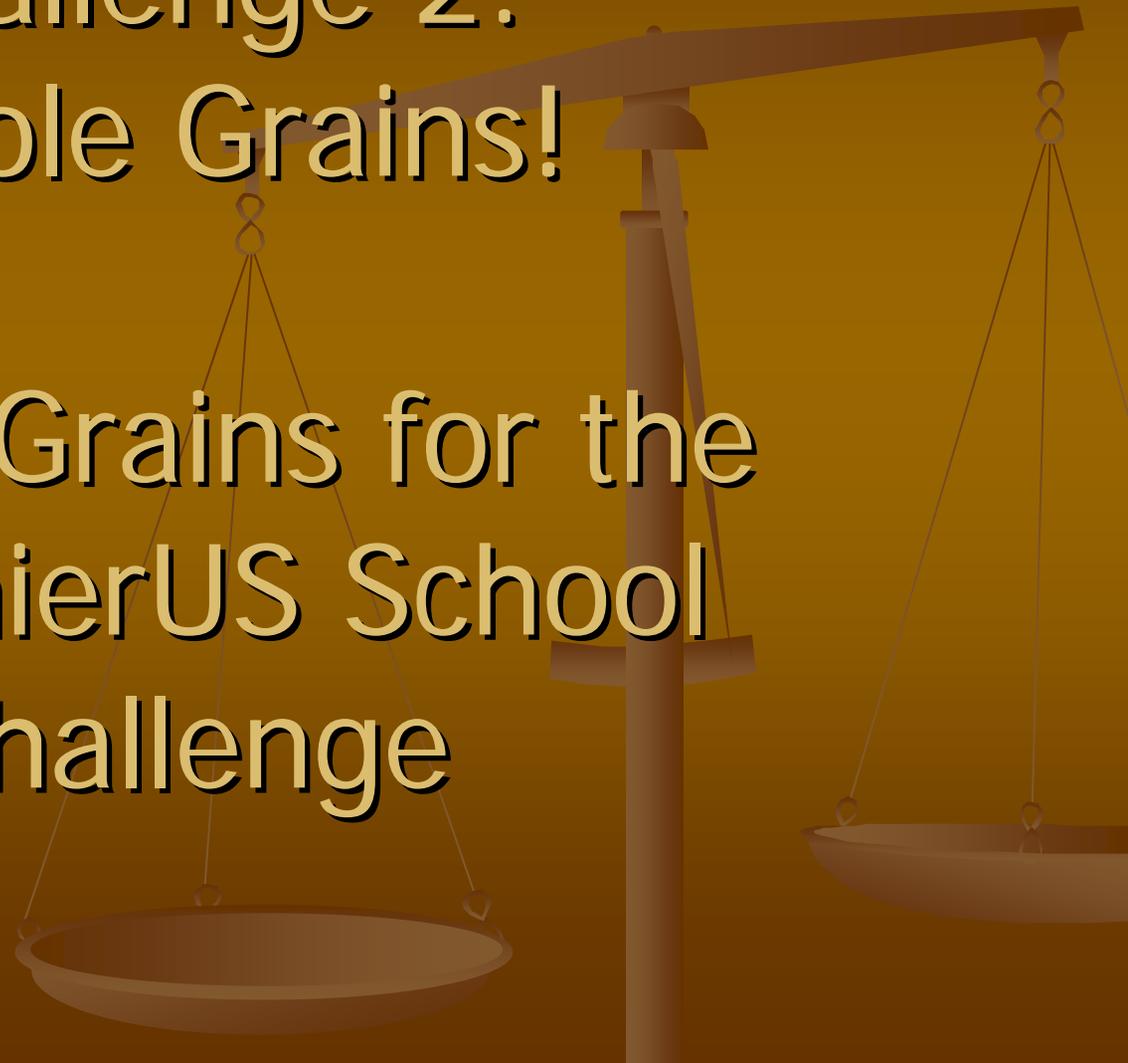


# Challenge 2: Whole Grains!

Whole Grains for the  
HealthierUS School  
Challenge

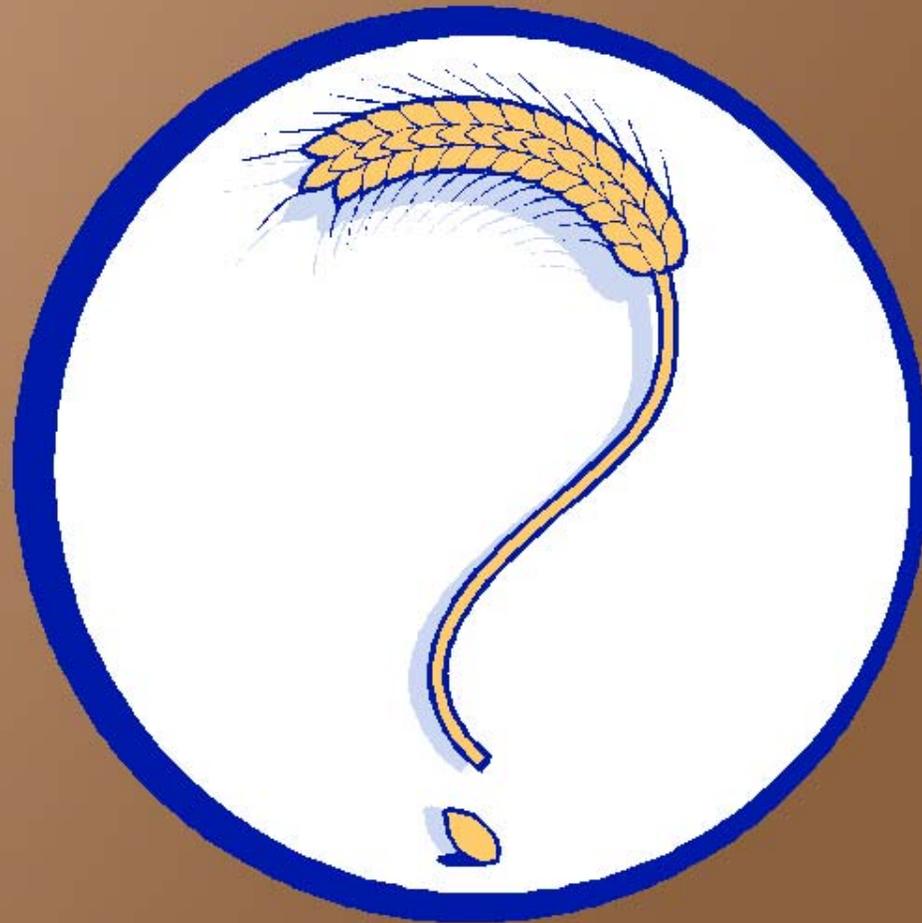


# Get Your Grains



- **Orange band** represents grain foods: breads, cereals, rice, pasta
- Grains are an important source of nutrients
- Amount of grains right for you depends on:
  - Age, Gender, Physical Activity
- Americans are getting enough grains, overall
  - **Falling short on whole grain intake**

# What is a Grain?



# Grains are Seeds



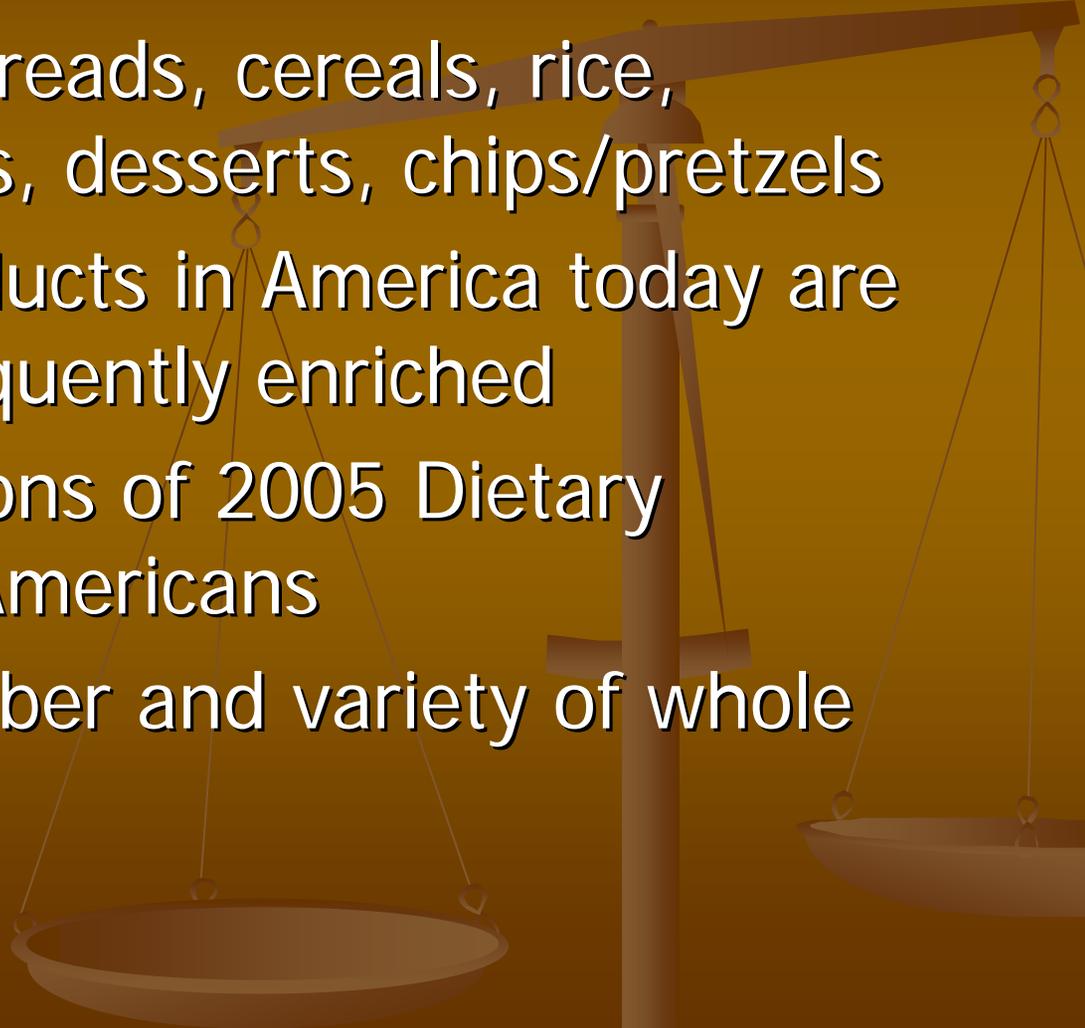
Cereal Grass

Seed

# What Are Grains?

- Grains are the seeds of cereal grasses:
  - Includes three parts—bran, germ, endosperm
  - Includes wheat, oats, corn, rice, barley, rye; also less well known grains such as emmer (farro), Kamut<sup>®</sup>, millet, sorghum (milo), spelt, teff, triticale
- Some grains are not “true cereals”—includes buckwheat, amaranth, quinoa

# What Are Grains? (cont.)

- Grain Foods: Breads, cereals, rice, pastas, crackers, desserts, chips/pretzels
  - Most grain products in America today are refined and frequently enriched
  - Recommendations of 2005 Dietary Guidelines for Americans
  - Increasing number and variety of whole grain products
- 

# Parts of a Grain

## Outer Shell

- Bran
- Fiber
- B-Vitamins, Trace Minerals

## Middle Layer

### Endosperm

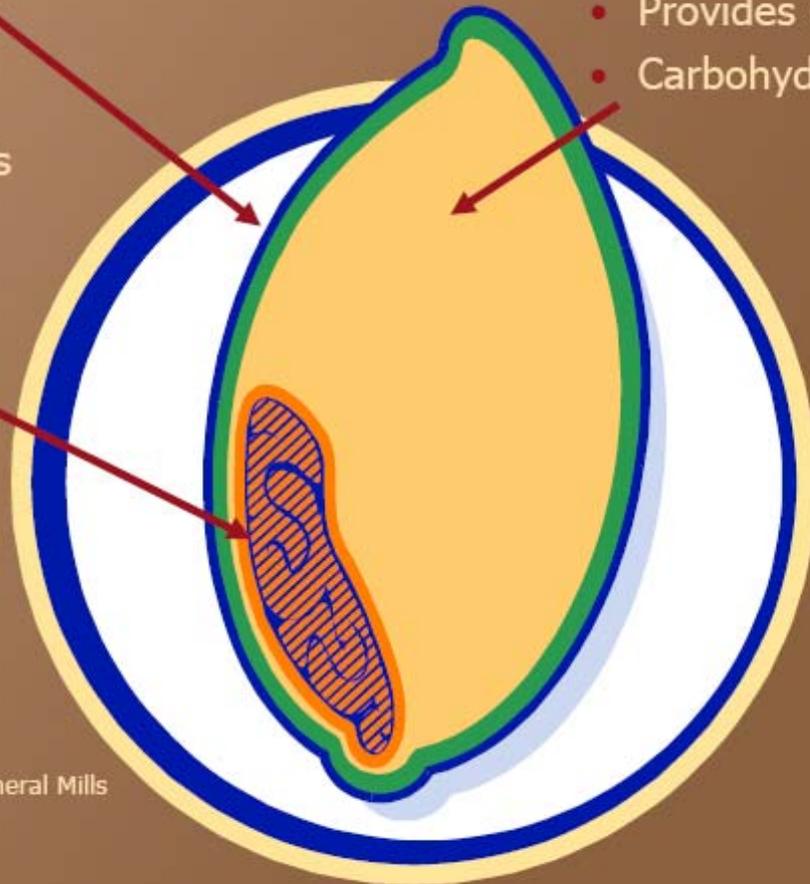
- Provides energy
- Carbohydrate, protein

## Inner Layer

### Germ

- Nutrient storehouse
- B-Vitamins, Phytonutrients, Antioxidants, healthy fats

© General Mills



# Milling of Grains

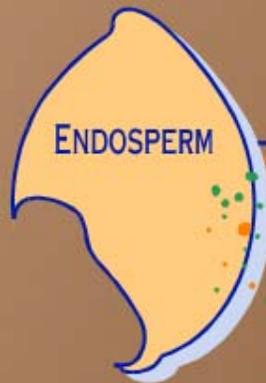
## Whole Grain



All parts milled



## Refined Grain



Endosperm is milled

Germ & Bran



# Refining/Milling of Whole Grains

*Refined grains* have been milled — the bran and germ are removed. This process also removes much of the B vitamins, iron, and dietary fiber.

...some refined grains are *enriched*. This means certain B vitamins (thiamin, riboflavin, niacin) and iron are added back after processing; folic acid (folate) is also added. Fiber is not added back to most enriched grains."

[http://www.pueblo.gsa.gov/cic\\_text/food/grain/train.pdf](http://www.pueblo.gsa.gov/cic_text/food/grain/train.pdf)

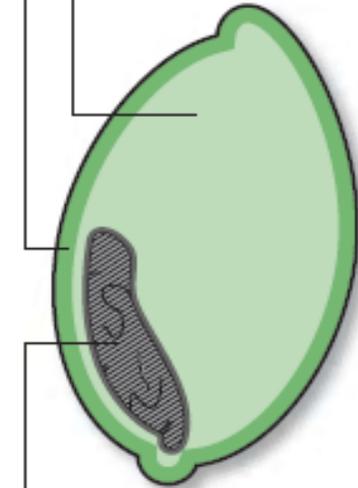
## Whole grain kernel

### Bran

"Outer shell" protects seed  
Fiber, B vitamins, trace minerals

### Endosperm

Provides energy  
Carbohydrates, protein



### Germ

Nourishment for the seed  
Antioxidants, vitamin E, B vitamins

# What's So Great About Whole Grains?



# Grains Provide Key Nutrients

## Grains Contain Important Nutrients



Carbohydrates



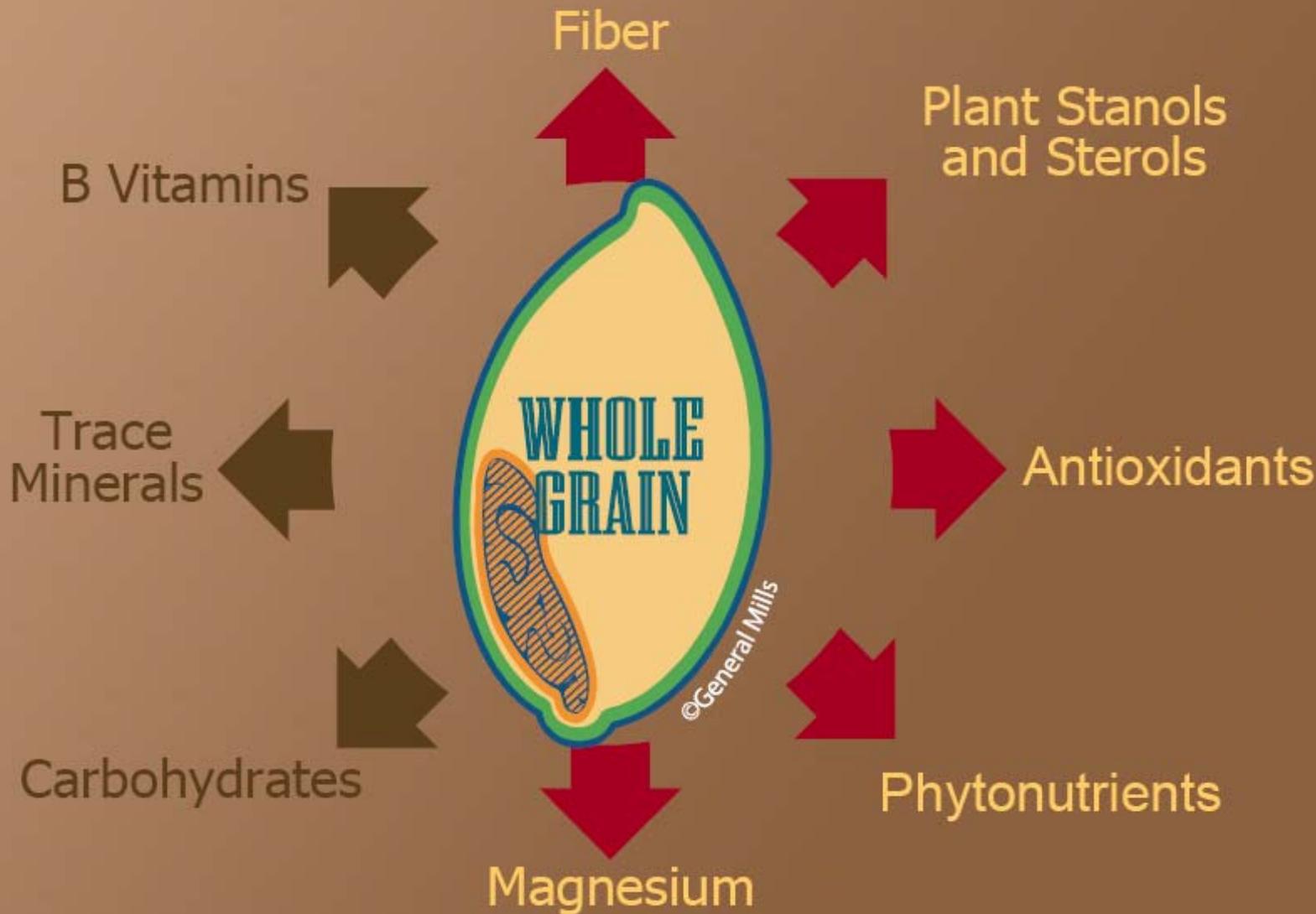
B Vitamins



Trace Minerals

- Iron
- Zinc
- Copper

# Whole Grains Have Grain Benefits PLUS More



# Whole Grain Benefits Beyond Fiber

## Phytonutrients

- Phyto = plant
- Nutrients = substances that protect health

## Antioxidants

- Protect cells from damage
- “Rust-proofing for the body”

## Plant Stanols and Plant Sterols

- Lower blood cholesterol levels by interfering with its absorption

# Whole Grain Health Benefits

- Reduced risk of disease:
  - Heart disease
  - Some cancers
  - Diabetes
- Digestive health
- Weight control



# How Do I Find Whole Grain Products?



# Will the Whole Grain Please Stand Up?

100%  
wheat

CRACKED  
WHEAT

Organic

Multi-Grain

Pumpernickel

Stone Ground

BRAN

# Whole Grains Are:

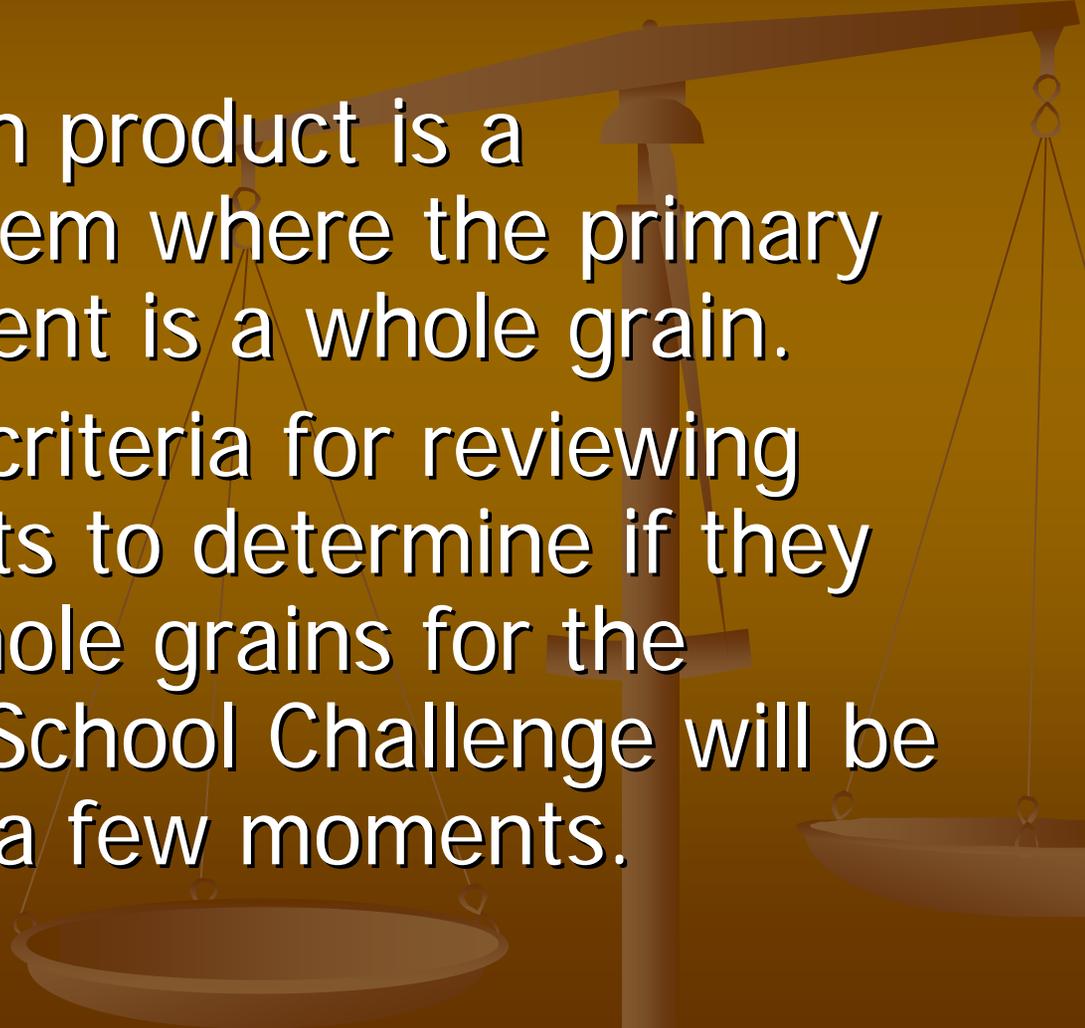


- The entire grain seed (usually called the kernel), which consists of:
  - Bran – The hard, brownish outer protective skin of the grain surrounding the germ and the endosperm.
  - Germ – The plant embryo that contains most of the wheat kernel's fat and vitamin E.
  - Endosperm – The inner part of the grain whose main nutrients are protein and carbohydrates.

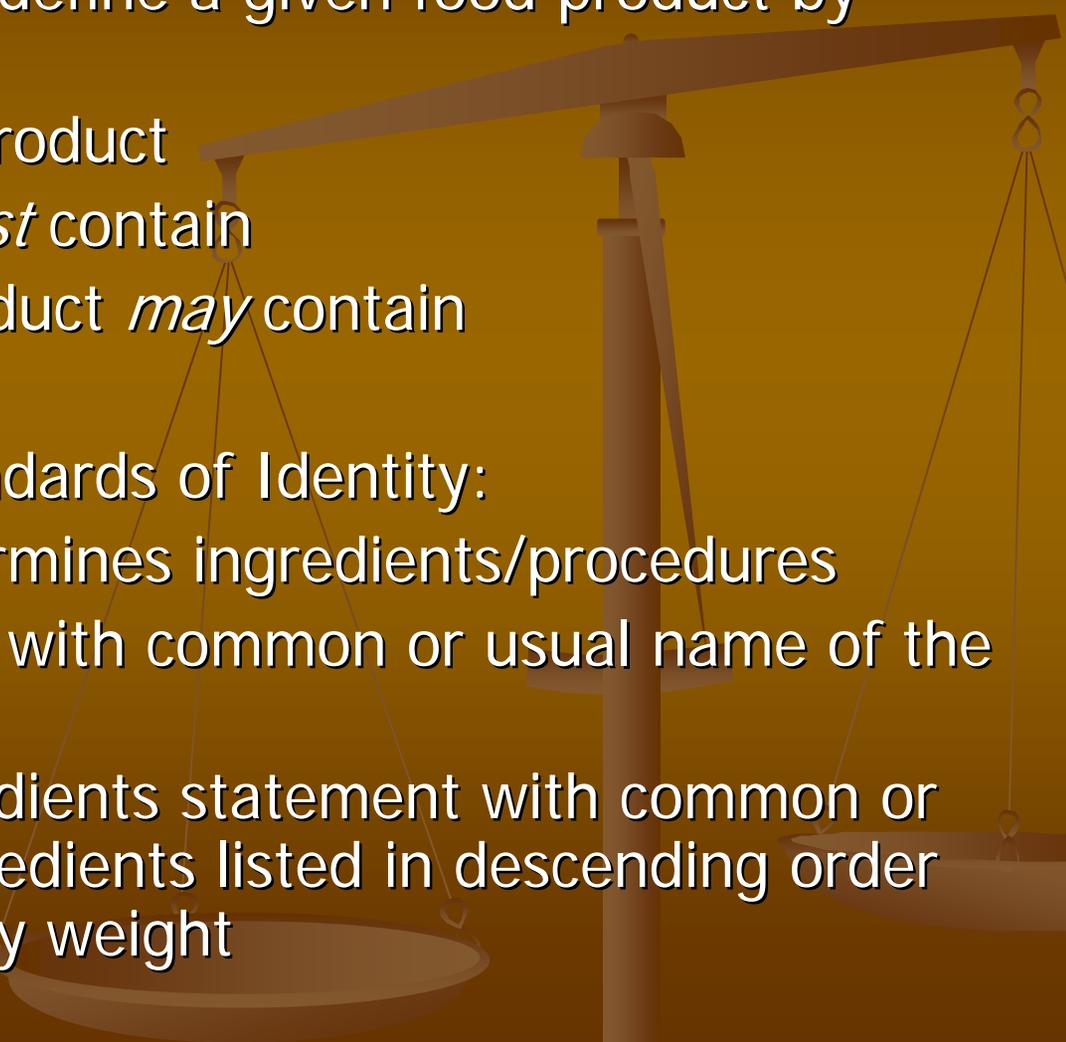
# Issues in Defining Whole Grains:

- **FDA** does not have a definition of whole grains.
- **2005 US Dietary Guidelines:** “If the kernel has been cracked, crushed, or flaked, it must retain *nearly* [emphasis added] the same relative proportions of bran, germ, and endosperm as original grain to be called whole grain.”
- **HealthierUS School Challenge:** “Whole grains shall consist of the intact, ground, cracked or flaked grain seed, whose principal anatomical components—the starchy endosperm, germ and bran—are present in the same relative proportions as they exist in the intact grain seed.”

# What Is a Whole Grain Product for the HealthierUS School Challenge?

- A whole grain product is a food/menu item where the primary grain ingredient is a whole grain.
  - The specific criteria for reviewing grain products to determine if they qualify as whole grains for the HealthierUS School Challenge will be discussed in a few moments.
- 

# Food Products and Standards of Identity



- Standards of Identity define a given food product by specifying:
  - The name of the product
  - What the food *must* contain
  - What the food product *may* contain
- Products without Standards of Identity:
  - Manufacturer determines ingredients/procedures
  - Must label product with common or usual name of the food
  - Must provide ingredients statement with common or usual name of ingredients listed in descending order of predominance by weight

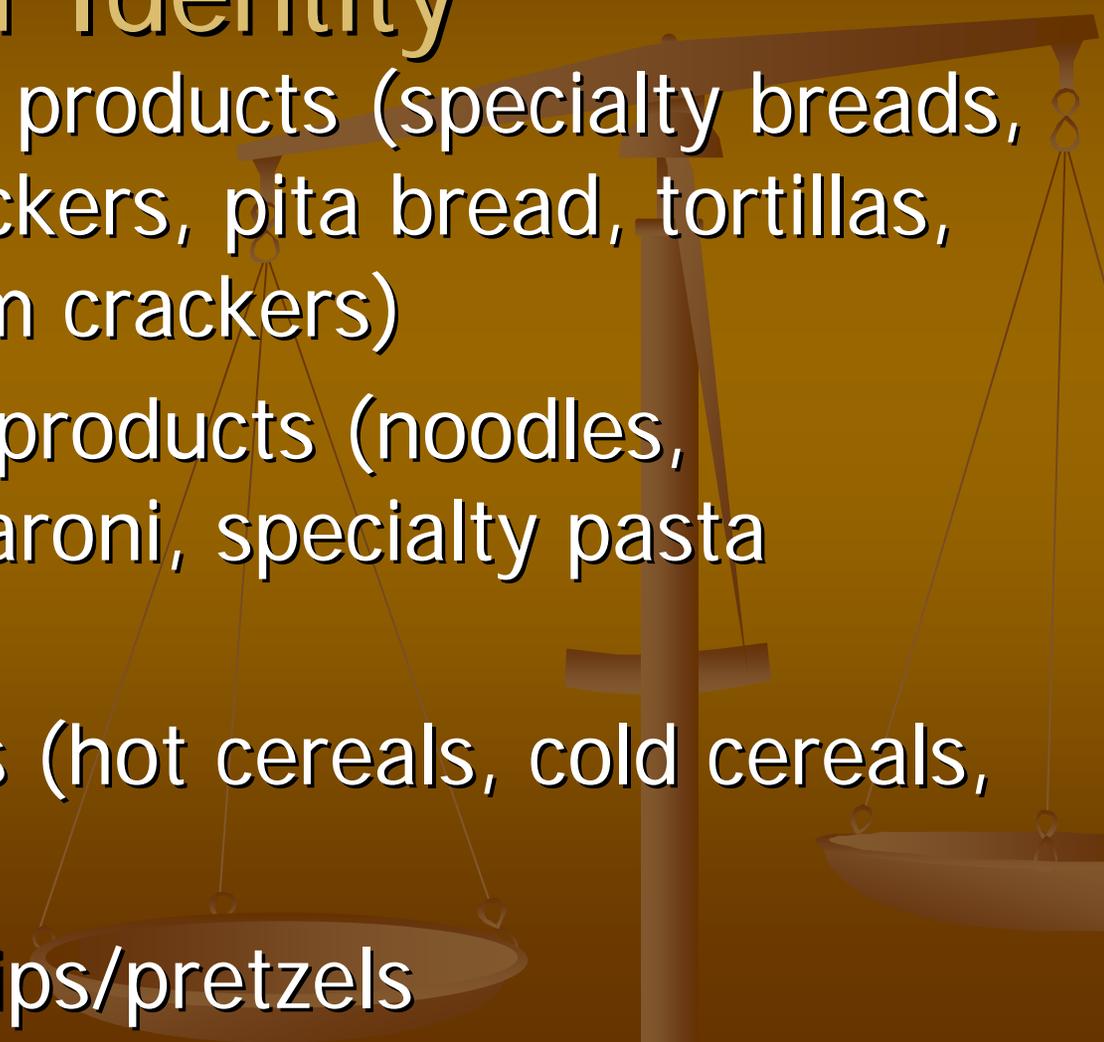
# Whole Grains and Standards of Identity

- Whole-Grain Bakery Products with Standards of Identity
- Whole-Grain Macaroni Products with Standards of Identity
- Whole-Grain Cereal Flours and Related Products with Standard of Identity

(HealthierUS School Challenge Whole Grains Resource-Page 2)



# Products That May Contain Whole Grains That Do Not Have Standards of Identity

- All other baked products (specialty breads, rolls, buns, crackers, pita bread, tortillas, cookies, graham crackers)
  - All other pasta products (noodles, spaghetti, macaroni, specialty pasta products)
  - Cereal products (hot cereals, cold cereals, granola)
  - Grain-based chips/pretzels
- 

# Common and Usual Names for Whole Grains

- The word “whole” listed before a grain
- The words “berries” or “groats”
- “Rolled oats” and “oatmeal”
- Other whole grain products that do not use the word whole in their description: “Graham flour,” “brown rice,” “brown rice flour,” “wild rice,” “cracked wheat,” “bulgur (cracked wheat),” and “crushed wheat”

# Some Examples of Whole Grains

- Whole wheat
- Cracked wheat, crushed wheat
- Graham flour
- Whole oats/oatmeal
- Whole corn
- Brown rice & wild rice
- Whole rye
- Whole grain barley
- Buckwheat groats/whole buckwheat flour
- Bulgur (cracked wheat)
- Whole Millet
- Whole Quinoa
- Whole Spelt
- Whole Sorghum (Milo)



# Label Reading for Whole Grains

Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

**INGREDIENTS:** **WHOLE GRAIN OATS**, MODIFIED CORN STARCH, CORN STARCH, SUGAR, SALT, CALCIUM CARBONATE, OAT FIBER, TRIPOTASSIUM PHOSPHATE, WHEAT STARCH. VITAMIN E (MIXED TOCOPHEROLS) ADDED TO PRESERVE FRESHNESS.

**VITAMINS AND MINERALS:** IRON AND ZINC (MINERAL NUTRIENTS), VITAMIN C (SODIUM ASCORBATE), A B VITAMIN (NIACINAMIDE), VITAMIN B<sub>6</sub> (PYRIDOXINE HYDROCHLORIDE), VITAMIN B<sub>2</sub> (RIBOFLAVIN), VITAMIN B<sub>1</sub> (THIAMIN MONONITRATE), VITAMIN A PALMITATE, A B VITAMIN (FOLIC ACID), VITAMIN B<sub>12</sub>, VITAMIN D.

DISTRIBUTED BY **General Mills Cereals, LLC**



Look for  
"Whole Grain"  
as a Leading  
Ingredient

# Look for an FDA-Approved Health Claim

**IN A LOW-FAT DIET, WHOLE GRAIN FOODS LIKE  
TOTAL MAY REDUCE THE RISKS OF  
HEART DISEASE and SOME CANCERS**

Diets rich in whole grain foods and other plant foods, and are low in total fat, saturated fat and cholesterol may reduce the risks of heart disease and certain cancers.

# Look for Whole Grain Symbols

- **Whole Grains Council Stamp Program**



For products offering a half-serving or more of whole grain.  
Contains at least 8g whole grain per serving.  
8g = 1/2 *MyPyramid* serving



For products where ALL of the grain is whole grain.  
Contains at least 16g whole grain per serving.  
16g = a full *MyPyramid* serving

- **General Mills Products**



Half Serving:



Provides at least 8 grams of whole grain per serving. At least 48 grams of whole grain recommended daily

Full Serving:



Provides at least 16 grams of whole grain per serving. At least 48 grams of whole grain recommended daily

# Names That Indicate Products/Ingredients Are Not Whole Grains

- Flour, white flour, wheat flour, all-purpose flour, unbleached flour, self-rising flour
- Durum flour, semolina
- Grits, corn grits, hominy grits
- Degerminated corn meal
- Enriched flour, rice flour
- Farina
- Couscous



# Label Reading and Whole Grains

Read the ingredients statement: Choose foods with a whole grain listed as the **first grain ingredient**.

Ingredients are required to be listed in descending order of predominance by weight (from most to least).



# Watch the Wording on Grain Products!

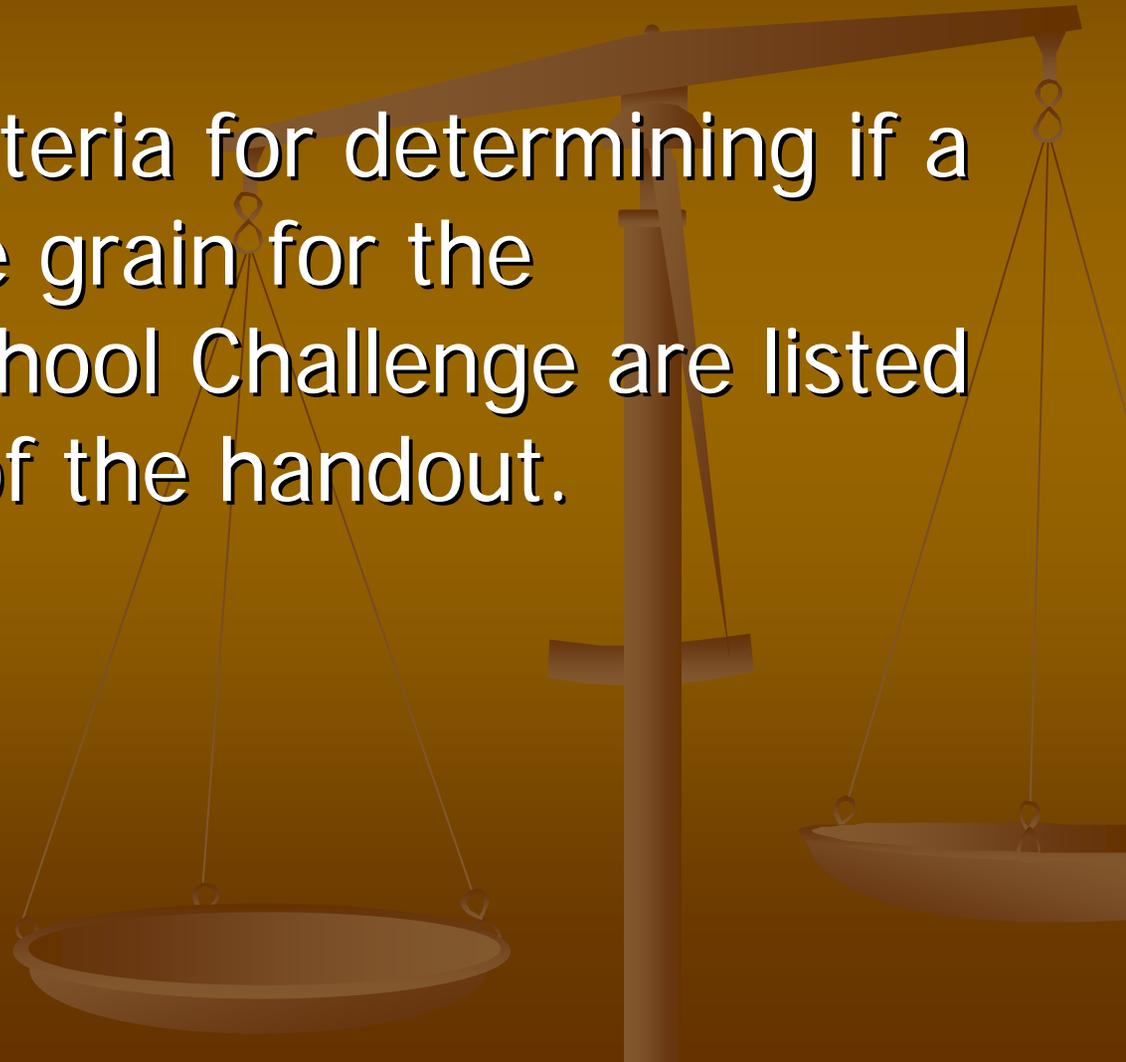


Foods are usually not whole grain products if labeled with these words:

- Multigrain
- Stone-ground
- 100% wheat
- 7-grain (6-, 9-, 12-)
- Bran
- "Made with" or "Contains" whole grain

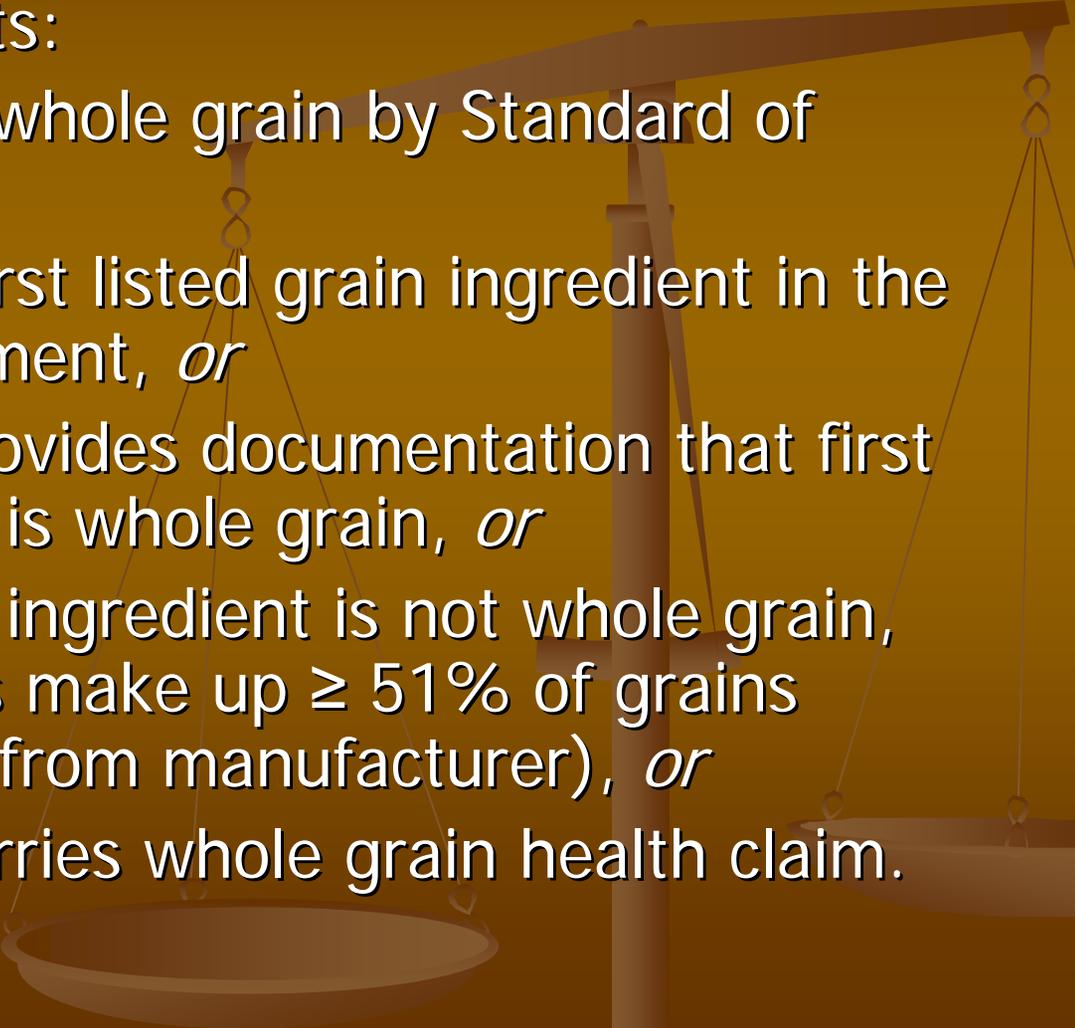
# Criteria for Whole Grains for the HealthierUS School Challenge

- The specific criteria for determining if a food is a whole grain for the HealthierUS School Challenge are listed on pages 5-6 of the handout.



# Whole Grain Products for the HealthierUS School Challenge

## ■ Purchased Products:

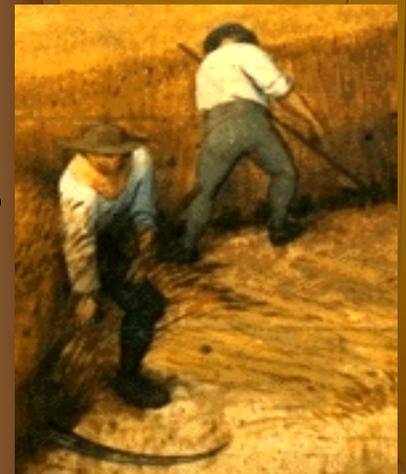
1. Food product is whole grain by Standard of Identity, *or*
  2. Whole grain is first listed grain ingredient in the ingredient statement, *or*
  3. Manufacturer provides documentation that first listed ingredient is whole grain, *or*
  4. First listed grain ingredient is not whole grain, but whole grains make up  $\geq 51\%$  of grains (documentation from manufacturer), *or*
  5. Food product carries whole grain health claim.
- 

# Whole Grain Products for the HealthierUS School Challenge (cont.)

- School-Made Products:
  1. The total grain weight in the food product is 100% whole grain, *or*
  2. If only two grain products are used, the weight of the whole grain is at least 51% of the total grain weight, *or*
  3. If multiple grains are used, the weight of the whole grains added together is at least 51% of the total grain weight.

# Classes of Wheat

- Classes of wheat: Based on hardness, color of its kernels, planting time
  - Hard red winter, hard red spring, hard white
  - Soft red winter, soft white
  - Durum
- Red wheat bran contains tannins
  - Slightly bitter flavor
- White wheat preferred by some for flavor and color



# Which Is the Whole Grain Bread?

**A**

Wheat flour, water, high fructose corn syrup, molasses, whole wheat flour ...

**B**

Whole wheat flour, water, brown sugar ...

Answer: **B** Has **WHOLE** Wheat As  
the Primary Ingredient!

**A**



Wheat flour, water,  
high fructose corn syrup,  
molasses, wheat bran ...

**B**



Whole wheat flour, water,  
brown sugar ...

# Color and Texture and Whole Grains



**Wheat flour**, water,  
high fructose corn syrup,  
molasses, wheat bran ...

- Color is not an indication of a whole grain—nor is a grainy texture.
- Bread can be brown and/or grainy because of molasses, caramel color, or other added ingredients.
- Read the ingredient statement to see if the product is **WHOLE** grain.

# Whole Grain Tips for “Picky” Eaters

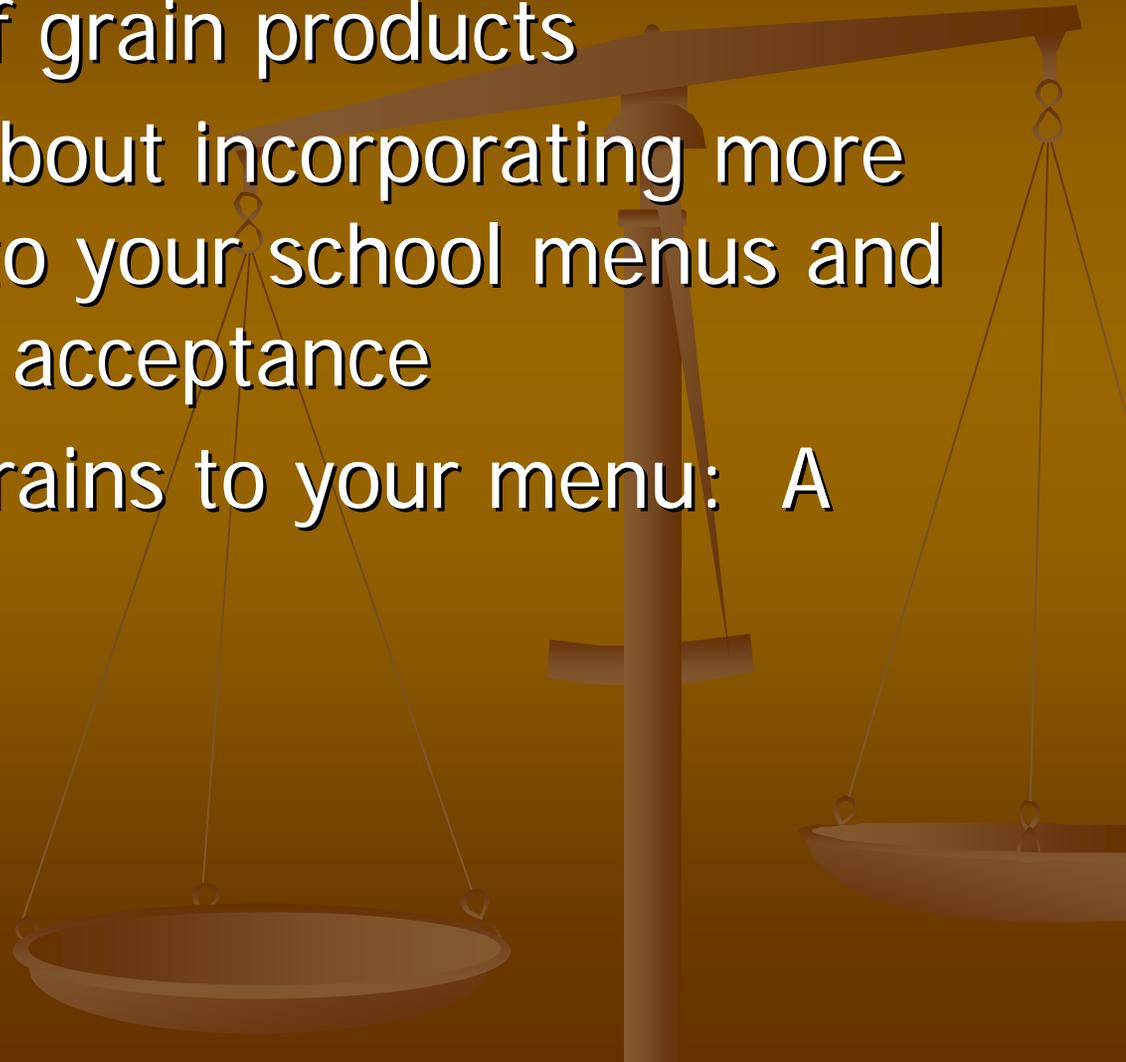
## “Sneak” Whole Grains into Everyday Foods:

- Whole wheat flour or oat flour for up to half the flour in flour-based recipes
- Crumbs from whole grain crackers or bread in meatloaf or hamburgers
- Rolled oats or crushed, unsweetened cereal made with whole grain as breading
- Barley, brown rice or bulgur wheat in soups, stews, casseroles, or stir-fries



# Activities

- Label reading of grain products
- Brainstorming about incorporating more whole grains into your school menus and gaining student acceptance
- Adding whole grains to your menu: A quick lesson



**For each day, and each menu criteria, *a child must have the opportunity to select a meal that meets all the criteria.***

- For example, if there are two separate menus offered and one is used to meet the whole grain requirement and the other is not, you will not meet the whole grain requirement for the challenge. Meeting the criteria with some foods from one meal and some foods from the other is not acceptable. Remember, a child must have the opportunity to select all the HealthierUS School Challenge foods from a reimbursable meal.

