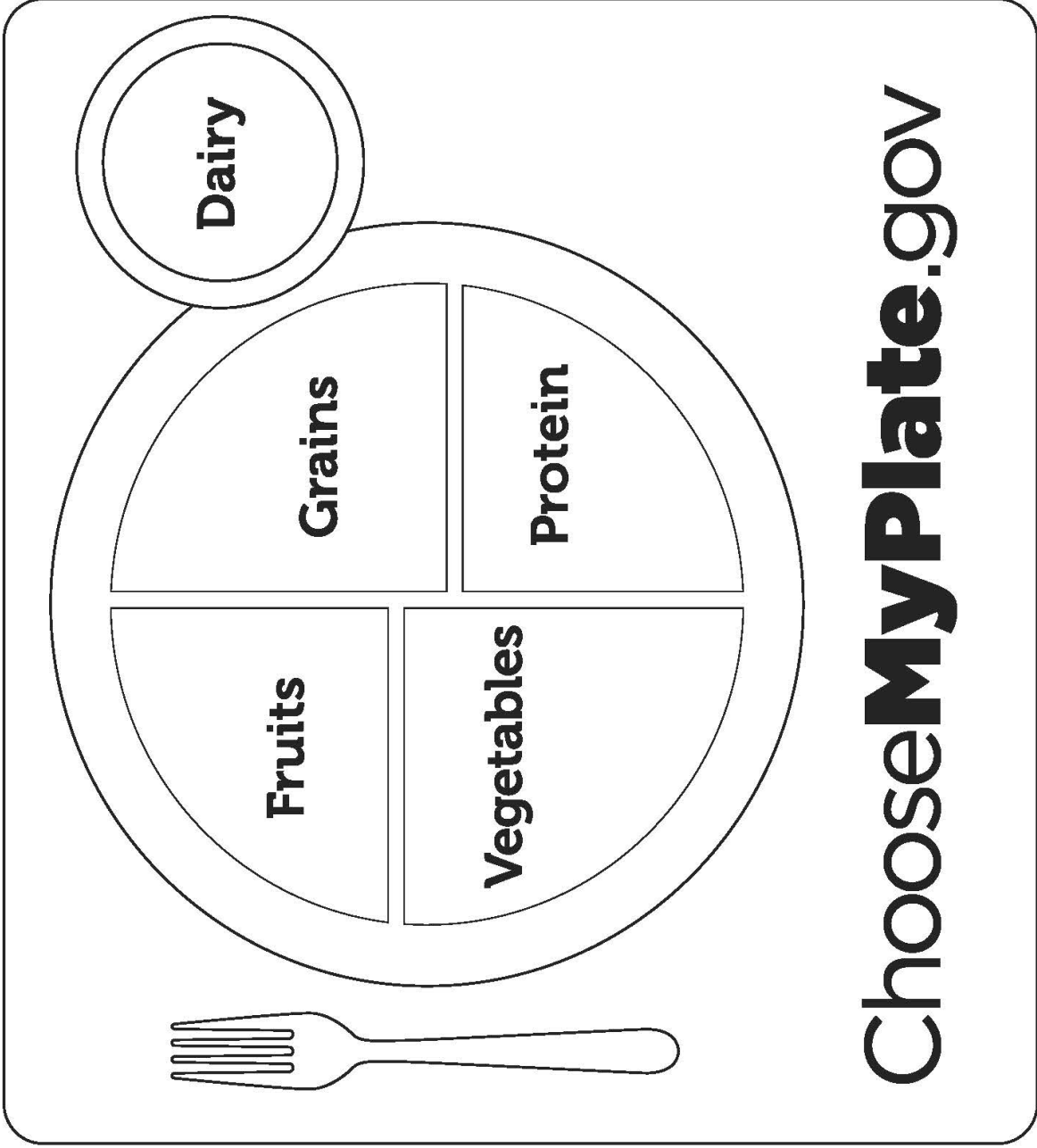


Nutrition

The items with an asterisk (*) are related to the learning activities that will take place on the field trip.

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10 tips

Nutrition Education Series

choose MyPlate

10 tips to a great plate



Making food choices for a healthy lifestyle can be as simple as using these 10 Tips.

Use the ideas in this list to *balance your calories*, to choose foods to *eat more often*, and to cut back on foods to *eat less often*.

1 balance calories

Find out how many calories YOU need for a day as a first step in managing your weight. Go to www.ChooseMyPlate.gov to find your calorie level. Being physically active also helps you balance calories.

2 enjoy your food, but eat less

Take the time to fully enjoy your food as you eat it. Eating too fast or when your attention is elsewhere may lead to eating too many calories. Pay attention to hunger and fullness cues before, during, and after meals. Use them to recognize when to eat and when you've had enough.



3 avoid oversized portions

Use a smaller plate, bowl, and glass. Portion out foods before you eat. When eating out, choose a smaller size option, share a dish, or take home part of your meal.

4 foods to eat more often

Eat more vegetables, fruits, whole grains, and fat-free or 1% milk and dairy products. These foods have the nutrients you need for health—including potassium, calcium, vitamin D, and fiber. Make them the basis for meals and snacks.



5 make half your plate fruits and vegetables

Choose red, orange, and dark-green vegetables like tomatoes, sweet potatoes, and broccoli, along with other vegetables for your meals. Add fruit to meals as part of main or side dishes or as dessert.

6 switch to fat-free or low-fat (1%) milk

They have the same amount of calcium and other essential nutrients as whole milk, but fewer calories and less saturated fat.



7 make half your grains whole grains

To eat more whole grains, substitute a whole-grain product for a refined product—such as eating whole-wheat bread instead of white bread or brown rice instead of white rice.

8 foods to eat less often

Cut back on foods high in solid fats, added sugars, and salt. They include cakes, cookies, ice cream, candies, sweetened drinks, pizza, and fatty meats like ribs, sausages, bacon, and hot dogs. Use these foods as occasional treats, not everyday foods.

9 compare sodium in foods

Use the Nutrition Facts label to choose lower sodium versions of foods like soup, bread, and frozen meals. Select canned foods labeled "low sodium," "reduced sodium," or "no salt added."



10 drink water instead of sugary drinks

Cut calories by drinking water or unsweetened beverages. Soda, energy drinks, and sports drinks are a major source of added sugar, and calories, in American diets.



Go to www.ChooseMyPlate.gov for more information.

DG TipSheet No. 1

June 2011

USDA is an equal opportunity provider and employer

MyPyramid

Food Intake Patterns

The suggested amounts of food to consume from the basic food groups, subgroups, and oils to meet recommended nutrient intakes at 12 different calorie levels. Nutrient and energy contributions from each group are calculated according to the nutrient-dense forms of foods in each group (e.g., lean meats and fat-free milk). The table also shows the discretionary calorie allowance that can be accommodated within each calorie level, in addition to the suggested amounts of nutrient-dense forms of foods in each group.

Daily Amount of Food From Each Group												
Calorie Level ¹	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	2,600	2,800	3,000	3,200
Fruits ²	1 cup	1 cup	1.5 cups	1.5 cups	1.5 cups	2 cups	2 cups	2 cups	2 cups	2.5 cups	2.5 cups	2.5 cups
Vegetables ³	1 cup	1.5 cups	1.5 cups	2 cups	2.5 cups	2.5 cups	3 cups	3 cups	3.5 cups	3.5 cups	4 cups	4 cups
Grains ⁴	3 oz-eq	4 oz-eq	5 oz-eq	5 oz-eq	6 oz-eq	6 oz-eq	7 oz-eq	8 oz-eq	9 oz-eq	10 oz-eq	10 oz-eq	10 oz-eq
Meat and Beans ⁵	2 oz-eq	3 oz-eq	4 oz-eq	5 oz-eq	5 oz-eq	5.5 oz-eq	6 oz-eq	6.5 oz-eq	6.5 oz-eq	7 oz-eq	7 oz-eq	7 oz-eq
Milk ⁶	2 cups	2 cups	2 cups	3 cups	3 cups	3 cups	3 cups	3 cups	3 cups	3 cups	3 cups	3 cups
Oils ⁷	3 tsp	4 tsp	4 tsp	5 tsp	5 tsp	6 tsp	6 tsp	7 tsp	8 tsp	8 tsp	10 tsp	11 tsp
Discretionary calorie allowance ⁸	165	171	171	132	195	267	290	362	410	426	512	648

1 **Calorie Levels** are set across a wide range to accommodate the needs of different individuals. The attached table "Estimated Daily Calorie Needs" can be used to help assign individuals to the food intake pattern at a particular calorie level.

2 **Fruit Group** includes all fresh, frozen, canned, and dried fruits and fruit juices. In general, 1 cup of fruit or 100% fruit juice, or 1/2 cup of dried fruit can be considered as 1 cup from the fruit group.

3 **Vegetable Group** includes all fresh, frozen, canned, and dried vegetables and vegetable juices. In general, 1 cup of raw or cooked vegetables or vegetable juice, or 2 cups of raw leafy greens can be considered as 1 cup from the vegetable group.

Vegetable Subgroup Amounts are Per Week												
Calorie Level	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	2,600	2,800	3,000	3,200
Dark green veg.	1 c/wk	1.5 c/wk	1.5 c/wk	2 c/wk	3 c/wk	3 c/wk	3 c/wk	3 c/wk	3 c/wk	3 c/wk	3 c/wk	3 c/wk
Orange veg.	.5 c/wk	1 c/wk	1 c/wk	1.5 c/wk	2 c/wk	2 c/wk	2 c/wk	2 c/wk	2.5 c/wk	2.5 c/wk	2.5 c/wk	2.5 c/wk
Legumes	.5 c/wk	1 c/wk	1 c/wk	2.5 c/wk	3 c/wk	3 c/wk	3 c/wk	3 c/wk	3.5 c/wk	3.5 c/wk	3.5 c/wk	3.5 c/wk
Starchy veg.	1.5 c/wk	2.5 c/wk	2.5 c/wk	2.5 c/wk	3 c/wk	3 c/wk	6 c/wk	6 c/wk	7 c/wk	7 c/wk	9 c/wk	9 c/wk
Other veg.	3.5 c/wk	4.5 c/wk	4.5 c/wk	5.5 c/wk	6.5 c/wk	6.5 c/wk	7 c/wk	7 c/wk	8.5 c/wk	8.5 c/wk	10 c/wk	10 c/wk

4 **Grains Group** includes all foods made from wheat, rice, oats, cornmeal, barley, such as bread, pasta, oatmeal, breakfast cereals, tortillas, and grits. In general, 1 slice of bread, 1 cup of ready-to-eat cereal, or 1/2 cup of cooked rice, pasta, or cooked cereal can be considered as 1 ounce equivalent from the grains group. **At least half of all grains consumed should be whole grains.**

5 **Meat & Beans Group** in general, 1 ounce of lean meat, poultry, or fish, 1 egg, 1 Tbsp. peanut butter, 1/4 cup cooked dry beans, or 1/2 ounce of nuts or seeds can be considered as 1 ounce equivalent from the meat and beans group.

6 Milk Group includes all fluid milk products and foods made from milk that retain their calcium content, such as yogurt and cheese. Foods made from milk that have little to no calcium, such as cream cheese, cream, and butter, are not part of the group. Most milk group choices should be fat-free or low-fat. In general, 1 cup of milk or yogurt, 1 1/2 ounces of natural cheese, or 2 ounces of processed cheese can be considered as 1 cup from the milk group.

7 Oils include fats from many different plants and from fish that are liquid at room temperature, such as canola, corn, olive, soybean, and sunflower oil. Some foods are naturally high in oils, like nuts, olives, some fish, and avocados. Foods that are mainly oil include mayonnaise, certain salad dressings, and soft margarine.

8 Discretionary Calorie Allowance is the remaining amount of calories in a food intake pattern after accounting for the calories needed for all food groups—using forms of foods that are fat-free or low-fat and with no added sugars.

Estimated Daily Calorie Needs

To determine which food intake pattern to use for an individual, the following chart gives an estimate of individual calorie needs. The calorie range for each age/sex group is based on physical activity level, from sedentary to active.

	Calorie Range	
	Sedentary	Active
Children		
2–3 years	1,000	1,400
Females		
4–8 years	1,200	1,800
9–13	1,600	2,200
14–18	1,800	2,400
19–30	2,000	2,400
31–50	1,800	2,200
51+	1,600	2,200
Males		
4–8 years	1,400	2,000
9–13	1,800	2,600
14–18	2,200	3,200
19–30	2,400	3,000
31–50	2,200	3,000
51+	2,000	2,800

Sedentary means a lifestyle that includes only the light physical activity associated with typical day-to-day life.

Active means a lifestyle that includes physical activity equivalent to walking more than 3 miles per day at 3 to 4 miles per hour, in addition to the light physical activity associated with typical day-to-day life.



MyPyramid Food Intake Pattern Calorie Levels

MyPyramid assigns Individuals to a calorie level based on their sex, age, and activity level.

The chart below identifies the calorie levels for males and females by age and activity level. Calorie levels are provided for each year of childhood, from 2-18 years, and for adults in 5-year increments.

Activity level	MALES			Activity level	FEMALES		
	Sedentary*	Mod. active*	Active*		Sedentary*	Mod. active*	Active*
AGE				AGE			
2	1000	1000	1000	2	1000	1000	1000
3	1000	1400	1400	3	1000	1200	1400
4	1200	1400	1600	4	1200	1400	1400
5	1200	1400	1600	5	1200	1400	1600
6	1400	1600	1800	6	1200	1400	1600
7	1400	1600	1800	7	1200	1600	1800
8	1400	1600	2000	8	1400	1600	1800
9	1600	1800	2000	9	1400	1600	1800
10	1600	1800	2200	10	1400	1800	2000
11	1800	2000	2200	11	1600	1800	2000
12	1800	2200	2400	12	1600	2000	2200
13	2000	2200	2600	13	1600	2000	2200
14	2000	2400	2800	14	1800	2000	2400
15	2200	2600	3000	15	1800	2000	2400
16	2400	2800	3200	16	1800	2000	2400
17	2400	2800	3200	17	1800	2000	2400
18	2400	2800	3200	18	1800	2000	2400
19-20	2600	2800	3000	19-20	2000	2200	2400
21-25	2400	2800	3000	21-25	2000	2200	2400
26-30	2400	2600	3000	26-30	1800	2000	2400
31-35	2400	2600	3000	31-35	1800	2000	2200
36-40	2400	2600	2800	36-40	1800	2000	2200
41-45	2200	2600	2800	41-45	1800	2000	2200
46-50	2200	2400	2800	46-50	1800	2000	2200
51-55	2200	2400	2800	51-55	1600	1800	2200
56-60	2200	2400	2600	56-60	1600	1800	2200
61-65	2000	2400	2600	61-65	1600	1800	2000
66-70	2000	2200	2600	66-70	1600	1800	2000
71-75	2000	2200	2600	71-75	1600	1800	2000
76 and up	2000	2200	2400	76 and up	1600	1800	2000

*Calorie levels are based on the Estimated Energy Requirements (EER) and activity levels from the Institute of Medicine Dietary Reference Intakes Macronutrients Report, 2002.

SEDENTARY = less than 30 minutes a day of moderate physical activity in addition to daily activities.

MOD. ACTIVE = at least 30 minutes up to 60 minutes a day of moderate physical activity in addition to daily activities.

ACTIVE = 60 or more minutes a day of moderate physical activity in addition to daily activities.



1 - 2005 Nutrition Guidelines – a new approach to the food pyramid

Source: <http://www.nutrition.gov/>

The sixth edition of *Dietary Guidelines for Americans* places stronger emphasis on reducing calorie consumption and increasing physical activity. This joint project of the Departments of Health and Human Services and Agriculture is the latest of the five-year reviews required by federal law. It is the basis of federal food programs and nutrition education programs and supports the nutrition and physical fitness pillars of President Bush's *HealthierUS* Initiative.

The 2005 *Dietary Guidelines* and consumer brochure are available at www.healthierus.gov/dietaryguidelines.

Key Recommendations for the General Population

ADEQUATE NUTRIENTS WITHIN CALORIE NEEDS

- Consume a variety of nutrient-dense foods and beverages within and among the basic food groups while choosing foods that limit the intake of saturated and trans fats, cholesterol, added sugars, salt, and alcohol.
- Meet recommended intakes within energy needs by adopting a balanced eating pattern, such as the U.S. Department of Agriculture (USDA) Food Guide or the Dietary Approaches to Stop Hypertension (DASH) Eating Plan.

WEIGHT MANAGEMENT

- To maintain body weight in a healthy range, balance calories from foods and beverages with calories expended.
- To prevent gradual weight gain over time, make small decreases in food and beverage calories and increase physical activity.

PHYSICAL ACTIVITY

- Engage in regular physical activity and reduce sedentary activities to promote health, psychological well-being, and a healthy body weight.
 - To reduce the risk of chronic disease in adulthood: Engage in at least 30 minutes of moderate-intensity physical activity, above usual activity, at work or home on most days of the week.
 - For most people, greater health benefits can be obtained by engaging in physical activity of more vigorous intensity or longer duration.
 - To help manage body weight and prevent gradual, unhealthy body weight gain in adulthood: Engage in approximately 60 minutes of moderate- to vigorous-intensity activity on most days of the week while not exceeding caloric intake requirements.
 - To sustain weight loss in adulthood: Participate in at least 60 to 90 minutes of daily moderate-intensity physical activity while not exceeding caloric intake requirements. Some people may need to consult with a healthcare provider before participating in this level of activity.
- Achieve physical fitness by including cardiovascular conditioning, stretching exercises for flexibility, and resistance exercises or calisthenics for muscle strength and endurance.

FOOD GROUPS TO ENCOURAGE

- Consume a sufficient amount of fruits and vegetables while staying within energy needs. Two cups of fruit and 2½ cups of vegetables per day are recommended for a reference 2,000-calorie intake, with higher or lower amounts depending on the calorie level.
- Choose a variety of fruits and vegetables each day. In particular, select from all five vegetable subgroups (dark green, orange, legumes, starchy vegetables, and other vegetables) several times a week.
- Consume 3 or more ounce-equivalents of whole-grain products per day, with the rest of the recommended grains coming from enriched or whole-grain products. In general, at least half the grains should come from whole grains.
- Consume 3 cups per day of fat-free or low-fat milk or equivalent milk products.

FATS

- Consume less than 10 percent of calories from saturated fatty acids and less than 300 mg/day of cholesterol, and keep trans fatty acid consumption as low as possible.
- Keep total fat intake between 20 to 35 percent of calories, with most fats coming from sources of polyunsaturated and monounsaturated fatty acids, such as fish, nuts, and vegetable oils.
- When selecting and preparing meat, poultry, dry beans, and milk or milk products, make choices that are lean, low-fat, or fat-free.
- Limit intake of fats and oils high in saturated and/or trans fatty acids, and choose products low in such fats and oils.

CARBOHYDRATES

- Choose fiber-rich fruits, vegetables, and whole grains often.
- Choose and prepare foods and beverages with little added sugars or caloric sweeteners, such as amounts suggested by the USDA Food Guide and the DASH Eating Plan.
- Reduce the incidence of dental caries by practicing good oral hygiene and consuming sugar- and starch-containing foods and beverages less frequently.

SODIUM AND POTASSIUM

- Consume less than 2,300 mg (approximately 1 teaspoon of salt) of sodium per day.
- Choose and prepare foods with little salt. At the same time, consume potassium-rich foods, such as fruits and vegetables.

ALCOHOLIC BEVERAGES

- Those who choose to drink alcoholic beverages should do so sensibly and in moderation—defined as the consumption of up to one drink per day for women and up to two drinks per day for men.
- Alcoholic beverages should not be consumed by some individuals, including those who cannot restrict their alcohol intake, women of childbearing age who may become pregnant, pregnant and lactating women, children and adolescents, individuals taking medications that can interact with alcohol, and those with specific medical conditions.

- Alcoholic beverages should be avoided by individuals engaging in activities that require attention, skill, or coordination, such as driving or operating machinery.

FOOD SAFETY

- To avoid microbial foodborne illness:
 - Clean hands, food contact surfaces, and fruits and vegetables. Meat and poultry should not be washed or rinsed.
 - Separate raw, cooked, and ready-to-eat foods while shopping, preparing, or storing foods.
 - Cook foods to a safe temperature to kill microorganisms.
 - Chill (refrigerate) perishable food promptly and defrost foods properly.
 - Avoid raw (unpasteurized) milk or any products made from unpasteurized milk, raw or partially cooked eggs or foods containing raw eggs, raw or undercooked meat and poultry, unpasteurized juices, and raw sprouts.

Note: The Dietary Guidelines for Americans 2005 contains additional recommendations for specific populations. The full document is available at www.healthierus.gov/dietaryguidelines.

EDIBLE PLANT PARTS

Source: University of Illinois Extension
(<http://www.urbanext.uiuc.edu/gpe/case1/clf-ans.html>)

*Gee that was good!
Was it a root, stem, leaf, flower, seed or fruit
that I ate for lunch?*



What parts of the plant do we eat?

Here's the list of edible plant parts that Sprout discovered. Did you eat any of these yesterday?

ROOTS

carrots
beets
turnips
rutabagas

FLOWERS

broccoli
cauliflower
squash blossoms
nasturtiums

SEEDS

lima beans
peas
green beans
sunflower seeds
black-eyed peas
pinto beans

LEAVES

kale
lettuce
spinach
cabbage
collards
mustard

FRUITS

tomato
apple
cucumber
strawberries
blueberries

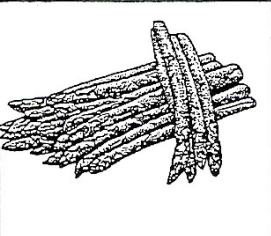
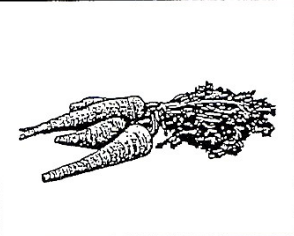
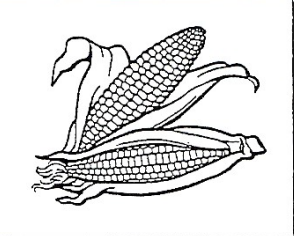

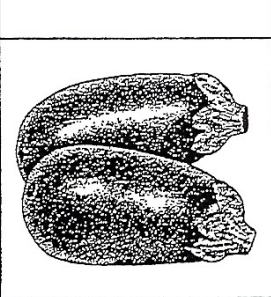
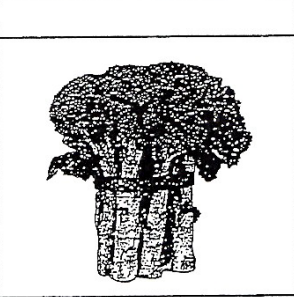
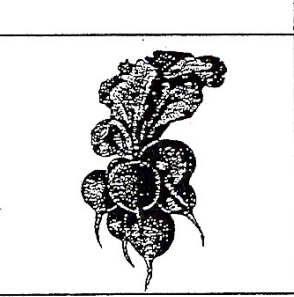
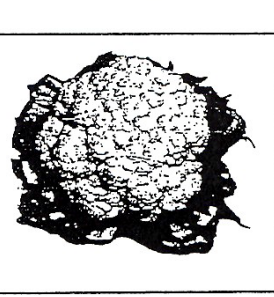
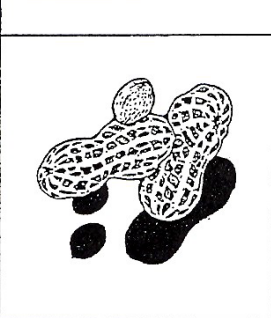
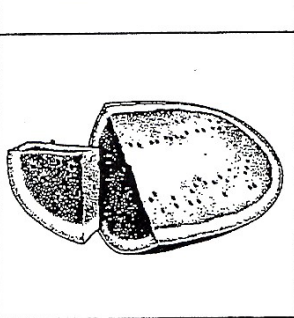
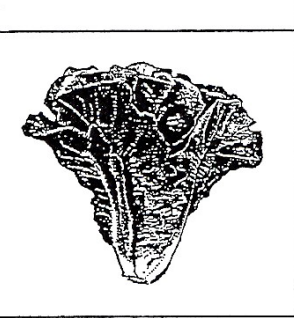
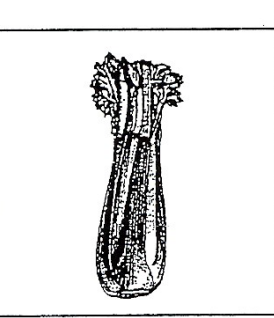
STEMS

celery
rhubarb
onions

Edible Plant Parts

We eat many parts of plants. See if you can match the vegetable to the plant part listed in the box. You will use some of the words more than once.

fruit	leaf	flower
root	stem	seed

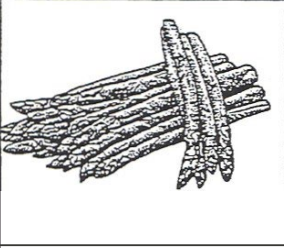
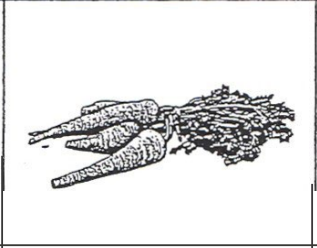
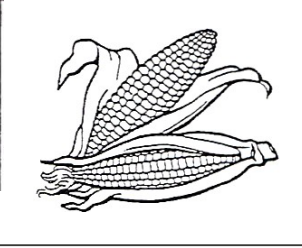

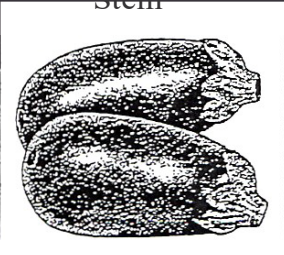
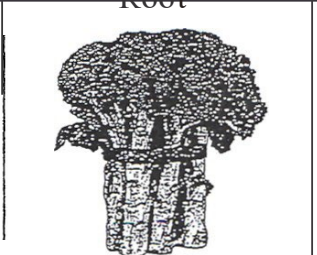



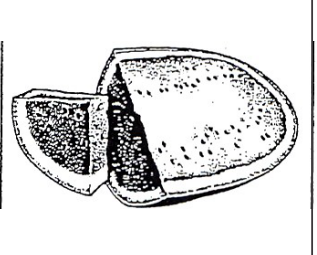


Bonus:

What can you eat that is made from wheat seeds? _____

Edib!e Plant Parts

We eat many parts of plants. See if you can match the vegetable to the plant part listed in the box. You will use each word more than once.

- | | | |
|-------|------|--------|
| fruit | leaf | flower |
| root | stem | seed |

			
Stem	Root	Seed	Leaf
			
Fruit	Flower	Root	Flower
			
Seed	Fruit	Leaf	Stem

Bonus:

What can you eat that *is* made from wheat seeds? br e a d , c e r e a l , e t c .

2

Fruit & Veggie tracker!

Have your Mom or Dad help you count the number of cups of **fruits & veggies**, in any form: **fresh, frozen, canned, dried or 100% juice** that you eat each day. At the end of each week total them up. Each time you increase your weekly eating total of **fruits & veggies** by one or more, you can color a star below.

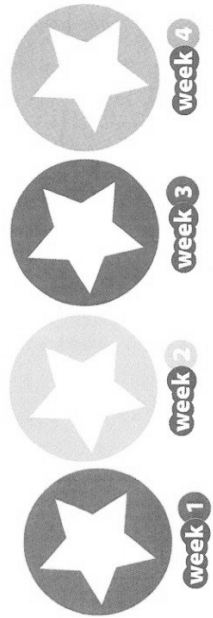
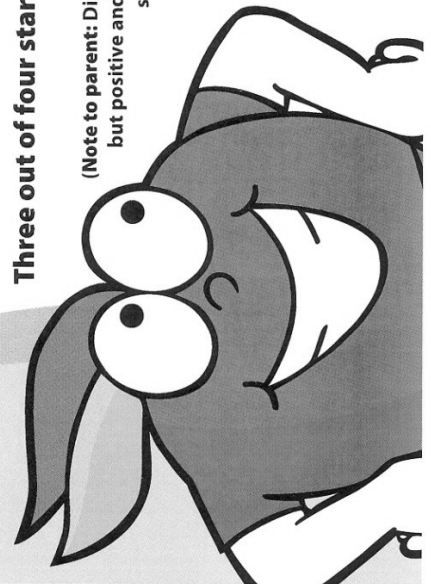
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Week 1	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/>
Week 2	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/>
Week 3	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/>
Week 4	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/> daily total	<input type="text"/>



Kids Age	Cup Recommendation
2-3	2-3 cups/day
4-13	3-5 cups/day

Three out of four stars will earn you a Fruit & Veggie Color Champions™ Certificate and a reward from Mom or Dad!

(Note to parent: Discuss a suitable reward with your child. It should be something simple, but positive and inspiring. Write the reward on the certificate [page 4] for your child to see, but don't sign it or give it to them until the challenge is completed.)











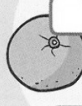










3

Weekly shopping planner!

Which **fruits & veggies** are your favorites? Did you know you can have them frozen, canned, dried and as 100% juice as well as fresh? Help your Mom check off the **fruits & veggies** you'd like to eat this week. Try something new to make sure you become one of the **Fruit & Veggie Color Champions™!**


















fruits

draw it here!

									
grapefruit	strawberry	mango	kiwifruit	green grapes	apple	pineapple	orange	cranberries	other fruit
									
peaches	bananas	watermelon	avocado	plums	pear	blackberries	pear	blueberries	

veggies

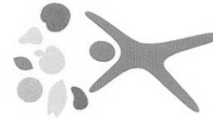
draw it here!

									
tomato	potatoes	corn	leafy greens & spinach	beets	broccoli	onions	peppers	asparagus	other veggie
									
carrots	artichoke	mushrooms	cabbage	cauliflower	zucchini	winter squash			

mom's shopping list

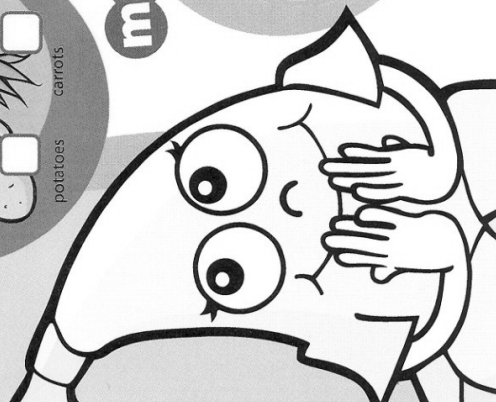
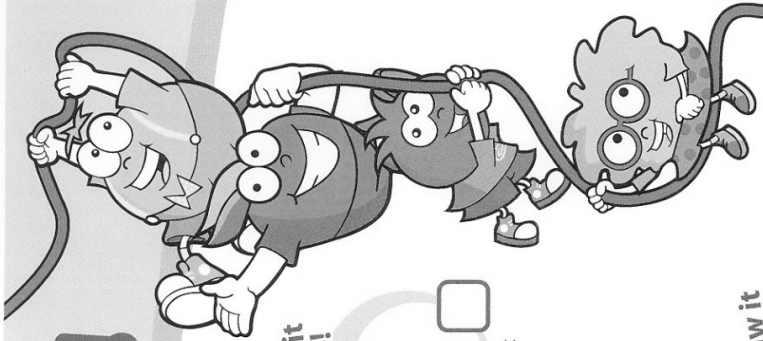
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Want to try something you don't see? Add it to Mom's list as well!

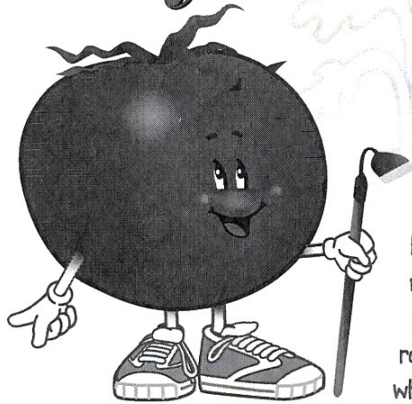


fruits & veggies
more matters™
fruitsandveggiesmorematters.org

Fruits & veggies in all forms count: fresh, frozen, canned, dried or 100% juice!



Terry Tomato's Edible Plant Parts



Hi! I'm Terry Tomato, and I love gardening. Gardening is a fun way to learn more about plants, especially fruits and vegetables. Did you know that when you eat fruits and vegetables you're eating edible plant parts like flowers, roots, and seeds? Have fun working on this activity sheet and finding out which plant parts you love to eat!

1. List your three favorite fruits and your three favorite vegetables in the spaces below.

My three favorite fruits are:

1. _____
2. _____
3. _____

My three favorite vegetables are:

1. _____
2. _____
3. _____

2. Now see if you can find your favorite fruits and vegetables in the lists below. When you find them, circle them.

FRUITS

Apples
Apricots
Avocados
Bananas
Bell Peppers
Blackberries
Blueberries
Cantaloupe
Cherries
Cranberries
Dates
Eggplant
Figs
Grapes
Kiwifruit
Kumquats
Lemons
Mangos
Oranges
Papayas

More FRUITS

Peaches
Pears
Persimmons
Pineapple
Plums
Pomegranates
Pumpkin
Raspberries
Strawberries
Squash
Tangelos
Tangerines
Tomatoes
Watermelon

FLOWERS

Artichokes
Broccoli
Cauliflower

LEAVES

Basil
Brussels sprouts
Beetgreens
Cabbage
Chard
Cilantro
Endive
Kale
Lettuce
Mustard greens
Onions
Parsley
Spinach
Turnip greens
Watercress

ROOTS

Beets
Carrots
Parsnips
Radishes
Rutabagas
Sweet potatoes
Turnips

SEEDS

Black beans
Corn
Lima beans
Kidney beans
Peas
Pumpkin seeds
Sunflower seeds

SEED PODS

Chili peppers
Green beans
Okra
Snap pea pods
Snow pea pods
Wax beans

STEMS

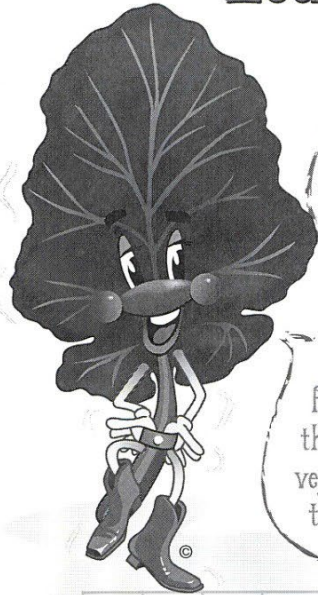
Asparagus
Celery
Leeks
Green onions
Rhubarb

TUBERS

Potatoes
Yams

3. Are you surprised to learn how many different plant parts you like to eat? Which do you like best — flowers, fruits, leaves, roots, seeds, seed pods, stems or tubers? _____

Kurt & Casey Collard Greens' Leafy Greens Word Search



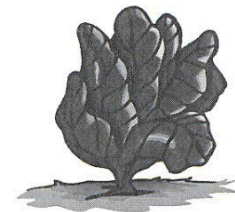
Howdy, partner
My name is Kurt, and here, in the red boots, is my dance partner Casey. When we're not out dancing, we love to create word search puzzles. We created this leafy greens word search puzzle just for you! Have fun finding words that describe these delicious vegetables and the nutrients they contain.

All the words in the list below are in the puzzle. You can find them spelled horizontally, vertically, diagonally, forward or backward...but they will always be in a straight line. Circle each word or phrase.



F	O	O	D	G	K	O	D	S	T	Z	X	S	S	K
I	O	F	O	L	I	C	A	C	I	D	W	N	N	M
B	N	J	C	U	F	L	N	W	S	F	H	E	E	U
E	D	O	Q	A	A	D	D	A	V	C	Q	E	E	S
R	K	I	R	D	L	Y	E	R	A	P	W	R	R	T
G	N	Y	U	I	V	C	L	N	A	B	O	G	G	A
S	N	E	E	R	G	P	I	N	R	U	T	D	Y	R
I	N	R	Q	N	Y	P	O	U	T	C	V	R	F	D
T	O	T	S	Z	S	P	N	R	M	N	I	A	A	G
A	R	U	G	U	L	A	G	E	F	I	T	L	E	R
G	V	N	X	P	D	X	R	W	F	M	A	L	L	E
E	C	U	T	T	E	L	E	N	I	A	M	O	R	E
T	T	S	U	X	Z	L	E	E	X	T	I	C	T	N
E	L	A	K	W	M	G	N	V	K	I	N	A	M	S
R	I	W	F	D	R	D	S	X	B	V	A	Z	E	D

- Spinach
- Romaine Lettuce
- Collard Greens
- Arugula
- Dandelion Greens
- Turnip Greens
- Kale
- Mustard Greens
- Calcium
- Fiber
- Iron
- Vitamin A
- Vitamin C
- Folic Acid
- Raw
- Salad
- Leafy Greens





Lesson 3:

Get Your Calcium-Rich Foods

Lesson Highlights

Objectives

Students will:

- Identify foods in the milk group.
- Identify the health and nutrition benefits from eating foods rich in calcium.
- Analyze food labels to determine which foods contain the most calcium.
- Compare food labels to determine which calcium-rich foods are lowest in fat.

Curriculum Connections:

Math, Health, Science

Student Skills Developed:

- Reading charts
- Thinking skills – making comparisons
- Math computation

Materials:

- *What's on the Label?* handout for each student
- *What's the Score?* worksheet for each student
- Samples of fat-free, 1%, 2%, and whole milk
- Four plastic glasses (for each student trying the taste test)
- Marker

Activity: What's on the Label?

Make the following points about the health benefits of calcium-rich foods:

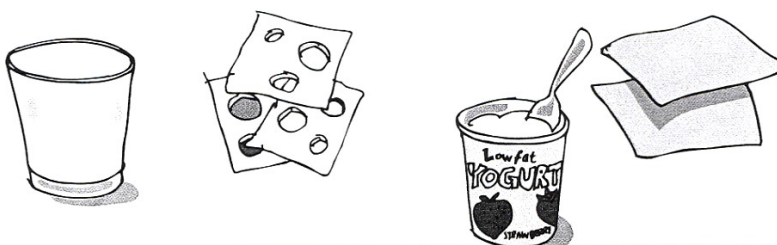
- Diets that are rich in lowfat and fat-free milk and milk products help build and maintain bone mass.
- Students their age especially need to drink milk, because this is when their bone mass is being built.

Now pass out *What's on the Label?* handout. Tell students that food labels give them important information about the nutritional value of the food. Discuss the following information with the students:

- Ask students to look for the words "Serving Size" on the labels. In the case of milk, the serving size is 8 fluid ounces – 1 cup.
- Next, have students find first the number of calories in a single serving of the food. Each of the first four labels is for an 8 fluid ounce glass of milk; yet they have a very different number of calories per serving. Why? Because of the fat and sugar content. Look at the calorie content for 1% chocolate milk. It is higher than the calorie content for whole milk. The extra calories come from sugar and chocolate.
- At the bottom of the food label, students will find some numbers followed by percent signs. This is where calcium is listed. Use the % Daily Value (DV) column when possible: 5% DV or less is low, 20% DV or more is high.

Pass out the *What's the Score?* worksheet. Have students complete the chart at the top of the page, filling in numbers from the four nutrition labels for milk. Later, check students' answers.

Next, have students use *What's on the Label?* to help them complete the questions on *What's the Score?* Check student answers and discuss.



Name: _____

What's on the Label?

Milk fat-free

Nutrition Facts	
Serving Size 8 fl oz (245g)	
Servings Per Container 8	
Amount Per Serving	
Calories 90	Calories from Fat 0
%Daily Value*	
Total Fat 0g	0 %
Saturated Fat 0g	0 %
Trans Fat 0g	0 %
Cholesterol < 5mg	0 %
Sodium 130mg	5 %
Total Carbohydrate 12g	4 %
Dietary Fiber 0g	0 %
Sugars 12g	
Protein 8g	
Vitamin A 10% • Vitamin C 4%	
Calcium 30% • Iron 0%	
* Percent Daily Values are based on a 2,000 calorie diet.	

Milk 1%, chocolate

Nutrition Facts	
Serving Size 8 fl oz (245g)	
Servings Per Container 8	
Amount Per Serving	
Calories 170	Calories from Fat 20
%Daily Value*	
Total Fat 2.5g	4 %
Saturated Fat 1.5g	8 %
Trans Fat 0g	0 %
Cholesterol 5mg	2 %
Sodium 190mg	8 %
Total Carbohydrate 29g	10 %
Dietary Fiber 1g	5 %
Sugars 27g	
Protein 8g	
Vitamin A 10% • Vitamin C 6%	
Calcium 30% • Iron 4%	
* Percent Daily Values are based on a 2,000 calorie diet.	

Milk 2%

Nutrition Facts	
Serving Size 8 fl oz (245g)	
Servings Per Container 8	
Amount Per Serving	
Calories 130	Calories from Fat 45
%Daily Value*	
Total Fat 5g	8 %
Saturated Fat 3g	15 %
Trans Fat 0g	0 %
Cholesterol 20mg	7 %
Sodium 125mg	5 %
Total Carbohydrate 13g	4 %
Dietary Fiber 0g	0 %
Sugars 12g	
Protein 8g	
Vitamin A 10% • Vitamin C 4%	
Calcium 30% • Iron 0%	
* Percent Daily Values are based on a 2,000 calorie diet.	

Milk whole

Nutrition Facts	
Serving Size 8 fl oz (245g)	
Servings Per Container 8	
Amount Per Serving	
Calories 150	Calories from Fat 70
%Daily Value*	
Total Fat 8g	12 %
Saturated Fat 5g	25 %
Trans Fat 0g	0 %
Cholesterol 35mg	11 %
Sodium 125mg	5 %
Total Carbohydrate 12g	4 %
Dietary Fiber 0g	0 %
Sugars 12g	
Protein 8g	
Vitamin A 6% • Vitamin C 4%	
Calcium 30% • Iron 0%	
* Percent Daily Values are based on a 2,000 calorie diet.	

Vanilla ice cream

Nutrition Facts	
Serving Size 1/2 cup (65g)	
Servings Per Container 14	
Amount Per Serving	
Calories 140	Calories from Fat 70
%Daily Value*	
Total Fat 7g	11 %
Saturated Fat 4.5g	23 %
Trans Fat 0g	0 %
Cholesterol 20mg	6 %
Sodium 40mg	2 %
Total Carbohydrate 15g	5 %
Dietary Fiber 0g	0 %
Sugars 15g	
Protein 3g	
Vitamin A 4% • Vitamin C 0%	
Calcium 10% • Iron 0%	
* Percent Daily Values are based on a 2,000 calorie diet.	

American cheese

Nutrition Facts	
Serving Size 1 slice (19g)	
Servings Per Container 24	
Amount Per Serving	
Calories 60	Calories from Fat 40
%Daily Value*	
Total Fat 4.5g	7 %
Saturated Fat 2.5g	13 %
Trans Fat 0g	0 %
Cholesterol 15mg	5 %
Sodium 250mg	10 %
Total Carbohydrate 1g	0 %
Dietary Fiber 0g	0 %
Sugars 1g	
Protein 3g	
Vitamin A 4% • Vitamin C 0%	
Calcium 20% • Iron 0%	
* Percent Daily Values are based on a 2,000 calorie diet.	

Fruit-flavored yogurt

Nutrition Facts	
Serving Size 6 ounces (170g)	
Servings Per Container 1	
Amount Per Serving	
Calories 170	Calories from Fat 15
%Daily Value*	
Total Fat 1.5g	2 %
Saturated Fat 1g	5 %
Trans Fat 0g	0 %
Cholesterol 10mg	3 %
Sodium 125mg	5 %
Total Carbohydrate 33g	11 %
Dietary Fiber 0g	0 %
Sugars 30g	
Protein 6g	
Vitamin A 0% • Vitamin C 0%	
Calcium 20% • Iron 0%	
* Percent Daily Values are based on a 2,000 calorie diet.	

Cottage cheese

Nutrition Facts	
Serving Size 1/2 cup (119g)	
Servings Per Container 4	
Amount Per Serving	
Calories 90	Calories from Fat 20
%Daily Value*	
Total Fat 2.5g	4 %
Saturated Fat 1.5g	8 %
Trans Fat 0g	0 %
Cholesterol 15mg	5 %
Sodium 410mg	17 %
Total Carbohydrate 6g	2 %
Dietary Fiber 0g	0 %
Sugars 5g	
Protein 11g	
Vitamin A 4% • Vitamin C 0%	
Calcium 8% • Iron 0%	
* Percent Daily Values are based on a 2,000 calorie diet.	



Name: _____

What's the Score?

Here is a way to compare foods to see which foods are the best choices for you. Answer the questions below for these four foods, using *What's on the Label?*

	Fat-free milk	1% chocolate milk	2% milk	Whole milk
1. What is the serving size for this item?				
2. Is the serving size realistic? (<i>Is this how much you would normally eat/drink?</i>)				
3. How many total calories in one serving?				
4. How many total grams of fat in one serving?				
5. What percent of calcium in one serving?				

Based on this information, which type of milk offers the most calcium with the lowest fat?

Now look at *all* the labels on the page. Answer these questions:

1. If Manuel drinks 8 fluid ounces of 1% chocolate milk and eats 6 ounces of fruit-flavored yogurt, how much calcium has he had? _____

How many grams of fat? _____

2. Which food item on the sheet has the least calcium with the highest amount of fat?

3. Which food item on the sheet has the most calcium with the lowest amount of fat?



Name: _____

What's the Score? Answer Key

Here is a way to compare foods to see which foods are the best choices for you. Answer the questions below for these four foods, using *What's on the Label?*

	Fat-free milk	1% chocolate milk	2% milk	Whole milk
1. What is the serving size for this item?	1 cup (8 fl oz)	1 cup (8 fl oz)	1 cup (8 fl oz)	1 cup (8 fl oz)
2. Is the serving size realistic? <i>(Is this how much you would normally eat/drink?)</i>				
3. How many calories in one serving?	90	170	130	150
4. How many total grams of fat in one serving?	0	2.5	5	8
5. What percentage of calcium in one serving?	30% DV	30% DV	30% DV	30% DV

Based on this information, which type of milk offers the most calcium with the lowest fat?

Answer: Fat-free

Now look at *all* the labels on the page. Answer these questions:

1. If Manuel drinks 8 fluid ounces of 1% chocolate milk and eats 6 ounces of fruit-flavored yogurt, how much calcium has he had? **Answer: 50% DV**

How many grams of fat? **Answer: 4 grams**

2. Which food item on the sheet has the least calcium with the highest amount of fat?

Answer: Vanilla ice cream

3. Which food item on the sheet has the most calcium with the lowest amount of fat?

Answer: Fat-free milk

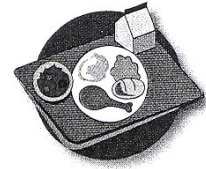


Group Activity: Taste Test

Bring in samples of fat-free, 1%, 2%, and whole milk. With a marker, label four plastic glasses A, B, C, and D. Without showing students what you are doing, pour a small amount of the four types of milk into the glasses. (Prepare one set of glasses for each student participant.)

Now have a student come up to taste each of the four milks. Describe the tastes. Rate each. Repeat with other students trying the taste test.

Later, have students talk about how they can reduce the fat they consume by switching the milk they drink. If they usually drink whole milk, they should switch gradually to 2% milk, then to 1% milk, and finally to fat-free milk.



Lunchroom Link:

Does your school have vending machines? Do they offer milk for sale? If not, perhaps your class could start a campaign to add fat-free or lowfat milk to the choices available in your school vending machines.

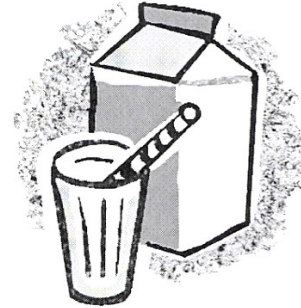
For Growing Bones... Which Milk?

Why Milk?

Check the Nutrient Facts panel on milk cartons to find the benefits. You'll see several nutrients that everyone in your family needs.

- **Calcium and vitamin D** for your child's growing bones and teeth. These same nutrients help your bones stay healthy.
- **Protein** for building a growing body. It also keeps your body in good repair.
- **Vitamin A** for healthy eyes and skin.

Offer milk or water to satisfy thirst. Your child needs plenty of fluids to stay healthy, too.



Whole Milk

Nutrition Facts		
Serving Size 8 fl oz (244g)		
Servings Per Container 1		
Amount Per Serving		
Calories	150	Calories from Fat 70
%Daily Value*		
Total Fat	8g	13 %
Saturated Fat	5g	25 %
Cholesterol	35mg	11 %
Sodium	120mg	5 %
Total Carbohydrate	11g	4 %
Dietary Fiber	0g	0 %
Sugars	12g	
Protein	8g	
Vitamin A	6%	• Vitamin C 4%
Calcium	30%	• Iron 0%

* Percent Daily Values are based on a 2,000 calorie diet.

2% Reduced Fat Milk

Nutrition Facts		
Serving Size 8 fl oz (244g)		
Servings Per Container 1		
Amount Per Serving		
Calories	120	Calories from Fat 40
%Daily Value*		
Total Fat	4.5g	7 %
Saturated Fat	3g	15 %
Cholesterol	20mg	6 %
Sodium	120mg	5 %
Total Carbohydrate	12g	4 %
Dietary Fiber	0g	0 %
Sugars	11g	
Protein	8g	
Vitamin A	10%	• Vitamin C 4%
Calcium	30%	• Iron 0%

* Percent Daily Values are based on a 2,000 calorie diet.

1% Low-fat Milk

Nutrition Facts		
Serving Size 8 fl oz (244g)		
Servings Per Container 1		
Amount Per Serving		
Calories	100	Calories from Fat 25
%Daily Value*		
Total Fat	2.5g	4 %
Saturated Fat	1.5g	8 %
Cholesterol	10mg	3 %
Sodium	125mg	5 %
Total Carbohydrate	12g	4 %
Dietary Fiber	0g	0 %
Sugars	11g	
Protein	8g	
Vitamin A	10%	• Vitamin C 4%
Calcium	30%	• Iron 0%

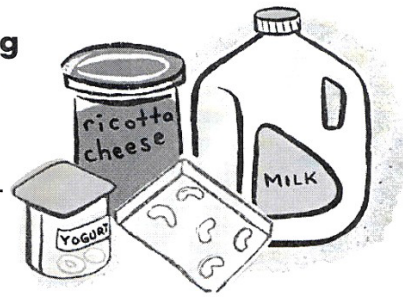
* Percent Daily Values are based on a 2,000 calorie diet.

Which milk would you buy? What's different? What's the same?

Nutrition Facts on milk cartons can help you make choices for your family. Your child will get the same amount of bone-building calcium no matter what type you pick. Low-fat milk has less fat. If you prefer, look for fat-free (skim) milk.

Milk for Kids With Lactose Intolerance

Your child counts on you for the bone-building nutrients in milk. Even if your child is lactose intolerant, you can fit milk products in!



You Can Help Your Child Enjoy Milk.

It's Easy, Try This!

- ❑ **Serve milk with solid foods:** snacks, as well as meals. Solid foods slow digestion, so lactose in milk is easier to handle. *Tip:* These snacks taste good with milk: an oatmeal cookie, cereal, and a banana. Give your child choices.
- ❑ **Pour small cups of milk.** Little amounts are easier to digest. *Tip:* Be sure your child gets enough to equal at least 2 cups of milk during the day.
- ❑ **Offer chocolate milk.** It contains the same nutrients as white milk. But kids like chocolate milk and may be more willing to drink it.



- ❑ **Buy lactose-free milk.** *Tip:* Find it in supermarkets with other milk products.
- ❑ **Offer cheese.** Cheese has milk's nutrients, but less lactose. *Tip:* Try simple "cheesy" foods: toasted cheese sandwich, macaroni and cheese, cheese and crackers.
- ❑ **Try yogurt.** "Friendly" bacteria that give yogurt its unique flavor also help digest lactose. Yogurt has all of milk's nutrients, too. *Tip:* Offer fruit yogurt as a dip for sliced fruit. Your child may like fruit smoothies (made with yogurt), too.



For You, Too!

If you're lactose intolerant, these tips can help you, too. Remember, your bones need calcium that milk provides to stay strong and healthy.

Which Milk is Healthiest?



Nutrition Facts		Calories from Fat 71	
Serving Size: 1 cup (244 g)		% Daily Value*	
Amount Per Serving			
Calories	146		
Total Fat	8g	12%	
Saturated Fat	5g	23%	
Trans Fat			
Cholesterol	24mg	6%	
Sodium	95mg	4%	
Total Carbohydrate	13g	4%	
Dietary Fiber	0g	0%	
Sugars	13g		
Protein	8g		
Vitamin A	5%	Vitamin C	0%
Calcium	28%	Iron	0%

Milk, whole 3.25% milkfat

Nutrition Facts		Calories from Fat 43	
Serving Size: 1 cup (244 g)		% Daily Value*	
Amount Per Serving			
Calories	122		
Total Fat	5g	7%	
Saturated Fat	3g	15%	
Trans Fat			
Cholesterol	20mg	7%	
Sodium	100mg	4%	
Total Carbohydrate	17g	4%	
Dietary Fiber	0g	0%	
Sugars	17g		
Protein	8g		
Vitamin A	9%	Vitamin C	1%
Calcium	29%	Iron	0%

Milk, reduced fat, 2%

Nutrition Facts		Calories from Fat 21	
Serving Size: 1 cup (244 g)		% Daily Value*	
Amount Per Serving			
Calories	102		
Total Fat	2g	4%	
Saturated Fat	2g	6%	
Trans Fat			
Cholesterol	17mg	6%	
Sodium	107mg	4%	
Total Carbohydrate	13g	4%	
Dietary Fiber	0g	0%	
Sugars	13g		
Protein	8g		
Vitamin A	10%	Vitamin C	0%
Calcium	29%	Iron	0%

Milk, lowfat 1% milkfat

Nutrition Facts		Calories from Fat 2	
Serving Size: 1 cup (244 g)		% Daily Value*	
Amount Per Serving			
Calories	83		
Total Fat	0g	0%	
Saturated Fat	0g	1%	
Trans Fat			
Cholesterol	0mg	2%	
Sodium	103mg	4%	
Total Carbohydrate	17g	4%	
Dietary Fiber	0g	0%	
Sugars	17g		
Protein	8g		
Vitamin A	10%	Vitamin C	0%
Calcium	31%	Iron	0%

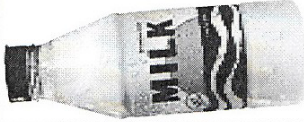
Milk, nonfat, fat free or skim

All milk contains the same essential nutrients

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THINK YOUR DRINK!

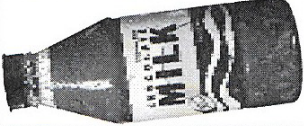
When it comes to NUTRITION, not all drinks are created equal!



MILK LOWFAT 1%

Nutrient	% Daily Value
Calories	100
Total Fat	4%
Total Carbohydrates	4%
Protein	16%
Vitamin A	10%
Vitamin C	2%
Vitamin D	25%
Calcium	30%

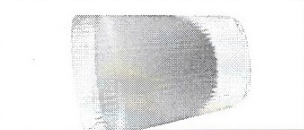
Serving Size: 8 ounces



CHOCOLATE MILK LOWFAT 1%

Nutrient	% Daily Value
Calories	160
Total Fat	4%
Total Carbohydrates (includes 4 tsp added sugar)	10%
Protein	16%
Vitamin A	10%
Vitamin C	2%
Vitamin D	25%
Calcium	30%


Serving Size: 8 ounces



100% ORANGE JUICE

Nutrient	% Daily Value
Calories	110
Total Fat	0%
Total Carbohydrates	8%
Protein	0%
Vitamin A	2%
Vitamin C	150%
Vitamin D	0%
Calcium	2%


Serving Size: 8 ounces



FRUIT PUNCH

Nutrient	% Daily Value
Calories	130
Total Fat	0%
Total Carbohydrates (includes 6 1/2 tsp added sugar)	11%
Protein	0%
Vitamin A	0%
Vitamin C	0%
Vitamin D	0%
Calcium	0%

Serving Size: 8 1/2 ounces



COLA

Nutrient	% Daily Value
Calories	150
Total Fat	0%
Total Carbohydrates (includes 9 tsp added sugar)	14%
Protein	0%
Vitamin A	0%
Vitamin C	0%
Vitamin D	0%
Calcium	0%

Serving Size: 12 ounces



DIET COLA

Nutrient	% Daily Value
Calories	0
Total Fat	0%
Total Carbohydrates	0%
Protein	0%
Vitamin A	0%
Vitamin C	0%
Vitamin D	0%
Calcium	0%


Serving Size: 12 ounces



BOTTLED WATER

Nutrient	% Daily Value
Calories	0
Total Fat	0%
Total Carbohydrates	0%
Protein	0%
Vitamin A	0%
Vitamin C	0%
Vitamin D	0%
Calcium	0%

Serving Size: 8 ounces



SPORTS DRINK

Nutrient	% Daily Value
Calories	50
Total Fat	0%
Total Carbohydrates	5%
Protein	0%
Vitamin A	0%
Vitamin C	0%
Vitamin D	0%
Calcium	0%

Serving Size: 8 ounces

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Source: U.S. Department of Agriculture Nutrient Analysis. % Daily Values are based on a 2,000 calorie diet.

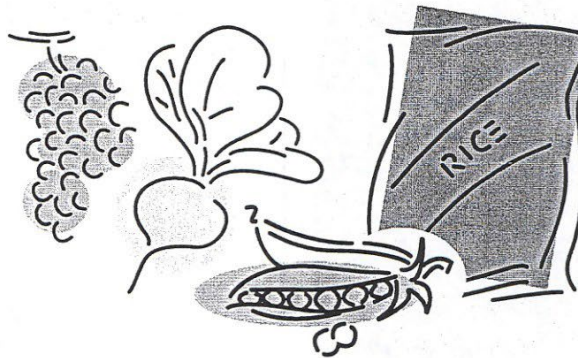
DEBUNKING MYTHS ON FIBER

What Is Fiber?

Fiber is found in fruits, vegetables, grains, nuts, seeds, dried beans, split peas, and lentils. It is the part of plants that the body cannot digest easily. Fiber includes plant cell walls (cellulose) and other substances, such as pectin and gums. There is no dietary fiber in meat or dairy products.

We need to eat fiber for good health. A high-fiber diet may lower the risks for certain cancers, heart disease, and even obesity. Most Americans' diets contain, on the average, about 10 grams of fiber. Try to choose foods that add up to 20–30 grams of fiber per day. The chart on page 3 will help you figure how much fiber is in foods.

Remember that a diet too high in fiber (more than 35 grams per day) is not recommended. As is true of other nutrients, some fiber is needed—but too much can unbalance your diet.



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Read food labels to find the amount of dietary fiber in each product.

Adding Fiber

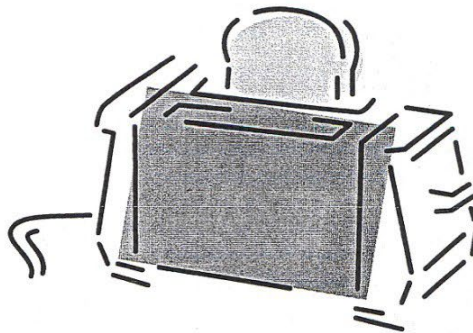
The U.S. Food and Drug Administration (FDA) has defined a high-fiber food to equal 5 grams of fiber per serving. A good source of fiber equals 2.5 grams to 4.9 grams of fiber per serving.

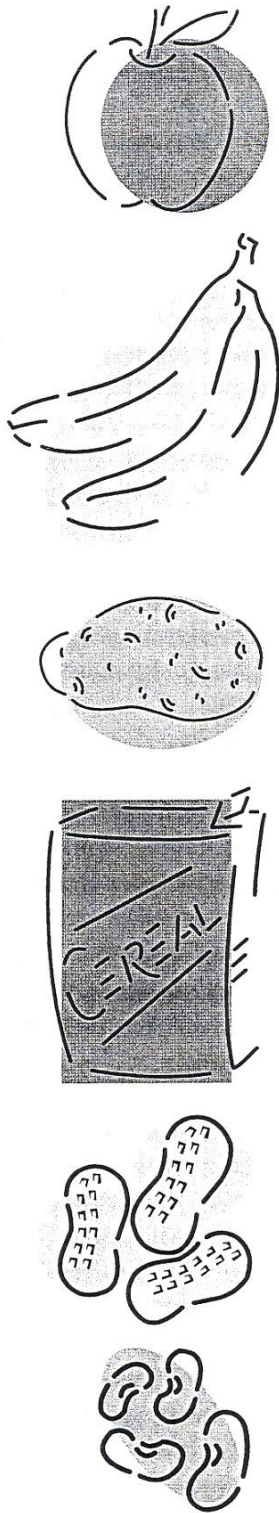
There are many ways to add fiber to your diet:

- ◆ Add sliced fresh fruit to cereal, yogurt, or cottage cheese.
- ◆ Use whole grain breads (which contain at least 3 grams of fiber per serving) in place of white bread.
- ◆ Choose whole-grain crackers.
- ◆ Use fresh fruit and vegetables every day. Eat fruit at every meal and snack on fresh or dried fruit, raw vegetables, or low-fat popcorn
- ◆ Use more beans and peas in meals. Try split pea or lentil soup, brown rice and beans, or chili.
- ◆ Choose high-fiber cereals (5 grams of fiber or more per serving) for breakfast in place of refined, sugary cereals.
- ◆ Eat potatoes with the skin.
- ◆ When you cook vegetables, steam or stir fry until they are tender but still crisp.
- ◆ Use sunflower seeds, sesame seeds, or wheat germ for toppings on casseroles, or add them to baked goods like quick breads and cookies.

How Much Fiber Did You Eat Today?

Adults need 20–30 grams of fiber each day for good health. Consult the following chart to check how much fiber you ate today.





Food	Amount	Grams of fiber
FRUITS		
Apple	1 medium	3.7
Apple juice	3/4 cup	0
Banana	1 medium	1.8
Cantaloupe	1/4 melon	1.0
Orange	1 medium	3.6
Orange juice	3/4 cup	0.4
Peach	1 medium	1.4
Raisins	1/4 cup	2.0
Strawberries	1/2 cup	2.0
VEGETABLES		
Broccoli, cooked	1/2 cup	3.6
Cabbage, raw	1/2 cup	1.0
Carrot	1 medium	2.3
Corn	1/2 cup	2.0
Green beans	1/2 cup	1.0
Onion, cooked	1 medium	0.8
Peas, green	1/2 cup	3.0
Potato, with skin	1 medium	3.0
Potatoes, French fried	10 strips	1.6
Tomato	1 medium	1.6
Tomato juice	3/4 cup	1.4
BREADS AND CEREALS		
Bran flakes	3/4 cup	4.2
Bread, white	1 slice	0.5
Bread, whole wheat	1 slice	2.0
Corn flakes	1 cup	0.5
Crisp rice cereal	1 cup	0.1
Oatmeal, cooked	1/2 cup	2.3
Popcorn	1 cup	1.2
Rice, white, cooked	1/2 cup	1.0
Spaghetti and macaroni	1/2 cup	1.0
Tortilla, corn	1 medium	1.5
Oat bran muffin	1 medium	13.1
NUTS		
Peanuts	1/4 cup	3.2
Peanut butter	2 Tbsp.	3.4
Walnuts	1/4 cup	2.0
LEGUMES		
Baked beans	1/2 cup	9.8
Kidney beans	1/2 cup	6.5
Lima beans	1/2 cup	6.5
Navy beans	1/2 cup	5.0
Pinto beans	1/2 cup	6.4

Children should eat fruits and vegetables every day.

How Much Fiber Do Children Need?

Experts in children's nutrition agree it's important to teach children healthful eating habits when they are young. But what about fiber? We haven't heard much about its benefits for children.

We're beginning to understand fiber's importance in children's diets. It has key health benefits in promoting regularity. Fiber not only helps to maintain good health as children grow, it helps them establish eating patterns that may assist in reducing their risk of developing heart disease and some types of cancer later in life.

The *Dietary Guidelines for Americans* recommends that after children are two years old, the fat in their diets should be lowered gradually until it reaches the level recommended for adults, around age five. As we lower the fat, we need to provide more foods rich in fiber, vitamins, and minerals.

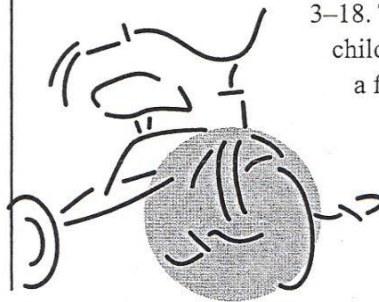
We do need to be careful how much fiber we give children. High-fiber diets can reduce the amount of calories children get because foods high in fiber tend to be bulky and low in calories. Fiber can also bind minerals so that they are not available for the child to absorb. But most children currently do not get enough fiber.

Dietary fiber should be increased gradually. Caution is especially prudent for groups that may not be getting enough calories or minerals, such as preschool children, adolescents with mineral-deficient diets, children with inadequate nutrition, and some vegetarian children who have nutritionally inadequate diets. The best way to add fiber is by increasing the amounts of fruits, vegetables, legumes, cereals, and other grain products consumed. It's also important for anyone who is eating more fiber to drink extra liquids, including water, juice, or milk.

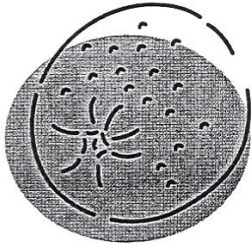
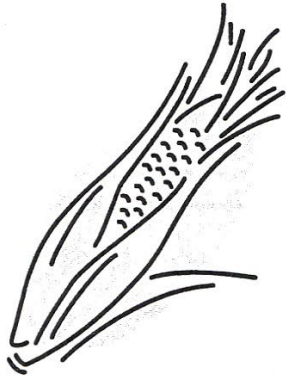
So how much fiber should children eat? Until recently there were no formal guidelines geared for children's needs and their developmental cycle. Now we have a fiber recommendation for children ages

3-18. The new formula is the child's age plus 5. For example, a five-year-old child needs

about 10 grams of fiber, $5 + 5 = 10$. This formula allows for the greater need for fiber as the child grows.



Page 4



Below are some fiber-containing foods in portions consumed by children:

Food	Amount	Grams of fiber
GRAINS		
Raisin bran cereal	1 cup	7
Whole wheat biscuit cereal	1 cup	6
Bran waffle	2 rounds	4
Oatmeal	1 cup	4
Whole wheat bread	1 slice	2
Bran muffin	1 small	2
Fruit-filled cereal bar	1	1
VEGETABLES		
Cooked green peas	1/2 cup	3
Cooked broccoli	1/2 cup	3.5
Cooked carrots	1/2 cup	2
Cooked corn	1/2 cup	2
FRUITS		
Apple, with peel	1 medium	3
Orange	1 medium	3.5
Raisins	1/4 cup	2
Banana	1/2 medium	1

5 E P C R E B E R F I B E R

Banana Bread

- 1/2 cup sugar
- 1/2 cup egg substitute
- 2 cups mashed bananas (about 5)
- 2 cups whole wheat pastry flour
- 1 teaspoon baking powder
- 1/2 teaspoon baking soda
- 1 teaspoon cinnamon

With mixer, beat together sugar, eggs, and bananas. Add dry ingredients; mix well. Pour into loaf pan sprayed with cooking spray. Bake at 350° for 45 minutes. Makes 16 slices.

One serving provides 112 calories, 3 grams protein, 3 grams fiber, and 0 grams fat.

Simple Chicken Pasta Salad

- 4 ounces cooked pasta twists or bows
- 1 6-ounce boneless chicken breast, poached, cooked, and cubed, or 1 cup cubed cooked chicken
- 1 10-ounce frozen package chopped broccoli, thawed and drained, or 1 cup chopped fresh broccoli
- 1/2 cup frozen peas, thawed
- 1 16-ounce can stewed tomatoes
- 1 teaspoon Italian blend herbs
- 1/4 teaspoon white pepper
- 1 tablespoon Parmesan cheese

Combine all ingredients in salad bowl; cover and chill for 20 minutes. Makes 3 servings.

One serving provides 328 calories, 29 grams protein, 8 grams fiber, and 4 grams fat.

One-Dish Meal

- 1/3 pound lean ground beef
 - 1/2 cup canned or fresh tomatoes, diced
 - 1/4 cup rice (uncooked)
 - 1/3 cup water
 - Pepper to taste
 - 1 cup cooked split peas or frozen thawed green peas
- Put ground beef in a pan and cook over medium heat until browned. Drain off fat. Add tomatoes, rice, water, and pepper. Cover and boil gently about 25 minutes or until rice is tender. Add split peas. Heat moderately until hot. Makes 2 servings.

One serving provides 182 calories, 19 grams protein, 3 grams fiber, and 3 grams fat.

SEVEN CUP RECIPE BOOK

Easy Brown Rice and Beans

4 tablespoons brown rice
3/4 cup water
7-ounce can stewed tomatoes
1/3 cup chopped celery (1 stalk)
1/3 cup chopped onions (1/2 medium onion)
1/2 cup chopped green pepper (1/2 medium)
7-ounce can red kidney beans (or 1/2 14-oz can)
Pinch of garlic powder
2 drops hot sauce
Dash of pepper

Cook rice in water until water is absorbed. In skillet cook chopped celery, onion, and green peppers slowly over low heat about 10 minutes. Add drained canned beans, stewed tomatoes, and seasoning. Bring to a boil, and then simmer uncovered about 10 minutes. Add cooked rice and mix. Makes 2–3 servings.

One serving provides 75 calories, 5 grams protein, 4 grams fiber, and 1 grams fat.

Yummy Yams

3 medium yams
1 cup dried prunes (soaked, drained)
2 tablespoons lemon juice
2 teaspoons margarine
2 tablespoons fruit juice (orange, apple, etc.)
Pinch of mace, pinch of ginger
1/2 teaspoon salt

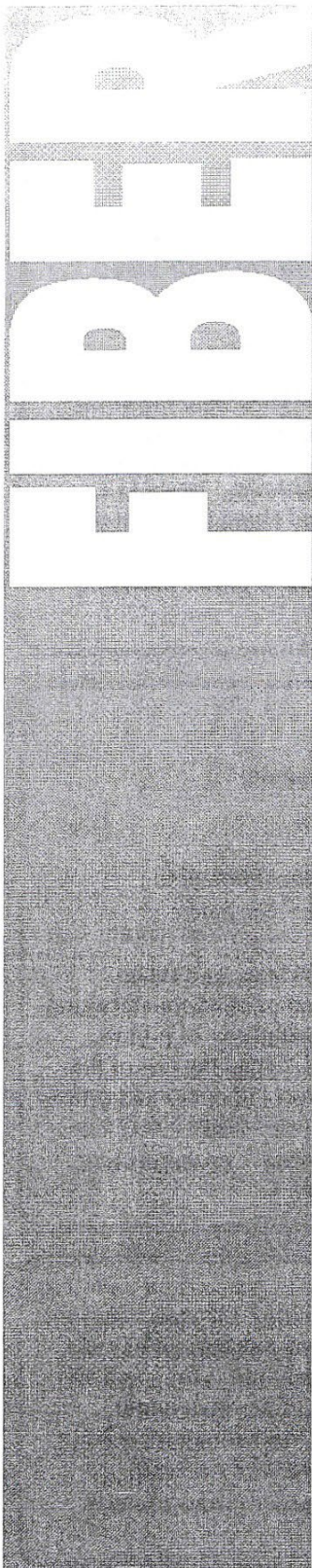
Peel and cut yams into 1/4-inch slices, and steam. Arrange layer of yams on bottom of oiled, small baking dish. Dot with margarine. Top with layer of prunes. Alternate layers until all is used. Blend the rest of the ingredients together and pour over potatoes and prunes. Bake at 350° for about 35 minutes. Makes 3 servings.

One serving provides 447 calories, 7 grams protein, 17 grams fiber, and 3 grams fat.

Apricot Rice

Cook 1/4 cup long-grain rice with 1 1/2 cups water till tender; drain. Drain one 8 3/4-oz can apricot halves, saving 3 tablespoons syrup. Combine syrup, cooked rice, and 2 tablespoons orange juice concentrate. Spoon into 2-cup baking dish; top with apricots and bake at 375° for 20 minutes. Makes 2 servings.

One serving provides 93 calories, 1 grams protein, 2 grams fiber, and 0 grams fat.



Bean Burritos

- 1 16-ounce can pinto beans
- 1 tablespoon oil
- 1 package (10) flour tortillas
- 1/2 cup chopped onions
- 1 cup grated American or Longhorn cheese
- Chopped lettuce
- Salsa or taco sauce

Mash drained beans and heat in oil until hot. Simmer and stir over low heat until thick. Heat flour tortillas until warm and soft. Spread about 2 tablespoons of beans on the tortilla. Add cheese, onions, lettuce, and salsa if desired. Fold one side of the tortilla up about one inch, then roll. Makes 5 servings.

One serving provides 491 calories, 20 grams protein, 5 grams fiber, and 17 grams fat.

Prepared by Julie A. Haines, assistant director, Nutrition Links program.

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Healthy Trail Mix Recipe

Ingredients needed:

Cheerios or other whole oat cereal
Mini Frosted Shredded wheat cereal
Small pretzels
Corn Flakes cereal
Raisins
Nuts (optional)

In a large bowl, combine 1 scoop of each cereal and one scoop of pretzels to plastic bag. Add 1 to 2 tablespoons of raisins. Add 1 to 2 tablespoons of nuts, if desired.



Making Pretzels

Overview

People use plants for food. This lesson provides students with a first-hand experience about a familiar food (pretzels) that is made from wheat grains.

Suggested Grade Level

PreK - 1

Estimated Time

60 minutes

Objectives

Students will be able to:

1. describe an example of how people use plants for food.
2. demonstrate that plants provide food products by grinding wheat seeds into flour and using the flour to make pretzels.

Materials

1. Half pound of wheat seeds (often called wheat berries) from a health food store or bulk food department of the supermarket. (If unavailable, use the amount of whole wheat flour listed in the recipe and explain how wheat is ground into flour.)
2. Other ingredients listed in the recipe on page T-4.
3. Electric coffee grinder, hand cranked meat grinder, food processor (metal blade), or mortar and pestle, measuring cups, large mixing bowl, long handled wooded spoon, clean table to roll out dough, 2 baking sheets, and access to a baking oven.
4. Stalk of wheat from a florist or craft store (optional)
5. Activity Sheet A

Background

Although most young children can recognize a plant's roots, stems, leaves, flower buds, fruits, and seeds, they may not understand the function of all these parts. Likewise, few children can identify the plant sources of common foods, fibers, and building materials.

Children usually define plant parts according to their shape and position rather than their function. Emphasize that people eat many different parts of plants.

You can either accept the way children classify foods or explain the scientific classification. For example, many children will call potatoes “roots” because they grow underground, although potatoes are really underground stems that store food.

The following are examples of foods that are seeds: barley, buckwheat, corn, popcorn, oats, rice, wheat, peas, chick peas, lentils, dried beans, peanuts, soybeans, almonds, chestnuts, coconuts, hazelnuts, pecans, pine nuts, pistachios, cashews, walnuts, sesame, sunflower, anise, caraway, dill, nutmeg, peppercorns, cacao (cocoa, chocolate), carob, coffee, vanilla.

Activity

1. Read the following story:

We Eat Wheat

In the fall, a farmer planted wheat seeds. (Pass one wheat seed to each child.) All winter, the seeds lay in the ground. During the winter and spring, rain fell and soaked into the ground. When the weather got warmer, the seeds spouted and wheat plants began to grow. (Show picture 1. T-5) More rain fell, and the roots of the young wheat plants grew into the ground. Water went into the roots and up the wheat plants’ stem into the green leaves. Air went into tiny openings in the leaves. The wheat plants did something that we can’t do. With the water, the air, and the energy from sunlight, the plants made food that they used to help them grow taller and taller. (Show picture 2. T-5)

In the summer, the wheat plants used some of their food to make seeds like the ones in your hands. Then the wheat plant looked like this. (Show picture 3. T-5, or a wheat stalk with ripe grain.) Look carefully. How many seeds would you guess are on one plant? Measure half a teaspoon of wheat seeds to show about how many wheat seeds are in one head of wheat.

The farmer cut down the ripe wheat plants with a big machine called a combine. (Show picture 4. T-5) The wheat seeds were knocked off the plants and stored in big tower called a grain elevator. A train pulled a clean freight car in front of the grain elevator and the wheat seeds were sent down a chute into the freight car. The train took the wheat to the factory. At the factory, a machine ground the wheat seeds very finely into flour. The flour was put in bags and taken to grocery stores.

What might happen next? (We could buy the flour.)

What could we make with the flour? (Pancakes, pizza crust, bagels, cake, bread, pretzels.)

2. Tell the students that they will use flour and other ingredients to make pretzels. While the pretzels bake, the class can continue to make up the story about wheat. Place the wheat seeds in the grinder and give everyone a turn grinding them to make flour. Use the freshly ground flour and additional flour to make pretzels.
3. While the students are eating their pretzels, ask them to complete the story about the wheat plant. One variation might be as follows: Our teacher went to the grocery store and bought a bag of flour. The flour came from wheat seeds that a farmer grew. We mixed the flour that we ground ourselves with the flour from the store. We measured some flour and mixed it some other ingredients. We kneaded the dough and rolled it into ropes. Each of us made a pretzel from a piece of the dough. We baked the pretzels and ate them. They tasted good. We were eating the seeds of the wheat plant. The food the wheat plants made and stored in their seeds are food for us. When we ate the pretzels, the wheat became part of us!
4. The students could draw pictures and write stories to explain how they ground the wheat seeds and baked pretzels.
5. Students may use Activity Sheet A to tell stories about making pretzels and/or color and cut out to make sequencing cards.

Adapted from Project LEAP: Learning about Ecology, Animals, and Plants, College of Agriculture and Life Sciences, Cornell University, Ithaca, NY 14853

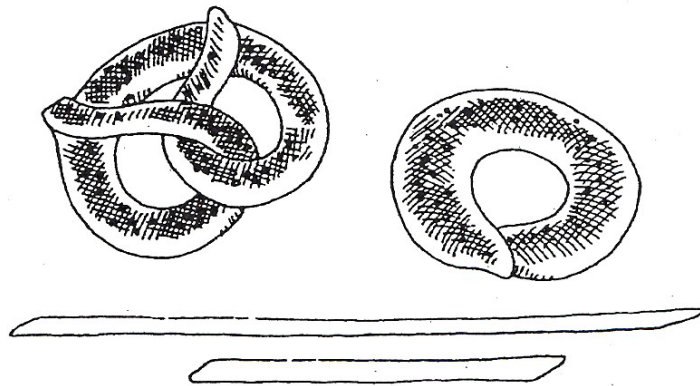
Soft Pretzels

4 cups all-purpose flour
4 cups whole-wheat flour
2 packages active dry yeast
2 teaspoons salt
2 2/3 cups very warm water (120° to 130°)
6 tablespoons vegetable oil
2 tablespoons honey or sugar
2 tablespoons poppy or sesame seeds

Directions

1. Preheat oven to 425 degrees .
2. Lightly grease 2 baking sheets.
3. Stir together 2 cups all-purpose and 2 cups whole wheat flour, yeast, and salt.
4. Add water, vegetable oil, and honey, and beat 3 to 4 minutes with spoon.
5. Add 2 cups whole-wheat flour and enough additional all-purpose flour to make a soft yet manageable dough. Knead 8 to 10 minutes until smooth, adding more flour if necessary.
6. Divide dough into 24 equal portions and roll each into a 15-inch rope with slightly tapered ends. (See illustration below)
7. Roll lightly in seeds and shape into a pretzel and pinch ends to top to keep together.
8. Place on greased baking sheets and bake for 15 to 20 minutes.

Yield: 24 pretzels

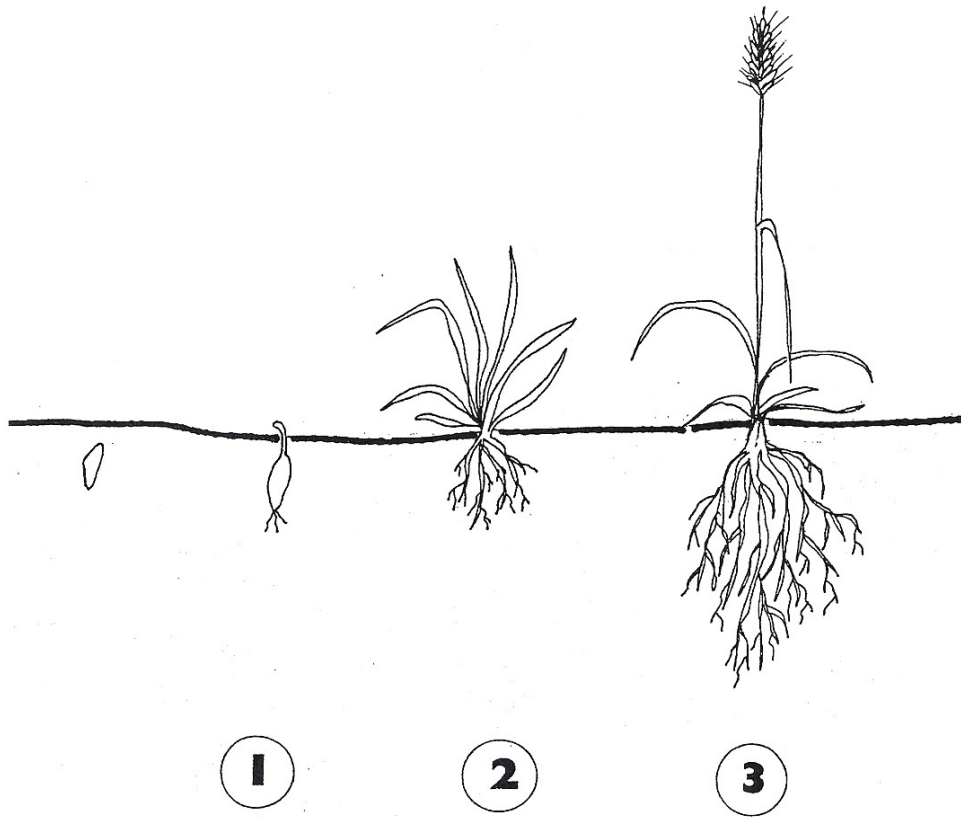


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Making Pretzels-Grades PreK-1: T-4**

Making Pretzels

Stages in the Growth of Wheat

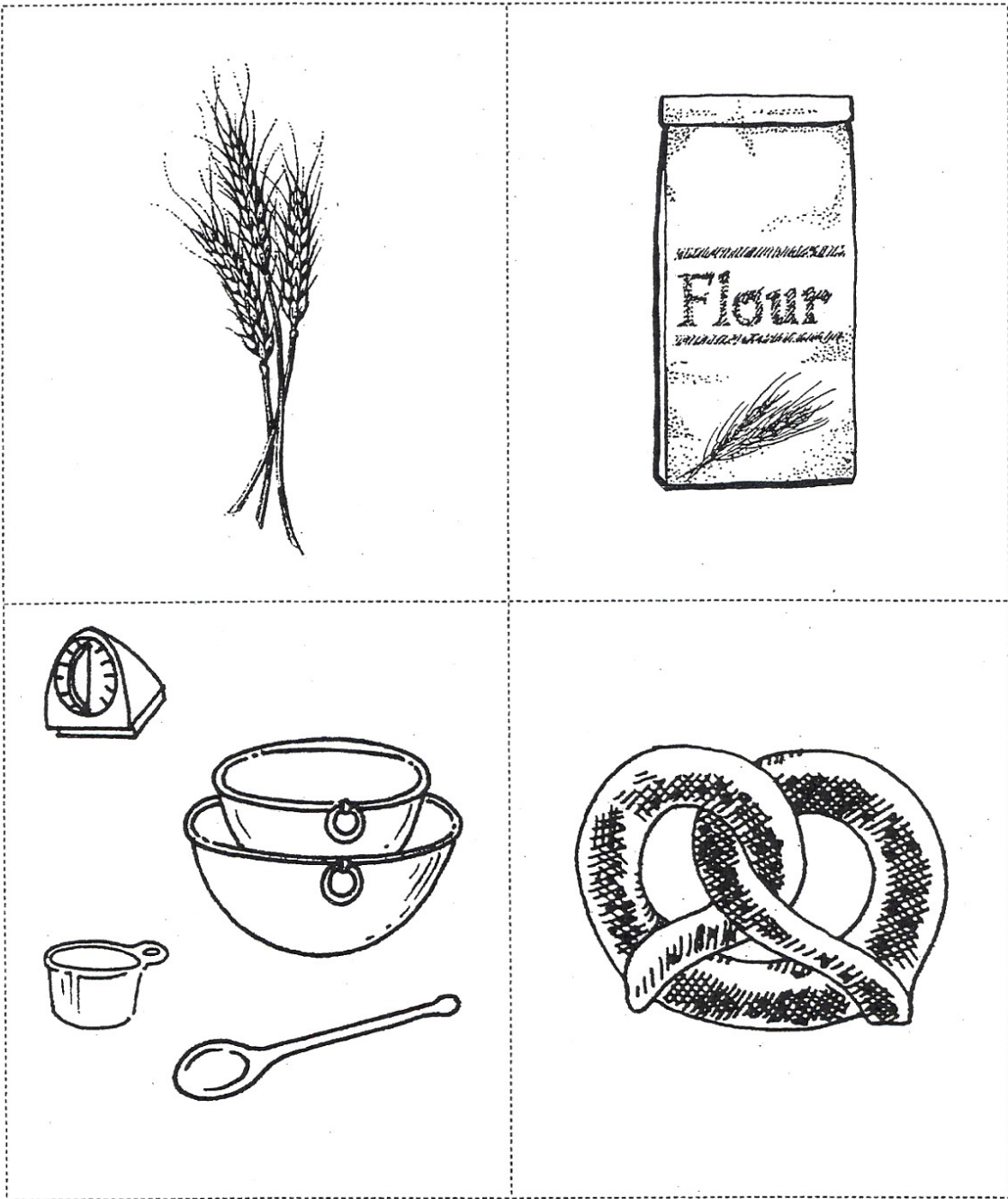


Making Pretzels

Stages in the Growth of Wheat



USDA – Ag in the Classroom-www.agclassroom.org
Making Pretzels-Grades PreK-1: T-6



Kernel of Wheat

The kernel of wheat is a storehouse of nutrients needed and used by man since the dawn of civilization.

This cross section shows the nutrients in each part of the kernel. They are considered essential in the human diet.

ENDOSPERM . . . about 83% of the kernel. Source of white flour. Of the nutrients in the whole kernel, the endosperm contains about:

70-75% of the protein	} B-complex vitamins
43% of the pantothenic acid	
32% of the riboflavin	
12% of the niacin	
6% of the pyridoxine	
3% of the thiamine	

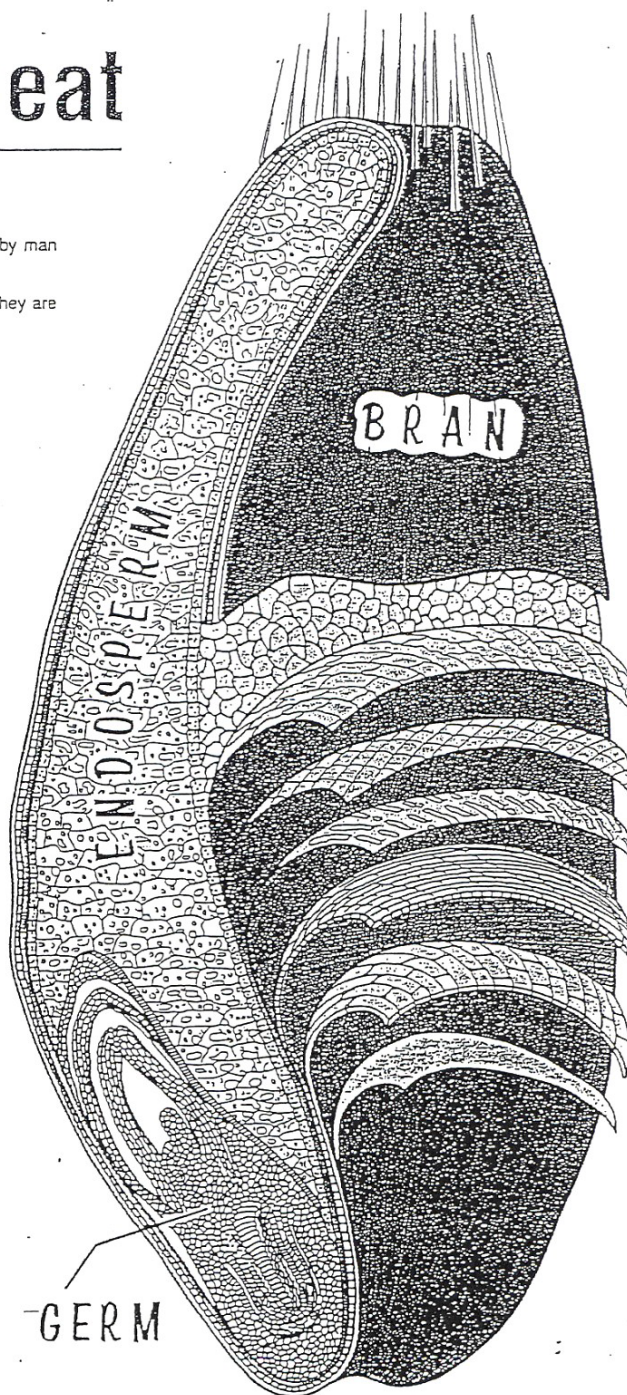
Enriched flour products contain added quantities of riboflavin, niacin and thiamine, plus iron, in amounts equal to or exceeding whole wheat—according to a formula established on the basis of popular need of those nutrients.

BRAN . . . about 14 1/2% of the kernel. Included in whole wheat flour. Of the nutrients in whole wheat, the bran, in addition to indigestible cellulose material, contains about:

- 86% of the niacin
- 73% of the pyridoxine
- 50% of the pantothenic acid
- 42% of the riboflavin
- 33% of the thiamine
- 19% of the protein

GERM . . . about 2 1/2% of the kernel. The embryo or sprouting section of the seed, usually separated because it contains fat which limits the keeping quality of flours. Available separately as human food. Of the nutrients in whole wheat, the germ contains about:

- 64% of the thiamine
- 26% of the riboflavin
- 21% of the pyridoxine
- 8% of the protein
- 7% of the pantothenic acid
- 2% of the niacin



A Grain of Wheat
(enlarged approximately 35 times)

Kansas is the No. 1 wheat producing state in the United States.

Nearly 400 million bushels of hard red winter wheat are harvested annually. This wheat is planted in the fall. The seeds root, shoots and leaves emerge. In the spring, the wheat plants, which have been dormant during the winter, begin to grow again and reach maturity in June and July. Hard red winter wheat is used in yeast bread and rolls and all-purpose flours.

