain” stamp in 2005. A food with 16 grams or more of whole grain per serving would be considered an excellent source and would provide at least one serving of whole grains (remember you need 3 a day or 48 grams).

Conclusion:

Ancient whole grains may very well have ancient wisdom on how we can eat healthier. Continue to experiment with how to use these grains. When you buy processed grains read labels to determine which items are whole grain. You’ll enjoy the interesting flavors and textures as well the disease fighting benefits of eating whole grain, ancient or otherwise.

Resources:

Bell Institute of Health & Nutrition, General Mills
http://www.bellinstitute.com/bihn/index.aspx?cat_1=83

Whole Grain Council
www.wholegrainscouncil.org

Bob’s Red Mill, Milwaukie, Oregon
Phone 800-349-2173 www.bobsredmill.com

Green on Greens & Grains by Bert Greene. Tess Press, Black Dog & Leventhal Publishers, Inc., NY, NY. 1984

Show picture of this stamp

Have participants complete lesson evaluation after you have read the consent.

Developed by OSU Extension Family and Community Development faculty: Patty Case (Klamath county) and Stephanie Polizzi (Coos county)



**EAT 48g OR MORE OF
WHOLE GRAINS DAILY**

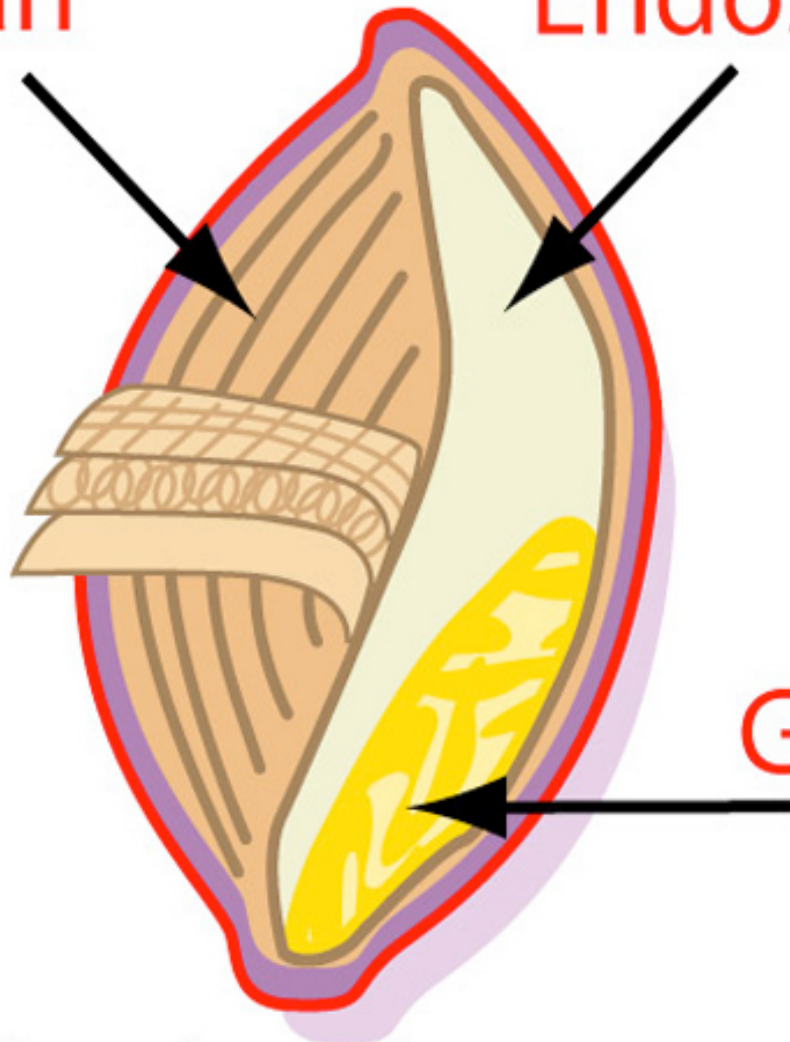


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WHOLE GRAINS DAILY**

Image courtesy Oldways and the Whole Grains Council, wholegrainscouncil.org

Bran

Endosperm



Germ

Grain Anatomy

Great Pyramid of Grains

G
R
A
I
N
S

Amaranth	Oats
Barley	Quinoa
Buckwheat	Rice
Bulgur	Semolina
Corn	Teff
Couscous	Triticale
Kamut	Wheat
Millet	

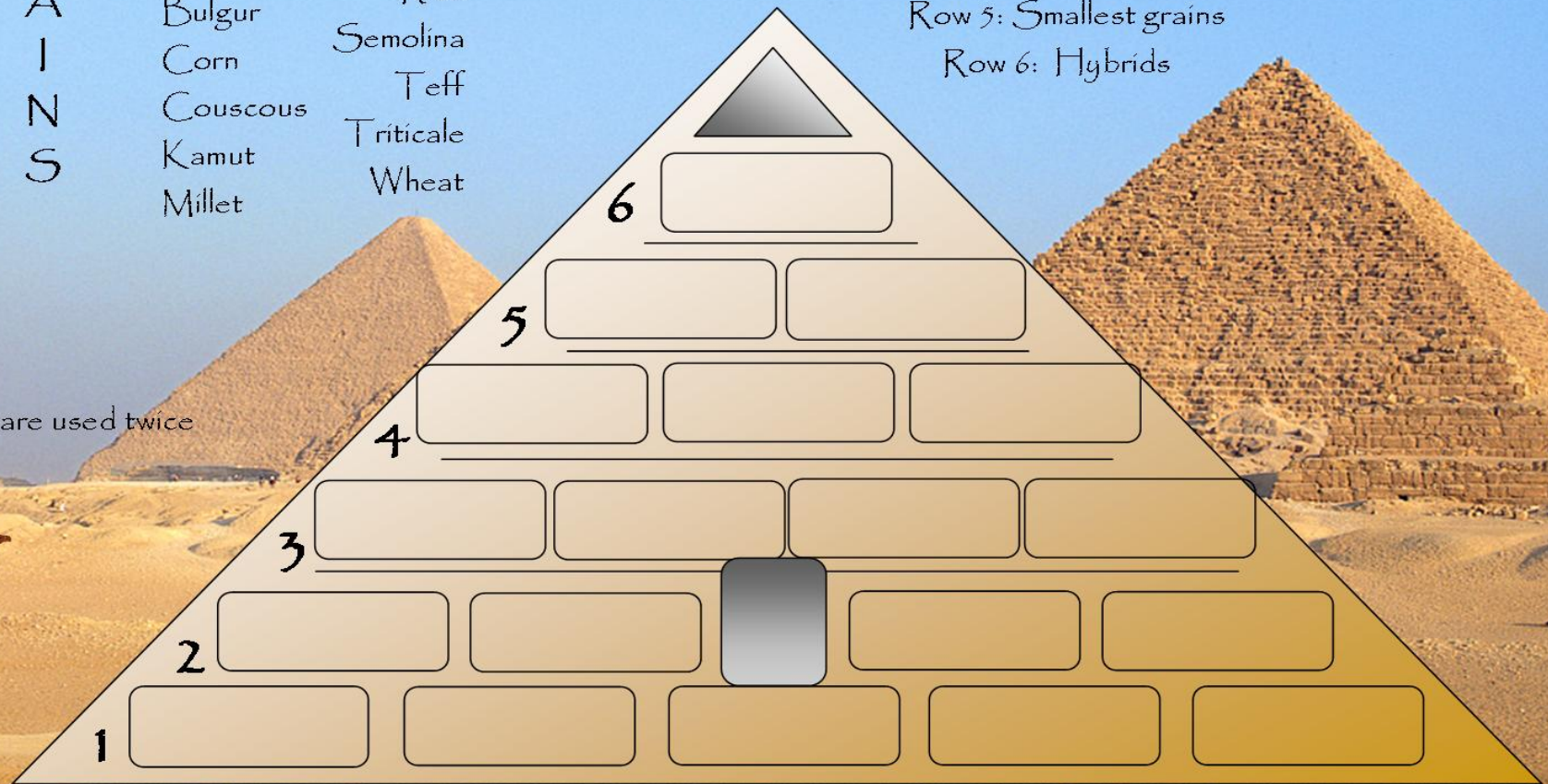
Rows 1 & 2: Low or Gluten free grains

Row 3: Most widely used grains

Row 4: Forms of wheat

Row 5: Smallest grains

Row 6: Hybrids



Crackers Made with Whole Wheat

#1

Ingredients: Enriched white flour (wheat flour, niacin, iron, thiamine, vitamin B1, riboflavin, folic acid), whole wheat flour, partially hydrogenated soybean oil, sugar, high fructose corn syrup, leavening, salt, soy lecithin.

Serving Size: 5 crackers
Calories: 70

Dietary Fiber: less than 1
Total Fat: 2.5 gm



Multi-Grain Bread

#2

Ingredients: Stone-ground whole wheat flour, water, corn syrup, wheat gluten, yeast. Contains 2% or less of each of the following: honey, partially hydrogenated soybean oil, salt, dough conditioners: (mono- and diglycerides, ethoxylated mono- and diglycerides, calcium, sodium stearoyl lactylates, calcium peroxide, and calcium carbonate), yeast, distilled vinegar, and cornstarch.

Serving Size: 1 slice
Calories: 70

Dietary Fiber: 2 gm
Total Fat: 1 gm



Toasted O-Ring Cereal

#3

Ingredients: Whole grain oat flour, wheat starch, sugar, oat fiber, salt, oat extract, calcium carbonate, dicalcium phosphate, trisodium phosphate, caramel color, BHT, beta carotene.

Serving Size: 1 cup
Calories: 110

Dietary Fiber: 3 gm
Total Fat: 2 gm



Light Microwave Popcorn

#4

Ingredients: Popcorn, partially hydrogenated soybean oil, salt, butter, natural flavors, and freshness preserved with TBHQ and citric acid.

Serving Size: 2 cups
Calories: 40

Dietary Fiber: 1 gm
Total Fat: 1 gm

Wild Rice Mix

#5

Ingredients: Long grain parboiled rice enriched with iron, thiamin, and folic acid, wild rice, vegetables, hydrolyzed soy/corn/wheat gluten protein, sugar, autolyzed yeast extract, salt, spice, smoked yeast, sunflower oil, natural flavor, tumeric.

Serving Size: 1 cup
Calories: 190

Dietary Fiber: 1 gm
Total Fat: 3 gm



Whole Wheat Blend Pasta

#6

Ingredients: Enriched semolina (contains semolina, niacin, iron, thiamin mononitrate, riboflavin, folic acid), wheat bran, wheat fiber, wheat germ.

Serving Size: 1 oz dry (1/2 c. cooked)
Calories: 90

Dietary Fiber: 3 gm
Total Fat: Less than 1 gm



Oat-Honey Granola Bars

#7

Ingredients: Whole grain rolled oats, sugar, canola oil, crisp rice, (rice flour, sugar, malt, salt), honey, soy protein, brown sugar syrup, salt, soy lecithin, baking soda, natural flavor, almond flour, peanut flour

Serving Size: 2 bars
Calories: 180

Dietary Fiber: 2 gm
Total Fat: 6 gm



Corn Muffins

#8

Ingredients: Enriched flour, corn meal, sugar, shortening, leavening, salt

Serving Size: 1 muffin
Calories: 180

Dietary Fiber: 1 gm
Calories from Fat: 50