Grade 5
An Integrated Nutrition Curriculum

Developed by the North Carolina Nutrition Education and Training Program
January 2007

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Welcome to **Food for Thought**, a K-5 curriculum that allows you to teach the nutrition objectives of the Healthful Living Standard Course of Study while integrating the concepts of healthy eating and physical activity into Math and English Language Arts. The matrix summarizes the objectives addressed in each lesson. The lessons flow best when presented in the order listed.

Effective nutrition education can motivate and enable students to adopt healthful dietary patterns and healthy lifestyles. **Food for Thought** will allow you to deliver effective nutrition education. There are many benefits for students who are well nourished and physically active. These include:

- Improved attendance
- Improved energy level
- Improved participation
- Improved behavior
- Improved test scores
- Improved academic success
- Reduced fatigue
- Reduced irritability
- Reduced apathy
- Reduced anxiety
- Reduced infections
- Reduced absences

Each lesson in **Food for Thought** includes the following sections:

- **Objectives**: Healthful Living, Math and English Language Arts objectives
- **Teacher Resources**: background information to help prepare the lesson is included
- **Materials Needed**: additional items have been kept to a minimum
- **Handouts**: all student handouts are included with this packet
- **Focus**: an activity designed to get students focused on the topic to be covered in the lesson
- **Teacher Input**: material to be presented by the teacher
- **Practice and Assessment**: handouts and activities to be completed by students

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# Food for Thought

## Healthful Living/ Math/ English Language Arts Objectives

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Grade 5

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Water
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Truth Behind the Claims
Twists and Turns of Fad Diets
Walking
What is Physical Activity?
Protein

Without protein, the human body would not be able to survive. Protein performs four very important functions.

**Function**
The body uses protein for:

- Growth and repair of new and damaged tissues. Skin, muscles, hair, finger nails, and blood clots are all made of protein.
- Regulating all body functions through the actions of enzymes, hormones, and other functional molecules.
- Transporting other nutrients and oxygen throughout the body.
- Supplying energy when adequate amounts are not supplied by carbohydrates and fat. Providing immune system defenses; antibodies are made of proteins.

Protein is an organic macromolecule comprised of compounds called amino acids. Amino acids are often referred to as the building blocks of protein. They consist of an amino group (H2N-), a carboxyl group (-COOH), a hydrogen (-H), and what is called a “side group” (usually denoted chemically as “R”) attached to a central carbon atom. There are 22 different amino acids; they differ by the type of “R” group attached.

Thirteen of the 22 amino acids can be manufactured by the body. The remaining nine amino acids – often called essential amino acids – must by supplied by the diet. People in developing countries may suffer from diet-related diseases and other health problems because of the shortage of protein foods.

Protein foods that supply all nine of the essential amino acids are called complete proteins. Foods that supply only some of the nine essential amino acids are called incomplete proteins. Two incomplete protein foods can be eaten together to form a complete protein source. Most generally, animal proteins are complete protein sources and plant proteins are incomplete protein sources. However, animal proteins also provide more fat and calories than plant proteins. It is a wise dietary practice to consume combinations of plant proteins to fulfill some of the body’s need for complete proteins. Some examples of combining incomplete proteins to form complete proteins are:

- Legumes (dried beans, lentils, split peas) and rice
- Pinto beans and corn tortillas
- Peanut butter sandwich (peanuts are a legume).

The amino acids are joined together by peptide bonds to form polypeptides. A protein consists of one or more of the polypeptide chains. Enzymes are globular proteins that catalyze chemical reactions within the body. For enzymes and all proteins, shape determines function – and the shape is determined by the sequence of the different amino acids.

Denaturation is the disruption of the bonds and the three-dimensional shape of a protein. This is often accomplished by changes in pH or temperature. To see denaturation in process, cook an egg white. The visible differences (moving from translucent to opaque, from watery to rubbery) are due to protein denaturation caused by heat.

It is recommended for adults that 10-35% of calories come from protein; for teenagers and children over the age of four, it is recommended that 10-30% of calories come from protein. Additional protein is needed by women during times of pregnancy and lactation. People should consult the Dietary Reference Intake charts for their gender and age group for specific protein requirements.

Source: http://netx.squaremeals.org/index.aspx
Carbohydrates

Carbohydrates are organic molecules constructed in the ratio (CH₂O) in a variety of lengths and shapes. Carbohydrates are the body’s preferred source of energy; the other potential energy sources being proteins and fats. Carbohydrates are broken down in the body into sugars, starches and fiber. The sugars are known as simple carbohydrates, and the starches and fiber are known as complex carbohydrates.

Function
Carbohydrates perform three important functions in the body:

- Supply energy
- Supply fiber
- Aid in the digestion of fats

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<th>Disaccharides</th>
<th>Polysaccharides</th>
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<td><strong>Monosaccharides</strong> are the simplest form of carbohydrates. The monosaccharides are glucose, galactose, and fructose. Sugars and starches are broken down in the body into the simple sugar glucose. Glucose is the major sugar found in the bloodstream and supplies energy for the body. Some body tissues, such as red blood cells and parts of the brain, are able to get energy only from glucose. Fructose is found in honey and fruits and is known as the sweetest of the sugars. Galactose is not found in nature, but it is one of the two monosaccharides available after the breakdown of lactose (milk sugar).</td>
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<td><strong>Disaccharides</strong> are formed when two monosaccharides are joined together. They are broken down into their monosaccharide components during digestion. The disaccharides are sucrose, maltose, and lactose. Sucrose (glucose + fructose) is found in white, refined table sugar, brown sugar, confectioner’s sugar, cane sugar, beet sugar, molasses, and maple syrup. Maltose (glucose + glucose) is malt sugar which is found in sprouting cereal grains. Lactose (glucose + galactose) is milk sugar and is found only in milk.</td>
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<td><strong>Polysaccharides</strong> are the complex carbohydrates often consisting of very long chains of glucose monomers. They include starch, cellulose and glycogen. Starch is the most abundant polysaccharide and is an important storage form of energy in plants. Starch can be found in roots (such as potatoes), legumes, grains, and vegetables, but must be broken down into glucose by the body before it can be utilized. Cellulose is the fibrous material found in plants, such as the strings in celery, and is commonly referred to as fiber or roughage. Cellulose cannot be digested by humans. Sources of cellulose include vegetables, fruits, and whole grain cereals. Glycogen, also known as animal starch, is the storage form of carbohydrates found in the liver and muscles. Glycogen in the liver is easily broken down into blood glucose, and muscle glycogen supplies glucose for muscle use. This is especially important during periods of intense exercise.</td>
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Forty-five to sixty-five percent of calories should come from complex carbohydrates. Preferred carbohydrate sources include vegetables, fruits, grains and grain products, legumes, and dairy products. Current recommendations suggest half of all grain and grain products consumed should be whole grains.

Source: http://netx.squaremeals.org/index.aspx
Fats

Fats are semisolid, energy-filled organic macromolecules found in animal and plant tissues. The term lipid is often used interchangeably with the term fat, but it is also used to describe a larger group that includes fats (solids, semisolids at room temperature), oils (liquids at room temperature), and fat-related substances. The major form of fat in the body and in foods is known as triglycerol or triglyceride. Triglycerides are organic compounds containing a glycerol backbone and three attached fatty acid chains. Other forms of fat in the body include sterols, a class of fats consisting of fused carbon rings without fatty acid chains, and phospholipids (such as lecithin). Steroids include cholesterol, Vitamin D, and sex hormones (estrogen and testosterone).

Functions of fat in the body include:

- provide energy
- transport and absorb fat-soluble vitamins
- cushion vital organs in the body
- important part of the membranes of cells
- supply essential fatty acids
- add flavor to foods
- satisfy the appetite by delaying hunger
- insulate the body
- serve as protection for nerves and blood vessels

Fatty acid chains are classified as saturated, monounsaturated, or polyunsaturated depending on the number of double bonds they possess. Every time a double bond is formed, one of the hydrogen molecules is removed and a tiny bend or kink forms in the chain. The more saturated the fat, the fewer kinks it has, the more closely the molecules can pack, and the more solid it is at room temperature.

- **Saturated fats** have no double bonds and the most hydrogen. Saturated fats are found in animal meats, butter, chocolate, egg yolks, lard, coconut and palm oil (the only saturated oils), and many other foods. The Dietary Guidelines for Americans suggest that 10% or fewer of calories should come from saturated fat.

- **Monounsaturated fats** have one double bond and less hydrogen than saturated fats. Example sources include canola, olive, and sunflower oils, and nuts.

- **Polyunsaturated fats** have multiple double bonds and even less hydrogen than monounsaturated fats. Polyunsaturated fats can be found in soybean, corn, and safflower oil, walnuts, and flaxseeds.

Trans fats are a special category of fats. Trans fats occur naturally in small amounts in meat and dairy foods, but the majority of trans fats in the American diet come from hydrogenation. When liquid oils are hydrogenated, treated with hydrogen to become semi-solid or solid fats, trans fats can be created. Trans fats are most commonly found in vegetable shortening, hard (stick) margarine, and manufactured foods such as crackers, cookies and baked goods. Consumption of trans fats should be limited, as they have been linked to an increased risk in coronary heart disease.

Children ages 4 to 18 years should receive between 25 and 35% of their calories from fat; adults should receive between 20 and 35% of their calories from fat.
Water

Water is the most abundant substance in the human body as well as the most common substance on earth. Like oxygen, you cannot live without water. On average, body weight is 50 to 75% water or about 10-12 gallons. Water is a simple substance containing two parts hydrogen and one part oxygen (H₂O). It has no calories, but every body process needs water to function.

Water regulates your body temperature, keeping it constant at about 98.6°F. Many body processes produce heat, including any physical activity. Through perspiration, heat escapes from your body as water evaporates on your skin.
- Water transports nutrients and oxygen to your cells and carries waste products away.
- Water helps with the digestion of foods.
- Water moistens body tissues such as those in your mouth, eyes and nose.
- Water is the main part of every body fluid including blood, stomach juices and urine.
- Water helps cushion your joints and protects your body’s organs and tissues.

Of all the nutrients in the body, water is the most abundant. Water and other beverages are the main sources. But you also eat quite a bit of water in solid foods. Juicy fruits and vegetables such as celery, lettuce, tomatoes and watermelon contain more than 90% water. Even dry foods such as bread supply some water.

The average adult loses about two quarts of water daily through perspiration, urination, bowel movements and even breathing. One and one-half cups of water is lost just through breathing. Most people need 8 to 12 cups of water daily from drinking water and other beverages.

When we are really active outside in the hot weather we need to be especially careful to avoid dehydration. No matter what you do - biking, running, swimming, walking or just playing outside - make sure you get enough fluids.
- Drink plenty of fluids before, during and after activity. Carry a water bottle especially if you do not have a water source available.
- Drink fluids by schedule (every fifteen minutes) even when you do not feel thirsty.
- Wear light colored clothing.
- Be especially careful if you exercise in warm, humid weather.
- Signs of dehydration are flushed skin, fatigue, increased body temperature and increased breathing and pulse rate.
Fiber

Dietary fiber is a type of carbohydrate consisting of the parts of a plant that cannot be digested. There are two categories of fiber: soluble and insoluble. Soluble fiber is dissolved in water and may help control diabetes and lower blood pressure in some people. Soluble fiber is found in some fruits, beans, and oat bran. Insoluble fiber is not able to be dissolved in water and therefore has different functions from soluble fiber. Insoluble fiber helps move food through the digestive tract. It aids in the prevention of colon and rectal cancer, helps to control diverticulosis, and helps prevent constipation. Diverticulosis is caused when bulging pockets form on the intestinal wall and can become inflamed. Sources of insoluble fiber are fruits, vegetables, wheat bran, whole wheat, and some beans.

Function
Fiber has a number of functions in the digestive system:

- Because fiber cannot be absorbed, it essentially contributes no calories to the diet. It can give a feeling of fullness in the stomach, without adding extra calories.
- Fiber slows the emptying of food from the small intestine. Because sugars in the food are not moving through your digestive system so quickly, fiber has a positive effect on blood glucose levels.
- Fiber can interfere with the absorption of fats and cholesterol. By sweeping the fats out of the body, fiber can help lower blood cholesterol levels.

Many types of beans (black, navy, kidney, pinto, lima, etc.) are very high in fiber. Bran and shredded wheat cereals are also good fiber sources. Many fruits and vegetables, including sweet and plain potatoes, pears, peas, berries (raspberries, blackberries), pumpkin, spinach, apples, bananas, oranges, and broccoli, are good sources of fiber. Additionally, some foods you might not expect – such as almonds, soybeans, and tomato paste – also provide fiber to the diet.

Source: http://netx.squaremeals.org/index.aspx
Calories

Energy makes things go and grow. For example, electricity is a form of energy that makes a lamp work. Gas produces energy to make a car go. Dogs eat dog food to make them go. Fish eat fish food to make them go. Foods have six different kinds of nutrients in them. The nutrients are protein, carbohydrates, fat, vitamins, minerals, and water. Energy or calories are only found in protein, fat and carbohydrates. Both protein and carbohydrates provide four calories per gram. Fat has more energy and provides nine calories per gram. Food gives people energy. We measure energy in calories.

Calories are the potential energy the body can receive from a food. Our bodies use food for energy to maintain all body functions both voluntary and involuntary; in other words, to move, act, grow and mend from an injury.
Minerals

Minerals are inorganic substances necessary for building bones, tissues, and other compounds as well as for regulating body processes. Minerals found in large amounts in the body or those with high daily intake requirements (at least 100 milligrams per day) are called macrominerals. Macrominerals include calcium, phosphorus, magnesium, sodium, potassium, and chloride.

Function

Minerals perform a number of functions in the body:

- Calcium is used to make the bones and teeth
- Iron is used to make the hemoglobin in red blood cells
- Minerals become part of tissue structure, like in bone and teeth
- Minerals help maintain acid-base balance, to keep the body pH neutral
- Minerals help regulate body processes, such as in enzyme systems
- Minerals function in nerve impulse transmission and muscle contraction
- Minerals help release energy from food

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<th>Function</th>
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<td>Calcium</td>
<td>Needed for bone rigidity, blood clotting, muscle contraction, normal nerve function; Just because an individual eats food containing calcium does not mean that the body absorbs the calcium. Factors that increase calcium absorption include: an overall balanced diet; intake of vitamins C and D; intake of certain amino acids Factors that decrease calcium absorption include: vitamin D deficiency; fat malabsorption; eating large amounts of fiber; lack of exercise; stress; lactose deficiency or lactose intolerance</td>
<td>Milk and dairy products, soft-boned fish, calcium-fortified orange juice, leafy dark green vegetables, and broccoli.</td>
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<tr>
<td>Phosphorus</td>
<td>Helps build strong bones and teeth, important in cell membranes, a significant factor in energy production and storage, and in maintaining pH levels in the body</td>
<td>Dairy products, meat, eggs, fish, lentils, almonds</td>
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<tr>
<td>Magnesium</td>
<td>Metabolism of carbohydrates and fats; synthesis of DNA, RNA, enzymes; structure of bone, cell membranes; movement of potassium and calcium</td>
<td>Green leafy vegetables, nuts, whole grains, meat, fish, dairy products</td>
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<tr>
<td>Sodium, Chloride, Potassium</td>
<td>These three work together to regulate: the flow of fluids in the body, help regulate nervous system, regulate muscle function (including the heart), regulate nutrient absorption in the cells</td>
<td>Sodium and chloride are found together in table salt, and in foods with added salt (processed meats, butter, etc.). Potassium is found in meat, milk, bananas, leafy green vegetables, citrus fruits.</td>
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</tbody>
</table>

Source: http://netx.squaremeals.org/index.aspx
Minerals found in small amounts in the body are called trace elements or microminerals. Trace elements that appear to be needed by the body include: arsenic, boron, chromium, copper, fluoride, iodine, iron, manganese, molybdenum, nickel, selenium, silicon, vanadium, and zinc. We know they are needed because of the results of animal studies; when the elements are completely removed from the diets of laboratory animals, the animals begin to show ill effects. However, some of these elements are needed in such small amounts that scientists are still trying to determine their exact functions within the body. Please see below for more information about some of the best researched microminerals.

<table>
<thead>
<tr>
<th>Micromineral</th>
<th>Function</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium</td>
<td>Maintains normal glucose uptake into cells; helps insulin bind to cells</td>
<td>Meat, poultry, fish, some cereals</td>
</tr>
<tr>
<td>Copper</td>
<td>Necessary for the formation of hemoglobin and melanin.</td>
<td>Organ meats, seafood, bran products, cocoa products, nuts.</td>
</tr>
<tr>
<td>Fluoride</td>
<td>Prevents dental caries (decay); stimulates bone formation</td>
<td>Fluoridated drinking water, dental products; tea, marine fish</td>
</tr>
<tr>
<td>Iodine</td>
<td>Required by the thyroid gland for hormone creation</td>
<td>Iodized salt; marine fish, seaweed</td>
</tr>
<tr>
<td>Iron</td>
<td>Component of hemoglobin (oxygen-carrying protein in the blood) and cytochrome.</td>
<td>Meat, poultry, eggs (heme sources; more readily absorbed); leafy green vegetables, fortified bread and grain products, dried fruit (non-heme).</td>
</tr>
<tr>
<td>Manganese</td>
<td>Involved in bone formation, metabolism of carbohydrates, protein</td>
<td>Nuts, legumes, whole grains, tea</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>Helps enzymes break down amino acids</td>
<td>Legumes, grain products, nuts</td>
</tr>
<tr>
<td>Selenium</td>
<td>Defends against oxidation; regulates thyroid hormones</td>
<td>Seafood, organ meats, grains and plants grown in selenium-rich soil</td>
</tr>
<tr>
<td>Zinc</td>
<td>Involved in protein and DNA synthesis; metabolism; part of many enzymes</td>
<td>Fortified cereal, redmeat, oysters, herring</td>
</tr>
</tbody>
</table>

Source: http://netx.squaremeals.org/index.aspx
Vitamins

Vitamins are organic compounds necessary for normal growth, maintenance of health and reproduction. There are 13 vitamins currently identified as essential for maintaining good health; the body cannot survive without them.

**Function**

Vitamins help the body convert carbohydrates and fat into energy and assist in the formation of bones and tissues. Vitamins are either fat-soluble or water-soluble. Fat-soluble vitamins cannot be dissolved in water, so they are stored in the body fat until they are transported to the cells by the blood. Because these vitamins can accumulate in the body, it is especially important for a person’s regular daily nutrient intake of fat soluble vitamins not to exceed the Tolerable Upper Intake Levels (UL). Water-soluble vitamins are easily dissolved by water and therefore are not significantly stored by the body. Water-soluble vitamins must be replenished frequently.

<table>
<thead>
<tr>
<th>Fat-Soluble Vitamin</th>
<th>Description</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vitamin A</strong>&lt;br&gt; Retinol&lt;br&gt; Beta-carotene (a precursor)</td>
<td>Responsible for night and color vision, growth of bones and teeth, immune function, maintenance of epithelial tissues, and embryonic development. Excessive amounts of certain forms of Vitamin A (found in some skin medications) can cause fetal abnormalities.</td>
<td>Dark green and dark yellow vegetables, yellow fruits, egg yolks, whole milk, liver, and fish oils.</td>
</tr>
<tr>
<td><strong>Vitamin D</strong>&lt;br&gt; Calciferol</td>
<td>Important for the normal growth and development of bones and teeth. Aids in the absorption and utilization of calcium and phosphorus. With exposure to the sun, the body is able to make its own Vitamin D.</td>
<td>Egg yolks, liver, fish liver oils, fortified cereals, and fortified milk.</td>
</tr>
</tbody>
</table>
### Vitamin E
Tocopherol

Protects cells from oxidation and is important in cell membranes. Oxidation is a chemical change that occurs as a result of exposure to oxygen. When blood cells or tissue cells are exposed to oxygen, the resulting chemical change causes a weakening of the cell walls and thus damages the tissues. Vitamin E is most effective in protecting the red blood cells in the lungs and the cells of the lung tissue because of their continuous exposure to oxygen.

### Vegetable oils, whole grains, nuts and seeds, liver, fish oils, and green leafy vegetables (spinach, kale, etc.).

### Vitamin K

Necessary for protein synthesis involved in blood clotting and other body processes.

### Green vegetables (leafy vegetables, broccoli, Brussels sprouts), cabbage, plant oils, margarine. Can be produced by bacteria in the gastrointestinal tract.

---

### Water-Soluble Vitamin
- **Alternative Names**
- **Description**
- **Sources**

<table>
<thead>
<tr>
<th>Water-Soluble Vitamin Alternative Names</th>
<th>Description</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1 Thiamin Aneurin</td>
<td>Helps the body breakdown carbohydrates and release energy from food. It is necessary for cell respiration, promotion of normal appetite and digestion, and maintenance of a healthy nervous system. Thiamin is heat sensitive and is easily leached into the cooking liquid.</td>
<td>Enriched or fortified whole grain products, green leafy vegetables, legumes, and pork.</td>
</tr>
<tr>
<td>B2 Riboflavin</td>
<td>Important for the breakdown of foods and the release of energy (oxidation-reduction reactions). Riboflavin is easily destroyed by exposure to light, especially sunlight.</td>
<td>Fortified cereals and bread products, eggs, fish, organ meats, and milk.</td>
</tr>
<tr>
<td>B3 Niacin Nicotinic acid</td>
<td>Helps cells convert food into energy, and is important in the nervous and digestive systems.</td>
<td>Lean meats, poultry, fish, nuts, enriched or fortified bread products and cereals, eggs, and dairy products.</td>
</tr>
</tbody>
</table>

Source: [http://netx.squaremeals.org/index.aspx](http://netx.squaremeals.org/index.aspx)
<table>
<thead>
<tr>
<th>Vitamin</th>
<th>Function</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folate</td>
<td>Necessary for the body to produce normal red blood cells and for amino acids and nucleic acid metabolism. Key in preventing neural tube defects, such as spina bifida, during pregnancy.</td>
<td>Dark leafy green vegetables, enriched grain and cereal products, yeast.</td>
</tr>
<tr>
<td>Folic acid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folacin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biotin</td>
<td>Essential in the metabolism of fats and amino acids.</td>
<td>Liver and eggs are important sources of biotin; it is also found in baker’s yeast, and legumes.</td>
</tr>
<tr>
<td>B5</td>
<td>Aids in the metabolism of fats and the formation of cholesterol and hormones.</td>
<td>Eggs, milk, whole-grain products, sweet potatoes, and lean beef.</td>
</tr>
<tr>
<td>Pantothenic acid</td>
<td>Aids in the metabolism of fats and the formation of cholesterol and hormones.</td>
<td>Eggs, milk, whole-grain products, sweet potatoes, and lean beef.</td>
</tr>
<tr>
<td>B6</td>
<td>Important in maintaining nervous tissue function and muscle cells, DNA and RNA production, and the metabolism of carbohydrates, proteins, and fats.</td>
<td>Sources include poultry, fish, fortified whole grain cereals, and lentils.</td>
</tr>
<tr>
<td>Pyridoxine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B12</td>
<td>Important in red blood cell formation, nucleic acid metabolism and the prevention of pernicious anemia.</td>
<td>Animal products (meat, fish, poultry, milk), fortified cereals.</td>
</tr>
<tr>
<td>Cobalamin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyanocobalamin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin C</td>
<td>Aids in the formation of collagen, the healing of wounds, and the absorption of iron and calcium. Vitamin C is also an important antioxidant.</td>
<td>Sources include citrus fruits, parsley, broccoli, green and red peppers, and tomatoes.</td>
</tr>
<tr>
<td>Ascorbic acid</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research continues into the role vitamins and minerals play in preventing chronic disease and in maintaining health and wellness. The **Dietary Reference Intakes** serve as guidelines for determining the amounts of nutrients that a person needs each day.

Source: [http://netx.squaremeals.org/index.aspx](http://netx.squaremeals.org/index.aspx)
<table>
<thead>
<tr>
<th>GRAINS</th>
<th>VEGETABLES</th>
<th>FRUITS</th>
<th>MILK</th>
<th>MEAT &amp; BEANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make half your grains whole</td>
<td>Vary your veggies</td>
<td>Focus on fruits</td>
<td>Get your calcium-rich foods</td>
<td>Go lean with protein</td>
</tr>
<tr>
<td>Eat at least 3 oz. of whole-grain cereals, breads, crackers, rice, or pasta every day</td>
<td>Eat more dark-green veggies like broccoli, spinach, and other dark leafy greens</td>
<td>Eat a variety of fruit</td>
<td>Go low-fat or fat-free when you choose milk, yogurt, and other milk products</td>
<td>Choose low-fat or lean meats and poultry</td>
</tr>
<tr>
<td>1 oz. is about 1 slice of bread, about 1 cup of breakfast cereal, or ½ cup of cooked rice, cereal, or pasta</td>
<td>Eat more orange vegetables like carrots and sweetpotatoes</td>
<td>Choose fresh, frozen, canned, or dried fruit</td>
<td>If you don’t or can’t consume milk, choose lactose-free products or other calcium sources such as fortified foods and beverages</td>
<td>Bake it, broil it, or grill it</td>
</tr>
<tr>
<td></td>
<td>Eat more dry beans and peas like pinto beans, kidney beans, and lentils</td>
<td>Go easy on fruit juices</td>
<td></td>
<td>Vary your protein routine — choose more fish, beans, peas, nuts, and seeds</td>
</tr>
</tbody>
</table>

For a 2,000-calorie diet, you need the amounts below from each food group. To find the amounts that are right for you, go to MyPyramid.gov.

- Eat 6 oz. every day
- Eat 2½ cups every day
- Eat 2 cups every day
- Get 3 cups every day; for kids aged 2 to 8, it’s 2
- Eat 5½ oz. every day

Find your balance between food and physical activity
- Be sure to stay within your daily calorie needs.
- Be physically active for at least 30 minutes most days of the week.
- About 60 minutes a day of physical activity may be needed to prevent weight gain.
- For sustaining weight loss, at least 60 to 90 minutes a day of physical activity may be required.
- Children and teenagers should be physically active for 60 minutes every day, or most days.

Know the limits on fats, sugars, and salt (sodium)
- Make most of your fat sources from fish, nuts, and vegetable oils.
- Limit solid fats like butter, stick margarine, shortening, and lard, as well as foods that contain these.
- Check the Nutrition Facts label to keep saturated fats, trans fats, and sodium low.
- Choose food and beverages low in added sugars. Added sugars contribute calories with few, if any, nutrients.
**What are “oils”?**

Oils are fats that are liquid at room temperature, like the vegetable oils used in cooking. Oils come from many different plants and from fish. Some common oils are:

- canola oil
- corn oil
- cottonseed oil
- olive oil
- safflower oil
- soybean oil
- sunflower oil

Some oils are used mainly as flavorings, such as walnut oil and sesame oil. A number of foods are naturally high in oils, like:

- nuts
- olives
- some fish
- avocados

Foods that are mainly oil include mayonnaise, certain salad dressings and soft (tub or squeeze) margarine with no trans fats. Check the Nutrition Facts label to find margarines with 0 grams of trans fat.

Most oils are high in monounsaturated or polyunsaturated fats, and low in saturated fats. Oils from plant sources (vegetable and nut oils) do not contain any cholesterol. In fact, no foods from plants sources contain cholesterol.

A few plant oils, however, including coconut oil and palm kernel oil, are high in saturated fats and for nutritional purposes should be considered to be solid fats.

Solid fats are fats that are solid at room temperature, like butter and shortening. Solid fats come from many animal foods and can be made from vegetable oils through a process called hydrogenation. Some common solid fats are:

- butter
- beef fat (tallow, suet)
- chicken fat
- pork fat (lard)
- stick margarine
- shortening

**How are oils different from solid fats?**

All fats and oils are a mixture of saturated fatty acids and unsaturated fatty acids. Solid fats contain more saturated fats and/or trans fats than oils. Oils contain more monounsaturated (MUFA) and polyunsaturated (PUFA) fats. Saturated fats, trans fats, and cholesterol tend to raise “bad” (LDL) cholesterol levels in the blood, which in turn increases the risk for heart disease. To lower risk for heart disease, cut back on foods containing saturated fats, trans fats and cholesterol.

**Why is it important to consume oils?**

Most of the fats you eat should be polyunsaturated (PUFA) or monounsaturated (MUFA) fats. Oils are the major source of MUFAs and PUFAs in the diet. PUFAs contain some fatty acids that are necessary for health—called “essential fatty acids.”

Because oils contain these essential fatty acids, there is an allowance for oils in the food guide separate from the discretionary calorie allowance.

The MUFAs and PUFAs found in fish, nuts, and vegetable oils do not raise LDL (“bad”) cholesterol levels in the blood. In addition to the essential fatty acids they contain, oils are the major source of vitamin E in typical American diets.

Source: www.MyPyramid.gov
While consuming some oil is needed for health, oils still contain calories. In fact, oils and solid fats both contain about 120 calories per tablespoon. Therefore, the amount of oil consumed needs to be limited to balance total calorie intake. The Nutrition Facts label provides information to help you make smart choices.

**How much is my allowance for oils?**

Most Americans consume enough oil in the foods they eat, such as:

- nuts
- fish
- cooking oil
- salad dressings

A person’s allowance for oils depends on age, sex, and level of physical activity. Daily allowances are shown in the chart.

<table>
<thead>
<tr>
<th>Children</th>
<th>Amount of Food</th>
<th>Amount of Oil</th>
<th>Calories from Oil</th>
<th>Total Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3 years old</td>
<td>3 teaspoons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-8 years old</td>
<td>4 teaspoons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>9-13 years old</td>
<td>5 teaspoons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-18 years old</td>
<td>5 teaspoons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>9-13 years old</td>
<td>5 teaspoons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-18 years old</td>
<td>6 teaspoons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>19-30 years old</td>
<td>6 teaspoons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-50 years old</td>
<td>5 teaspoons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51+ years old</td>
<td>5 teaspoons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>19-30 years old</td>
<td>7 teaspoons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-50 years old</td>
<td>6 teaspoons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51+ years old</td>
<td>6 teaspoons</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**How do I count the oils I eat?**

The chart gives a quick guide to the amount of oils in some common foods:

<table>
<thead>
<tr>
<th>Amount of Food</th>
<th>Amount of Oil</th>
<th>Calories from Oil</th>
<th>Total Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oils</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetable oils (such as canola, corn, cottonseed, olive, peanut, safflower, soybean, and sunflower)</td>
<td>1 Tbsp</td>
<td>3 tsp/14 g</td>
<td>120</td>
</tr>
<tr>
<td>Oils</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Margarine, soft (trans fat free)</td>
<td>1 Tbsp</td>
<td>2½ tsp/11 g</td>
<td>100</td>
</tr>
<tr>
<td>Mayonnaise</td>
<td>1 Tbsp</td>
<td>2½ tsp/11 g</td>
<td>100</td>
</tr>
<tr>
<td>Mayonnaise-type salad dressing</td>
<td>1 Tbsp</td>
<td>1 tsp/5 g</td>
<td>45</td>
</tr>
<tr>
<td>Italian dressing</td>
<td>2 Tbsp</td>
<td>2 tsp/8 g</td>
<td>75</td>
</tr>
<tr>
<td>Thousand Island dressing</td>
<td>2 Tbsp</td>
<td>2½ tsp/11 g</td>
<td>100</td>
</tr>
<tr>
<td>Olives, ripe, canned</td>
<td>4 large</td>
<td>½ tsp/ 2 g</td>
<td>15</td>
</tr>
<tr>
<td>Avocado*</td>
<td>½ med</td>
<td>3 tsp/15 g</td>
<td>130</td>
</tr>
<tr>
<td>Peanut butter*</td>
<td>2 T</td>
<td>4 tsp/ 16 g</td>
<td>140</td>
</tr>
<tr>
<td>Peanuts, dry roasted*</td>
<td>1 oz</td>
<td>3 tsp/14 g</td>
<td>120</td>
</tr>
<tr>
<td>Mixed nuts, dry roasted*</td>
<td>1 oz</td>
<td>3 tsp/15 g</td>
<td>130</td>
</tr>
<tr>
<td>Cashews, dry roasted*</td>
<td>1 oz</td>
<td>3 tsp/13 g</td>
<td>115</td>
</tr>
<tr>
<td>Almonds, dry roasted*</td>
<td>1 oz</td>
<td>3 tsp/15 g</td>
<td>130</td>
</tr>
<tr>
<td>Hazelnuts*</td>
<td>1 oz</td>
<td>4 tsp/18 g</td>
<td>160</td>
</tr>
<tr>
<td>Sunflower seeds*</td>
<td>1 oz</td>
<td>3 tsp/14 g</td>
<td>120</td>
</tr>
</tbody>
</table>

*Avocados are part of the fruit group, nuts and seeds are part of the meat and beans group.

Source: www.MyPyramid.gov

Page 2 of 2
Why We Eat What We Eat

The quest for food has shaped the development of our society. The search for sustenance has influenced population growth and urban expansion, has dictated economic and political theory, and has inspired wars. Food and the science of food touch our lives in numerous ways. Many religions follow strict dietary laws. Some of the earliest observations in the world of chemistry came from the preparation and cooking of food. Food has influenced technology, too. The water wheel, developed for the milling of grain, became a primary tool during the Industrial Revolution. Even class distinctions in some societies are determined by what foods are put on the table.

In the prehistoric world, humans were successful predators, and were able to cook, to cultivate plants, and to tame animals. By 10,000-12,000 years ago, the climate was mellowing on earth, with glaciers retreating - which provided excellent conditions for fast-growing plants to take hold. Settlements began to appear around the crops, so that humans would be ready and available for harvest. The grain that was grown attracted herbivorous animals, and sheep and goats became domesticated. It followed, then, that milk became a part of the human diet.

By 3,000-4,000 BC, humans were cultivating wheat, barley, lentils, olives, figs, dates and pomegranates - foods not unlike the typical Mediterranean diet that exists today. Primitive irrigation systems and simple harvesting tools, such as the sickle and plough, were also developed. Over the next few thousand years, huge advances were made - in the grinding and milling of grain, the beginnings of the spice trade, and in the evolution of beer and leavened bread.

During the middle ages, as in all other times, cooking was adapted to the ingredients and equipment that were available. By 1000 AD, the predecessors of the modern fish farms were in existence, which kept fish fresh until it was ready to be prepared and eaten. By 900 AD, teahouses and cook shops cropped up in many countries, with China the most advanced in this area. Shops that sold prepared noodles, wontons and barbecued meats were not uncommon. The concept of crop rotation also developed during this time, which made the land more productive, and produced complementary protein sources of grains and beans. Spices were becoming very commonly used not only for taste, but also for health. It was known early on, for instance, that cinnamon and cloves provided an antiseptic to the intestine - an important quality during these not-so-clean times. Salting and drying became the primary preservation methods, and salt became one of the most powerful factors in the world economy.

The discovery of the New World meant the discovery of new foods. When the Spaniards cruised the Caribbean and tropical Americas, they found a shortage of food animals, with insects and worms the protein staples in the diet. There was an incredible variety of new species available, but by far corn became the most important of all the new foods. By the time Columbus landed in the New World, the inhabitants had developed more than 200 varieties of corn. Eventually, these corn seeds made their way back to the Mediterranean and the Near East and by the 1500s corn became an important crop in China. Other items native to the Americas were tomatoes, avocados, beans, chilies and fish - all foods associated with South American cooking today. Overall, America contributed an incredible variety of foods to Europe, including tomatoes, corn, pineapples, green beans, kidney beans, limas, chocolate, peanuts, vanilla, peppers, tapioca, turkey and chewing gum.

The first colonists settled in the early 1600s. By all historical accounts, they likely would not have survived without the generosity of the native Indians, since the colonists are uniformly described as incompetent, argumentative, ignorant and ill equipped with tools. The Pilgrims landed in Plymouth in 1620, bringing with them seeds of wheat and rye. However, corn still flourished, and the pattern of East Coast eating was established - hominy, succotash, corncakes, fish, beans, oysters, duck and ham were staples of the diet during this period.

The necessity for convenience foods during travel fostered their development during the next hundred years or so. Sea travel posed special problems, since ships needed to carry men, cargo and ammunition,
in addition to food and water. The staple food item was the sea biscuit, made with flour and water, but it proved inedible to all but the weevils that took up residence in them. The dried, salted meats that were offered to the sailors were inedible, but proved to be the perfect substance for carving intricate trinkets and snuffboxes. After months of sea travel, and without the intake of fresh fruits and vegetables, an epidemic of scurvy developed. This "sailor's disease" was characterized by bleeding, swollen gums, and many died of starvation. Although the treatment was soon discovered, it took many years for officials to approve fresh fruit and vegetable rations, deeming them too expensive. By the 1700's, the British navy accepted the notion that citrus could prevent and treat scurvy, and lemon and lime juice rations were added to the diet. Most sailors often mixed their rations with rum.

For land travel, food that was light and compact was needed. Some could live off the land somewhat, but many carried pemmican, a mixture of fat, dried cherries and marrow. This high fat concoction provided significant calories for the long treks across the land. Fat was also used to seal containers that were packed with meat to keep it fresh. The first bouillon cubes were called "pocket soup" – highly concentrated stock with a glue-like consistency that was broken into pieces and mixed with water.

The Industrial Revolution changed the availability, distribution and production of food like never before. The 19th century brought with it huge growth in towns (the population of New York multiplied 80 times between 1800 and 1900), and expansion of roads and railways. Interestingly, this period also brought the first food adulteration. With a rapidly increasing population, the food industry had a difficult time dealing with shortages of materials and in an effort to keep costs down, bulked up food items with questionable fillers. Tea was a particular target for adulteration because the taxes were so high – scavengers were sent to retrieve used tea leaves from restaurant trash bins, and the leaves were dried, stiffened with a gum solution, and then dyed with black lead.

By the 1850s the expanding industrial society experienced the most radical influence on the quality and quantity of food available – the railway system. Previously, horse or oxen had hauled items, but the amount they could carry was limited. Bulky items could be shipped via the waterways, but items sent in this manner were really only available to those who lived near the water. The railways were fast and could carry huge loads. Meat quality improved, since carcasses were transported rather than live animals, and fresh milk was brought in from the country, rather than being dispensed in town from old cows living in the city.

The first canned foods appeared in England during the early part of the 19th century. For a while, these foods were more expensive than fresh, but they provided convenience for those who traveled (cows took up a lot of room on ships). The mass production of canned products appeared in the 1870s, and soon after mechanical devices were developed to prepare foods for the canning process. By the end of the 19th century, manufacturers used their knowledge of pasteurization to heat foods to the proper temperature for the proper length of time, leading to huge improvements in quality, taste and safety of the canned products.

Foods were kept cold during this time in "ice houses" which were built with double walls and triple roofs and stone floors. People were, however, dependent upon nature for the ice. Manufactured ice was produced in the mid-1800's, following the development of compressed air refrigerators. Most stoves at this time were wood burning, with gas versions available by about the 1880s. Electric stoves were not in full use until the 1920s.

While we are hard pressed to imagine life without chilled foods, frozen foods, canned foods, convenience foods, preservatives, transportation, tools, microwaves – we are now offered new sweeteners, new fat substitutes, juice boxes, aseptic meat packages, freeze dried items and "functional foods". Manufacturers and food technologists are scrambling to provide what consumers want most – taste, cost, and convenience. No doubt, the technological explosion will continue to affect why we eat what we eat.

Source: UCLA Center for Human Nutrition, Nutritional Anthropology
AN INTERNATIONAL MENU

SUBJECTS: Language Arts, Social Studies

STUDENT SKILL: (LA) The student will recognize the origins and meanings of foreign words frequently used in English. (SS) The student will compare and contrast common characteristics of culture, such as language, customs, shelter, diet, traditional occupations, belief systems, and folk traditions.

OBJECTIVE: The student will use dictionaries to research etymologies and explore the diverse origins of common foods we eat.

BACKGROUND

etymology—The origin and historical development of a word as shown by determining its basic elements, earliest known use and changes in form and meaning, tracing its transmission from one language to another, and identifying its cognates in other languages.

English is the language spoken by most of the people in the United States, even though our country is made up of people whose ancestors spoke many different languages. The native people who lived on this continent before Europeans came to settle it spoke many different languages also. The first Europeans to settle on the east coast spoke English, Dutch and German. Those who settled on the west coast spoke Spanish. French-speaking traders traveled all through the land, following the waterways. As more land was opened for settlement, English-speaking people found their neighbors were people who spoke Italian, Hungarian, Swedish, Chinese and many other languages.

Of the 1,000 major food crops harvested each year in North America, only Jerusalem artichokes, sunflowers, pecans, blueberries and cranberries are native. Each group of people who came to our shores brought their own foods. The Dutch brought cookies, waffles and coleslaw; the English brought biscuits and...
cheese. But they also found many new foods in the Americas for which they had no names. For some of the new foods they borrowed names from familiar European foods to which the new foods were similar. The English word "corn" is the name for all kinds of cereal grains—oats, barley, wheat, etc. Even today, corn in British English has a different meaning than it does in American English. All but a few varieties of beans originated in the New World, but English settlers gave them an English name, after the varieties they knew in the Old World. Peanuts, which are native to South America, were given their name because they are related to peas but taste like nuts.

The many varieties of chili peppers Columbus found in the New World have no relation to the black pepper which grows in the Far East. But since pepper was what he was looking for when he set out on his voyage, that was the name given to the spicy fruits he took back with him.

Some of the new foods were given names based on their appearance. The pale pink blossom of the cranberry resembles a crane, so settlers named it "cranberry."

For many of the new foods, European settlers simply used the names the native people had already given them. Squash comes from the Massachusetts word "akootasquash." Massachusetts was the language spoken by the people living in the area we now know as Massachusetts at the time the English began settling there. Tomatoes are native to an area once occupied by the Nahuatl people in what we now know as Mexico. The word "tomato" comes from the Nahuatl word "tomatl."

The foods Americans eat are a conglomeration of the foods of many lands. Many of our favorite foods have French names—soup, hash (from the French "hasher," to chop), casserole, mayonnaise—and Italian names—macaroni, broccoli, cantaloupe, bologna, pizza, spaghetti. The hamburger, probably the most American of all American foods, is named for a place in Germany. Even ketchup, our favorite condiment, takes its name from a Chinese word for sauce, "ketsiap." Ketsiap is a pickled fish sauce which was adapted from the Chinese by the Malay people and served to English sailors. Americans added the tomatoes.

ACTIVITY
1. Divide students into groups of three or four, and provide one or two dictionaries for each group.
2. Ask students to name foods they know originated in foreign countries and name the country where they think the food
originated. List the foods and countries on the chalkboard.

3. Have students look up one or two of the foods in the dictionary. Explain the meaning of the word “etymology,” and show students how to find the etymology of a word at the beginning or end of the dictionary entry. Then direct students to the front of the dictionary where abbreviations used in the etymologies are listed. Have students read the abbreviations for you to write on the chalkboard.

4. Share background material. Have students brainstorm to find other ways besides foods that foreign words enter the English language (place names, new technology, fashion, etc.) List examples on the chalkboard.

5. Hand out student worksheets, and discuss the instructions. Students may take the worksheets home and complete them independently or work in groups, using the dictionaries available in the classroom.

ADDITIONAL ACTIVITIES

1. Have students list their favorite foods, look up their origins in the dictionary and locate the country of origin on a world map.

2. Have students bring food from home representing different ethnic groups for a tasting party. Students may also research and dress in the costume of the country from which their ethnic dishes originated.

3. If you have an Asian food store in your area, take your class on a field trip to visit it. Arrange for someone from the store to talk to students about how the different foods are used.

EXTRA READING


EVALUATION

A teacher answer page is provided, based on The American Heritage Dictionary, 2nd College Edition. Answers may vary slightly, depending on the dictionary the student uses.
Skills: Science (changes in matter, measuring), Language Arts (reading, writing, oral language), Social Studies (geography, world culture, natural resources)

Objective: Students will follow instructions to make tortillas in a bag and learn about breads around the world.

Background

Bread may be the ancestor of all prepared foods. The first bread was made in Neolithic times, nearly 12,000 years ago. It was probably made by crushing grain and mixing it with water. The dough was then baked in the sun or laid on heated stones and covered with hot ashes. The Hopi of New Mexico still make a traditional bread, called “piki bread,” by mixing juniper ash with cornmeal and spreading it on a hot stone. Then they lift the paper-thin layer from the stone by rolling it like a jelly roll.

Bread can be unleavened or leavened with yeast. When flour comes in contact with water and remains idle for a period of time, it begins to rise. In modern processes, yeast is added to aid in the rising, but even without yeast, dough will begin to ferment, and the resulting gases will cause the dough to rise. The Egyptians were the first to discover that this process would produce a light, expanded loaf. The Egyptians also invented a closed oven in which to bake the bread.

The ancient Hebrews were in such a hurry to get away from their Egyptian captors that they made their bread without leavening. Today Jewish people celebrate Passover, their escape from the Egyptians, with unleavened bread—matzo. Bread without leavening also represents truth in Jewish tradition, because bread that is unleavened retains the true flavor of the grain from which it is made.

Traditionally, people made bread from whatever grain grew best in the area where they lived. Wheat, rye, corn, barley, millet, kamut and spelt are some of the grains used around the world. Wheat flour is preferred because of its gluten content. Gluten is what gives bread its elastic quality.

Bread is such a powerful food that ancient Egyptian governments controlled its production and distribution as a means of controlling the populace. In France the shortage of bread helped start the French Revolution.

Wheat originated in the Middle East and came to our continent with European settlers. Before that, maize was the grain used for bread-making in the Americans. Maize is what we now call corn, but the word “corn” actually means any kind of grain. For centuries, maize was used to make a flat bread...
that we know as tortillas. According to Mayan legend, tortillas were invented by a peasant for his hungry king. The first tortillas were made over 12,000 years ago. Today they are also made with wheat.

Among native Mexicans, tortillas are commonly used as eating utensils. In the Old West, cowpokes realized the versatility of tortillas and used tortillas filled with meat or other foods as a convenient way to eat around the campfire.

The average American eats 199 tortillas each year. In 2000, Americans consumed about 85 billion tortillas (not including tortilla chips).

Flour tortillas are a low-fat food and contain iron along with other B vitamins. They have about 115 calories with 2-3 grams of fat per serving. Corn tortillas are a low-fat, low-sodium food and contain calcium, potassium and fiber. An average serving contains about 60 calories with 1 gram of fat.

Science

1. Bring a variety of leavened and unleavened breads to class, and have students compare and contrast. Ask if anyone knows what makes flat (unleavened) breads different from leavened breads. Experiment with leavening. Mix one batch of dough using water, flour and yeast and another batch using flour and water only. Have students hypothesize what will happen with each batch, then observe them over several hours and record their observations.

2. Make Tortillas in a Bag (See recipe on Student Worksheet B).

3. The tortilla recipe included with this lesson calls for baking powder, which provides a small amount of leavening. Have some of your students make the tortillas with leavening and some make them without. Compare texture, flavor, appearance, etc.

4. Substitute whole wheat flour for white flour in the tortilla recipe, and have students compare flavor, texture, appearance, etc.

Social Studies

1. Read and discuss background and ask students to list some of the reasons people in different parts of the world eat different kinds of food. Why do people in different families eat different kinds of foods?

2. Hand out the student worksheet, “Breads Around the World,” and have students work in groups or individually to complete it.

3. On a map of the world, have students place map pins showing where the different breads described on the worksheet originated.

4. Have students research to find the origins of the following grains used in bread making: wheat (Middle East), rye (southwestern Asia), corn (Americas), barley (Ethiopia), millet (Africa or Asia), kamut (Egypt or Asia Minor) and spelt (Middle East).
**Language Arts**

1. Brainstorm the different kinds of bread, and have students name their favorites. Write the kinds of bread on the chalkboard.
2. Show students some of the different kinds of breads and grains you have brought to class, and ask students to name them if they can.
3. Have students write instructions for making tortillas to share with their parents or another class or have them share the instructions orally.
4. Have students write invitations to parents for a multicultural night, and serve a variety of breads from around the world. Assign students to report on the origins of the different kinds of breads.

**Extra Reading**


**Vocabulary**

**barley**—a cereal grass with flowers in dense spikes; also: its seed used especially in foods (as soups and cereals), or as feed for livestock

**bread**—a baked food made of flour or meal

**fiber**—mostly indigestible material in food that stimulates the intestine to move its contents along

**gluten**—a tough elastic protein substance in flour especially from wheat that holds together dough and makes it sticky

**kamut**—an ancient relative of durum wheat

**leavened**—raised (dough) with a leaven, or material (as baking powder) used to produce a gas that makes dough or batter rise and become light

**maize**—Indian corn

**rye**—a hardy annual cereal grass widely grown for grain and as a cover crop

**spelt**—a kind of wheat

**tortilla**—a thin round of unleavened cornmeal or wheat flour bread

**unleavened**—made without leavening.

**wheat**—a cereal grain that can be made into a fine white flour used mostly in breads, baked goods (as cakes and crackers), and pasta as (as macaroni or spaghetti) and that is used in animal feeds

**yeast**—a one-celled fungus that produces alcohol during the process of fermentation; a commercial product containing living yeast cells that is used mostly as a leaven especially in baking bread
## Food Advertising Strategies

Advertisers have many methods to try and get you to buy their products. Lots of times, what they are selling is a lifestyle, or an image, rather than the product. Here are some tricks of the trade.

<table>
<thead>
<tr>
<th>Ideal Kids (or families)</th>
<th>Heart Strings</th>
</tr>
</thead>
<tbody>
<tr>
<td>- always seem perfect.</td>
<td>- are ads that draw you into a story and make you feel good, like the McDonalds commercial where the dad and his son are shoveling their driveway and the son treats his poor old dad to lunch at McDonald's when they are done.</td>
</tr>
<tr>
<td>The kids are really hip looking, with the hottest fashions and haircuts, and toys. Ideal families are all attractive and pleasant looking -- and everyone seems to get along! Ideal kids and families represent the types of people that kids watching the ad would like themselves or their families to be.</td>
<td></td>
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<tr>
<td><strong>Family Fun</strong> - a product is shown as something that brings families together, or helps them have fun together; all it takes is for mom or dad to bring home the &quot;right&quot; food, and a ho-hum dinner turns into a family party.</td>
<td></td>
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<tr>
<td><strong>Excitement</strong> - who could ever have imagined that food could be so much fun? One bite of a snack food and you're surfing in California, or soaring on your skateboard!</td>
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<tr>
<td><strong>Star Power</strong> - your favorite sports star or celebrity is telling you that their product is the best! Kids listen, not realizing that the star is being paid to promote the product.</td>
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<tr>
<td><strong>Bandwagon</strong> - join the crowd! Don't be left out! Everyone is buying the latest snack food: aren't you?</td>
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<td><strong>Scale</strong> - is when advertisers make a product look bigger or smaller than it actually is.</td>
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<td><strong>Put Downs</strong> - are when you put down your competition's product to make your own product seem better.</td>
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<tr>
<td><strong>Facts and Figures</strong> - are when you use facts and statistics to enhance your product's credibility.</td>
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<tr>
<td><strong>Repetition</strong> - advertisers hope that if you see a product, or hear it's name over and over again, you will be more likely to buy it. Sometimes the same commercial will be repeated over and over again.</td>
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</tbody>
</table>

**Source:** Media Awareness Network
Dietary Guidelines for Healthy Children

AHA Scientific Position

The American Heart Association has dietary recommendations for infants, children and adolescents that are designed to promote cardiovascular health:

The American Heart Association recommends this eating pattern for families:

- **Energy** (calories) should be adequate to support growth and development and to reach or maintain desirable body weight.

- Eat foods low in saturated fat, trans fat, cholesterol, salt (sodium), and added sugars. **Total fat:** Keep total fat intake between 30 to 35 percent of calories for children 2 to 3 years of age and between 25 to 35 percent of calories for children and adolescents 4 to 18 years of age, with most fats coming from sources of polyunsaturated and monounsaturated fatty acids, such as fish, nuts and vegetable oils.

- Choose a variety of foods to get enough carbohydrates, protein and other nutrients.

- Eat only enough calories to maintain a healthy weight for your height and build. Be physically active for at least 60 minutes a day.

- Serve whole grain breads and cereals rather than refined grain products. Look for “whole grain” as the first ingredient on the food label and make at least half your grain servings whole grain. Recommended grain intake ranges from 2 oz./day for a one-year-old to 7 oz./day for a 14-18 year old boy.

- Serve a variety of fruits and vegetables daily, while limiting juice intake. Each meal should contain at least 1 fruit or vegetable. Children’s recommended fruit intake ranges from 1 cup/day, between ages 1 and 3, to 2 cups for a 14-18 year old boy. Recommended vegetable intake ranges from ¾ cup a day at age one to 3 cups for a 14-18 year old boy.

- Introduce and regularly serve fish as an entrée. Avoid commercially fried fish.

- Serve non-fat and low-fat dairy foods. From ages 1-8, children need 2 cups of milk or its equivalent each day. Children ages 9-18 need 3 cups.

- Don’t overfeed. Estimated calories needed by children range from 900/day for a 1-year-old to 1,800 for a 14-18-year-old girl and 2,200 for a 14-18-year-old boy.

This eating pattern supports a child's normal growth and development. It provides enough total energy and meets or exceeds the recommended daily allowances for all nutrients for children and adolescents, including iron and calcium.

Source: American Heart Association
Exercise (Physical Activity) and Children

**AHA Scientific Position**

Physical inactivity is a major risk factor for developing coronary artery disease. It also increases the risk of stroke and such other major cardiovascular risk factors as obesity, high blood pressure, low HDL ("good") cholesterol and diabetes. The American Heart Association recommends that children and adolescents participate in at least 60 minutes of moderate to vigorous physical activity every day.

**Why is exercise or physical activity important for my child?**

Increased physical activity has been associated with an increased life expectancy and decreased risk of cardiovascular disease. Physical activity produces overall physical, psychological and social benefits. Inactive children are likely to become inactive adults. And physical activity helps with

- controlling weight
- reducing blood pressure
- raising HDL ("good") cholesterol
- reducing the risk of diabetes and some kinds of cancer
- improved psychological well-being, including gaining more self-confidence and higher self-esteem

**How do I promote physical activity in my child?**

- Physical activity should be increased by reducing sedentary time (e.g., watching television, playing computer video games or talking on the phone).
- Physical activity should be fun for children and adolescents.
- Parents should try to be role models for active lifestyles and provide children with opportunities for increased physical activity.

**What if my child is uncoordinated or overweight?**

All children, even less-coordinated ones, need to be physically active. Activity may be particularly helpful for the physical and psychological well-being of children with a weight problem.

**The American Heart Association recommends:**

- All children age 2 and older should participate in at least 30 minutes of enjoyable, moderate-intensity activities every day.
- They should also perform at least 30 minutes of vigorous physical activities at least 3–4 days each week to achieve and maintain a good level of cardio-respiratory (heart and lung) fitness.
- If your child or children don't have a full 30-minute activity break each day, try to provide at least two 15-minute periods or three 10-minute periods in which they can engage in vigorous activities appropriate to their age, gender and stage of physical and emotional development.

Source: American Heart Association
Fad Diets: The Whole Truth

A Three Ring Circus
Pick up a magazine, tune into the news, browse through any bookstore - and you'll discover a new diet book. Some defy logic, basic biochemistry and appetite appeal and should be relegated to the science fiction section. Others promise quick and easy results.

Unfortunately, the one thing most popular diet books have in common is that they seldom promote sound weight loss. If you're confused about which may be appropriate for you or which ones are legitimate, you're not alone. A recent nutrition trends survey conducted by the American Dietetic Association (ADA) revealed that nearly one in four Americans (23%) is confused or frustrated about diet information.

Juggling the Statistics
According to the ADA:
• Fifty-eight million adult Americans are overweight; 40 million are obese; 3 million are morbidly obese
• The number of overweight adults in the United States has risen from 28 percent in 1980 to more than 64 percent in 2002
• Nearly half the American adult population is on a diet
• Each year Americans spend more than $46 billion on weight-loss products - often for gimmicks that don't work

Best-selling Books Aren't Always the Best Bet
If you're one of the 58 million who wants to lose weight, you might be ready to try just about anything. But before you 'Enter the Zone' or pursue 'Protein Power', take a closer look at the science behind the claims. You may be putting your health at risk, without reaching your weight-loss expectations. For example, several best-selling books tout protein as the answer to weight loss and peak fitness, so it's natural to wonder if these claims have merit. The truth is, they're just that - claims. The theory behind these gimmicks is a mistaken belief that Americans should be eating a high-protein diet rather than focusing on carbohydrates. These current high-protein, low-carbohydrate diets are a rehash of the '60s and '70s protein craze. These diets fell from fashion because they were ineffective over the long run.

The Disappearing Science Trick
Fad diets offer testimonials from "carbohydrate phobics" who swear by high-protein diets. However, they haven't a shred of science to back their promises. Validated science states that a hypothesis is true once tested and clearly demonstrated.

In contrast, fad diets depend on unproved claims based on case histories, testimonials, anecdotal support and unpublished, poorly controlled studies. They fail to use standard protocols such as double-blind, placebo-controlled studies published in peer-reviewed journals to justify their claims.

Some books can be intimidating and convincing to anyone unfamiliar with biochemistry. Jeanne Goldberg, Ph.D., R.D., director of the Nutrition Communication Graduate Program, Tufts University, Medford, Mass., believes the pseudo-science in popular diet books comes across as authoritative, and appears to promise some special secret.

"The books are so confusing and so complicated that the average reader assumes what's stated must be true," she said. "You don't need to be scientifically savvy to eat. You just need some common sense. But people don't want that - they want a miracle."

Other critics say these books simply cash in on the American dream - our quest for a breakthrough in the pursuit of slimness. ADA spokesperson Kathleen Zelman, M.P.H., R.D., said fad diets prevail because there is always somebody desperate to lose 10 pounds, and desperate for a quick fix.

Source: www.wheatfoods.org/_FileLibrary/Product/9/FadDiets.pdf
"The problem is the majority believe what the media says, so if it's in print or on television it must be true," Zelman said. "In the end, it becomes increasingly difficult for the public to distinguish fact from fiction."

**Why the High-Protein Hype?**
The protein craze makes headlines for two reasons. First, distrust of "established" nutrition advice, specifically a backlash against high-carbohydrate diets, continues to grow. Second, the public is weary from adhering to low-fat recommendations, while their weight continues to climb. The truth is, Americans are getting heavier because we are exercising less.

A high-protein diet doesn't build muscle and burn fat as some people may think. Only regular physical activity builds muscle strength and burns stored body fat. Protein is a vital nutrient, but national surveys show virtually all Americans get adequate amounts. Studies show that while some consumers are getting enough grain foods, many are not and consumption of whole grains is far below recommended levels.

**Carbs Falsely Accused**
Some protein-promoting diets claim that eating carbohydrates is harmful because carbohydrates cause the secretion of the hormone insulin. In truth, insulin is an essential hormone that helps transfer the natural sugars of digested foods from the bloodstream to the body's cells, where these sugars fuel our activities. Many diet books falsely accuse carbohydrate intake for causing cravings, insulin resistance and weight gain for millions of people. There is no scientific evidence that carbohydrates stimulate appetite or lead to fat storage and weight gain.

**Balancing Your Health On a Tightrope**
Diet high in protein are usually higher in fat and can raise cholesterol, if followed over a long time. Excess protein can also lead to potential health risks, from kidney damage to osteoporosis.

The advent of the Zone diet and its many spin-offs, including the popular South Beach Diet, has turned the high-protein diet into a long-term trend, even though most experts, such as Riska Platt, M.S., R.D., spokesperson for the AHA, scoff at the premise of these diets.

She reports, "Heart disease is still the No. 1 killer in our nation. Weight loss can help reduce your risk of heart disease, if you are overweight. However, losing weight on a high-protein diet can be potentially dangerous to heart health (by raising saturated fat and cholesterol levels).

And if you eliminate carbohydrates you lose out on protective vitamins and minerals from fruits, vegetables and grains."

**The "Pull a Rabbit From a Hat" Trick**
Nutrition experts say the reason some diets work for some people, at least for a while, has nothing to do with balancing hormones or undoing insulin resistance. If you follow these diets as directed, you take in so few calories - about 800 to 1,400 a day - that you are almost guaranteed to lose weight.

Fad diets inevitably fail because they categorize some foods as "good" and most others as "bad." In truth, all foods can and should fit into a healthful eating plan. The key is to eat a well-balanced, low-fat, high-carbohydrate diet made up of foods you like. Avoid the quick-fix temptation of crash diets and unrealistic regimens that keep you hungry or restrict your food choices. The diets usually don't work and result in mostly water-weight loss, not sustainable losses of body fat.

Source: www.wheatfoods.org/_FileLibrary/Product/9/FadDiets.pdf
Looking Good and Living Healthy
So how can you find a way to lose weight and keep it off for good without wrecking your health? Leading nutrition experts agree the best diet:
• Includes a variety of foods you enjoy from all food groups;
• Promotes weight loss of no more than one to two pounds a week; and
• Uses regular moderate activity to achieve and maintain a reasonable weight.

Let Common Sense Guide You
The bottom line is to shift the focus from shedding pounds to achieving a healthier lifestyle. To do this, trust your instincts, use good judgment when evaluating an eating plan and return to the basics. Grain foods such as bread, cereal, pasta, tortillas and bagels may be one of today's most overlooked weight management tools. "Try moderation and get your diet in line with the MyPyramid Food Guide System," Goldberg advises. "Eat more carbohydrate-rich foods from the grain category."

Six Signs of a Fad Diet
Want to lose weight but are confused by numerous books that promise the latest diet breakthroughs? Here are some tips from the American Heart Association (AHA) that can help you recognize a fad diet. Say NO to diets that advocate:

Magic or miracle foods - Foods don't burn or melt fat away. There are no "super foods" that can undo the long-term effects of overeating and lack of activity.

Rapid weight loss - Sound weight loss plans aim for losing no more than one to two pounds per week. Studies show that gradual weight loss increases your success for keeping it off permanently.

No exercise - Simple activities like walking or riding a bike are important tools to losing and maintaining weight loss. Yet many "fad" diets don't emphasize these easy changes. An increase in any daily activities that fit your lifestyle will help you to burn more calories.

Bizarre quantities - Foods that are emphasized or others not allowed, such as unlimited amounts of cabbage soup or grapefruit; or avoiding dairy or carbohydrate-rich foods, should raise concern. Forbidding certain foods or entire food groups, in addition to being unhealthy, may increase the likelihood that you will cheat, binge or just give up on the diet.

Specific food combinations - Eating the "wrong" combination of foods does not cause them to produce toxins or turn to fat. There is no scientific proof that combining or sequencing specific foods enhances weight loss.

Rigid menus - Limiting food choices and adhering to specific eating times is a daunting, unpleasant task. Rather, look for a plan that you can realistically follow for a lifetime - one that emphasizes a variety of grain foods, vegetables, fruits, lean meats and low-fat dairy products.

Source: www.wheatfoods.org/_FileLibrary/Product/9/FadDiets.pdf
Truth Behind the Claims

Claim: Dr. Robert Atkins stated, “his diet makes 'bad' cholesterol fall and 'good' cholesterol rise” (Associated Press, 10/25/99). He also claimed that “there is no scientific evidence whatever that the diet has harmful effects” (NBC's Dateline, 9/27/99).

False: A study published in the Journal of the American Dietetic Association (1980) looked at the consequences of a high-protein, low-carbohydrate diet. The research subjects followed Dr. Atkins' Diet Revolution. Subjects' total cholesterol and "bad" cholesterol (LDL-C) levels increased, while "good" cholesterol (HDL-C) levels decreased. These changes were particularly alarming in the women subjects, whose LDL shot up nearly 33 percent.

The authors concluded that "diets, such as this [Dr. Atkins' Diet Revolution], may increase the long-term risk of atherosclerosis" - a disease characterized by sudden spurts in the growth of fat and cholesterol-loaded deposits that clog arteries, which may lead to heart disease. Research conducted in the past 25 years supports this outcome- low carbohydrate high protein diets drive cholesterol levels up.

Claim: Atkins states that there is no scientific evidence that a person’s kidneys can be made worse by high-protein intake. (CNN, 10/21/99).

False: The Center for Disease Control & Prevention states "A diet high in proteins can cause more damage to your kidneys over time." The National Kidney Foundation recommends reducing dietary protein intake to slow down the progression of kidney disease.

Claim: Atkins' stated that “ketones" are better brain food than glucose, citing Dr. George Cahill (CNN, 10/21/99).

False: Cahill discusses ketones in terms of starvation. "Ketoacid levels in blood become elevated over the first week, and the brain preferentially uses these instead of glucose." (Clin. Edocrinol. Metab. 1976.) Only when a person is starving to death, does the body resort to ketones. Very low-carbohydrate intake induces ketosis, which is most commonly seen in starvation, alcoholics or untreated insulin-dependent diabetics. Normally, glucose (which only comes from carbohydrates) is the body's preferred food/fuel for the brain.

Claim: In his book, Atkins stated that while the percent of calorie intake from fat has decreased, the percentage of Americans who are overweight has increased - suggesting that the rise in obesity is due to carbohydrate intake.

False: While percentage of fat from calories has dropped, total fat and caloric intake has not dropped. Americans are eating more calories and more fat now than in the 1950s. The average daily consumption between 1976 and the early 1990s is about 300 more calories per day. The USDA Healthy Eating Index shows Americans already eat plenty of protein and fat, but fall short of meeting dietary goals for grains, fruits and vegetables (so how could they account for the weight gain). (Source: U.S. Dept. of Agriculture.)

Claim: Eating more protein and fewer carbohydrates is the best way to lose weight.

Fact: The only way to shed pounds is by decreasing the calories you take in and increasing the calories you burn off. Nutrition experts agree that the healthiest way to cut calories is to increase physical activity and consume a low-fat, high-carbohydrate diet rich in grains, fruits and vegetables. You can reduce fat and calorie intake without reducing food intake by shifting to high-carbohydrate, low-fat foods such as pasta, bread, tortillas, bagels and other grain-based foods.

Source: www.wheatfoods.org/_FileLibrary/Product/9/FadDiets.pdf
**Claim:** A high-carbohydrate eating plan increases muscle fatigue and decreases mental alertness.

**Fact:** Carbohydrates are the body's primary fuel for activity and the only form of energy used by the brain. To keep energized and beat brain drain on the job, don't leave home without breakfast, and do not go longer than four to five hours between meals and snacks.

**Claim:** Carbohydrates stimulate the appetite and are addictive.

**Fact:** Complex carbohydrates provide long-term energy and they help jump-start your metabolism. As your metabolism speeds up, your body burns calories more efficiently and you may get hungry between meals. This sometimes is mistakenly associated with carbohydrate cravings. Studies show that for some people, fueling up with several small meals throughout the day is better than three big meals.

**Claim:** A high-carbohydrate eating plan enhances insulin resistance, which causes the body to store excess carbohydrate as fat.

**Fact:** Carbohydrate consumption does not promote insulin resistance. According to the American College of Sports Medicine and the ADA, "Symptoms of insulin resistance occur most often among people who are overweight and sedentary and can usually be reversed or diminished by adopting moderate exercise and healthy eating."

Source: www.wheatfoods.org/_FileLibrary/Product/9/FadDiets.pdf
Twists and Turns of Fad Diets

1960
Robert Cameron introduces the Drinking Man's Diet, which claims people can lose weight by eating steak and drinking red wine. Cameron subsequently undergoes coronary bypass surgery.

1967
Dr. Irwin Stillman publishes the *Quick Weight Loss Diet*, describing how he overcame middle-age obesity and a heart attack by cutting carbohydrates and consuming large quantities of water.

1972
Dr. Atkins' Diet Revolution, a high-protein, low-carbohydrate diet, promotes ketosis, in which a semi-starving body burns fat for fuel. Atkins is called to testify before the Senate Select Committee on Nutrition and Human Needs in 1973 because of charges against the diet from the American Medical Association.

1973
At age 25, Richard Simmons begins his career as fitness guru, video master and author by opening a Beverly Hills restaurant and exercise studio.

1978
*The Complete Scarsdale Medical Diet*, by Dr. Herman Tarnower, is the latest of the popular high-protein, low-carbohydrate diets.

1979
The restrictive Pritikin Program recommends a high-fiber diet with less than 10 percent of calories from fat, no added salt or sugar and regular aerobic exercise.

1980
Diarrhea is a common side effect of the six-week Beverly Hills Diet, which starts dieters off with 10 days of nothing but fruit and water.

1988
The liquid diet Optifast, made famous by Oprah Winfrey's 67-pound weight loss, becomes infamous when Winfrey gains all the weight back and then some.

1991
Robert Pritikin, following in his father Nathan's footsteps, publishes *The Pritikin Weight Loss Breakthrough* as part of the new Pritikin Program.

1996
Fen-Phen (fenfluramine and phentermine) is the diet pill of choice with an estimated 6 million Americans taking the appetite suppressant. Fen-Phen is pulled from the shelves in September 1997 because 25 percent to 30 percent of the people who took fenfluramine experienced some heart valve damage.

1995
High-protein diets make a comeback. In *Enter the Zone*, Barry Sears recommends eating lots of protein, fruits and vegetables, while greatly reducing carbohydrates, such as pastas, breads, rice and potatoes. The book sells approximately 400,000 copies.

Source: [www.wheatfoods.org/_FileLibrary/Product/9/FadDiets.pdf](http://www.wheatfoods.org/_FileLibrary/Product/9/FadDiets.pdf)
1996
*Protein Power*, by Michael and Mary Eades, claims the amount of carbohydrates required by humans for health is zero. Barry Sears' follow-up to *Enter the Zone*, titled *Mastering the Zone*, spends 18 weeks on Publishers Weekly Bestseller list.

1997
Dr. Bob Arnot's *Revolutionary Weight Control Program* hits the stands, calling refined carbohydrates the dietary equivalent of "crack" because "you need them all day in order to feel good."

1998
*SugarBusters!* by H. Leighton Steward, Morrison C. Berthea, Sam S. Andrews and Luis A. Balart, claims all sugar is toxic and that potatoes, corn, white rice, white bread, sodas and beer must be completely eliminated from the diet. *SugarBusters!* spends 25 weeks on the New York Times bestseller list.

Dr. Atkins *New Diet Revolution* is a slightly modified version of his 1972 book, referring to insulin as the "fat -producing hormone." Atkins' recipes call for heavy cream, butter and cheese and recommend bacon and eggs for breakfast everyday.

*Eat for Your Type*, by Dr. Peter D'Adamo, argues that blood type is an evolutionary marker of which foods each person will process well and which will be useless calories.

1999
Raw food diets claim that cooked foods lose the natural vitamins, nutrients, and enzymes necessary to build a strong immune system.

2001
The ‘New’ Atkins Diet is the same low carb – high protein plan with a more liberal maintenance plan.

South Beach Diet is just a new twist to low carb – high protein plans. The emphasis this time around is on ‘good’ carbs and ‘good’ fats and avoiding ‘bad’ carbs and ‘bad’ fats.

Dr. Phil's ultimate weight solution emerged as well. It divides foods into categories that elicit high or low response and focuses on cognitive restructuring.

Source: www.wheatfoods.org/_FileLibrary/Product/9/FadDiets.pdf
Walking

Walking is the original exercise – we have been doing it for over 3 million years! Before modern transportation, our ancestors walked everywhere and usually carried something with them. They were physically fit! These days, there is a machine or gadget to do many daily tasks that used to require us to be physically active. We do not have to walk to school, work or the store, or even move to change the television channel. One result: Many adults and children are heavy or very heavy.

Walking is a good, all-around workout for the human body, with a low occurrence of injuries. As an educator of children, you are a powerful role model and play a key role in helping children establish physical activity as a daily habit they value and enjoy.

Benefits Children Gain When They Walk

Walking . . .

• builds self-esteem
• develops a good wellness attitude
• builds strong bones
• develops good posture
• increases attentiveness
• stabilizes friendships
• increases or maintains muscle mass
• stabilizes blood pressure
• helps control disruptive behavior
• encourages use of senses
• helps control hyperactivity
• encourages drug-free living
• helps improve stress-coping ability
• improves physical coordination
• helps maintain healthy weight
• improves heart strength

Walking is inexpensive, requires no special equipment and can be done anytime, anywhere. The time it takes for a short walk is more than compensated by increased attentiveness and productivity for students and educators. But how much should kids walk?

A child in the fifth grade should walk at least 2000 steps per day (average 22" step length). This adds up to 0.8 miles and takes about 15 minutes. If a student walks 5 days per week during a 180-day school year, she or he can walk 144 miles per school year. Collectively, a class of 25 students can walk 3,600 miles.

For sixth graders, the minimum recommendation is 3000 steps per day. With a longer step length, this adds up to 1.4 miles and takes about 25 minutes. Collectively, a class of 25 students can walk 6,300 miles, if they walk 5 days per week during a 180-day school year.

Consider these ideas to increase walking:

• 5-minute walks prior to a test or quiz
• once-around-the-building walks instead of waiting in the cafeteria line
• before or after school walking clubs
• class walks to discuss and review key learning points

Source: www.uwyo.edu/wintherockies
What is physical activity?

Physical activity simply means movement of the body that uses energy. Walking, gardening, briskly pushing a baby stroller, climbing the stairs, playing soccer or dancing the night away are all good examples of being active. For health benefits, physical activity should be **moderate** or **vigorous** and add up to at least 30 minutes a day for adults and 60 minutes for kids.

Moderate physical activities include:
- Walking briskly (about 3½ miles per hour)
- Hiking
- Gardening/yard work
- Dancing
- Golf (walking and carrying clubs)
- Bicycling (less than 10 miles per hour)
- Weight training (general light workout)

Vigorous physical activities include:
- Running/jogging (5 miles per hour)
- Bicycling (more than 10 miles per hour)
- Swimming (freestyle laps)
- Aerobics
- Walking very fast (4½ miles per hour)
- Heavy yard work, such as chopping wood
- Weight lifting (vigorous effort)
- Basketball (competitive)

Some physical activities are not intense enough to help you meet the recommendations. Although you are moving, these activities do not increase your heart rate, so you should not count these towards the 30 or more minutes a day that you should strive for. These include walking at a casual pace, such as while grocery shopping and doing light household chores.

Why is physical activity important?

Being physically active is a key element in living a longer, healthier, happier life. It can help relieve stress and can provide an overall feeling of well-being. Physical activity can also help you achieve and maintain a healthy weight and lower risk for chronic disease. The benefits of physical activity may include:
- Improves self-esteem and feelings of well-being
- Increases fitness level
- Helps build and maintain bones, muscles, and joints
- Builds endurance and muscle strength
- Enhances flexibility and posture
- Helps manage weight
- Lowers risk of heart disease, colon cancer, and type 2 diabetes
- Helps control blood pressure
- Reduces feelings of depression and anxiety

Physical activity and nutrition work together for better health. Being active increases the amount of calories burned. As people age their metabolism slows, so maintaining energy balance requires moving more and eating less.

Some types of physical activity are especially beneficial:
- **Aerobic activities** - speeds heart rate and breathing and improves heart and lung fitness. Examples are brisk walking, jogging, and swimming.

Source: www.MyPyramid.gov
• **Resistance, strength building, and weight-bearing activities** – helps build and maintain bones and muscles by working them against gravity. Examples are carrying a child, lifting weights, and walking. They help to build and maintain muscles and bones.

• **Balance and stretching activities** – enhances physical stability and flexibility, which reduces risk of injuries. Examples are gentle stretching, dancing, yoga, martial arts, and t’ai chi.

**How much physical activity is needed?**

At a minimum, do *moderate* intensity activity for 30 minutes most days, or preferably every day. This is in addition to your usual daily activities. Increasing the intensity or the amount of time of activity can have additional health benefits and may be needed to control body weight.

About 60 minutes a day of moderate physical activity may be needed to prevent weight gain. For those who have lost weight, at least 60 to 90 minutes a day may be needed to maintain the weight loss. At the same time, calorie needs should not be exceeded. Children and teenagers should be physically active for at least 60 minutes every day, or most days.

While 30 minutes a day of moderate intensity physical activities provide health benefits, being active for longer or doing more vigorous activities can provide even greater health benefits. They also use up more calories per hour. No matter what activity you choose, it can be done all at once, or divided into two or three parts during the day. Even 10-minutes bouts of activity count toward your total.

Most adults do not need to see their health care provider before starting to exercise at a moderate level. However, men over the age of 40 and women over the age of 50 planning to start vigorous physical activity should consult a health care provider. Individuals with one of the conditions below should also consult a health care provider for help in designing a safe program of physical activity.

- A chronic health problem such as heart disease, high blood pressure, diabetes, osteoporosis, asthma, or obesity.
- High risk for heart disease, such as a family history of heart disease or stroke, eating a diet high in saturated fat, trans fat and cholesterol, smoking, or having a sedentary lifestyle.

**How many calories does physical activity use?**

A 154-pound man (5’10”) will use up about the number of calories listed doing each activity below. **Those who weigh more will use more calories, and those who weigh less will use fewer.** The calorie values listed include both calories used by the activity and the calories used for normal body functioning.

<table>
<thead>
<tr>
<th><strong>Moderate physical activities:</strong></th>
<th>In 1 hour</th>
<th>In 30 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hiking</td>
<td>370</td>
<td>185</td>
</tr>
<tr>
<td>Light gardening/yard work</td>
<td>330</td>
<td>165</td>
</tr>
<tr>
<td>Dancing</td>
<td>330</td>
<td>165</td>
</tr>
<tr>
<td>Golf (walking and carrying clubs)</td>
<td>330</td>
<td>165</td>
</tr>
<tr>
<td>Bicycling (less than 10 miles per hour)</td>
<td>290</td>
<td>145</td>
</tr>
<tr>
<td>Walking (3½ miles per hour)</td>
<td>280</td>
<td>140</td>
</tr>
<tr>
<td>Weight training (general light workout)</td>
<td>220</td>
<td>110</td>
</tr>
<tr>
<td>Stretching</td>
<td>180</td>
<td>90</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Vigorous physical activities:</strong></th>
<th>In 1 hour</th>
<th>In 30 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running/jogging (5 miles per hour)</td>
<td>590</td>
<td>295</td>
</tr>
<tr>
<td>Bicycling (more than 10 miles per hour)</td>
<td>590</td>
<td>295</td>
</tr>
<tr>
<td>Swimming (slow freestyle laps)</td>
<td>510</td>
<td>255</td>
</tr>
<tr>
<td>Aerobics</td>
<td>480</td>
<td>240</td>
</tr>
<tr>
<td>Walking (4½ miles per hour)</td>
<td>460</td>
<td>230</td>
</tr>
<tr>
<td>Heavy yard work (chopping wood)</td>
<td>440</td>
<td>220</td>
</tr>
<tr>
<td>Weight lifting (vigorous effort)</td>
<td>440</td>
<td>220</td>
</tr>
<tr>
<td>Basketball (vigorous)</td>
<td>440</td>
<td>220</td>
</tr>
</tbody>
</table>

Tips for increasing physical activity

Make physical activity a regular part of the day
Choose activities that you enjoy and can do regularly. Fitting activity into a daily routine can be easy—such as taking a brisk 10 minute walk to and from the parking lot, bus stop, or subway station. Or, join an exercise class. Keep it interesting by trying something different on alternate days. What’s important is to be active most days of the week and make it part of daily routine. For example, to reach a 30-minute goal for the day, walk the dog for 10 minutes before and after work, and add a 10 minute walk at lunchtime. Or, swim 3 times a week and take a yoga class on the other days. Make sure to do at least 10 minutes of the activity at a time, shorter bursts of activity will not have the same health benefits. To be ready anytime, keep some comfortable clothes and a pair of walking or running shoes in the car and at the office.

More ways to increase physical activity

At home:
- Join a walking group in the neighborhood or at the local shopping mall. Recruit a partner for support and encouragement.
- Push the baby in a stroller.
- Get the whole family involved—enjoy an afternoon bike ride with your kids.
- Walk up and down the soccer or softball field sidelines while watching the kids play.
- Walk the dog—don’t just watch the dog walk.
- Clean the house or wash the car.
- Walk, skate, or cycle more, and drive less.
- Do stretches, exercises, or pedal a stationary bike while watching television.
- Mow the lawn with a push mower.
- Plant and care for a vegetable or flower garden
- Play with the kids—tumble in the leaves, build a snowman, splash in a puddle, or dance to favorite music.

At work:
- Get off the bus or subway one stop early and walk or skate the rest of the way.
- Replace a coffee break with a brisk 10-minute walk. Ask a friend to go with you.
- Take part in an exercise program at work or a nearby gym.
- Join the office softball or bowling team.

At play:
- Walk, jog, skate, or cycle.
- Swim or do water aerobics.
- Take a class in martial arts, dance, or yoga.
- Golf (pull cart or carry clubs).
- Canoe, row, or kayak.
- Play racket ball, tennis, or squash.
- Ski cross-country or downhill.
- Play basketball, softball, or soccer.
- Hand cycle or play wheelchair sports.
- Take a nature walk.
- Most important – have fun while being active!

Source: www.MyPyramid.gov
Lesson Plans

Grade 5

Healthy Choices – Part 1
Healthy Choices – Part 2
Food and Culture
Ad Savvy
Healthy Mind and Healthy Body
Walk with Me
Grade 5

Healthy Choices - Part 1

Healthful Living Objective
4.01 Demonstrate the ability to select healthful food and beverage choices from the food groups of MyPyramid.

Math Objectives
1.01 Develop number sense for rational numbers 0.001 through 999,999.
4.01 Collect, organize, analyze, and display data (including stem-and-leaf plots) to solve problems.

English Language Arts Objectives
1.03 Increase reading and writing vocabulary through:
   • wide reading
   • word study
   • word reference materials
   • content area study
   • writing process elements
   • writing as a tool
   • debate
   • discussions
   • seminars
   • examining the author's craft
2.02 Interact with the text before, during, and after reading, listening, and viewing by:
   • making predictions
   • formulating questions
   • supporting answers from textual information, previous experience, and/or other sources
   • drawing on personal, literary, and cultural understandings
   • seeking additional information
   • making connections with previous experiences, information, and ideas
2.03 Read a variety of texts, such as:
   • fiction (tall tales, myths)
   • nonfiction (books of true experience, newspaper and magazine articles, schedules)
   • poetry (narrative, lyric, and cinquains)
   • drama (plays and skits)

Materials Needed
• MyPyramid for Kids Poster

Teacher’s Resources
• Protein
• Carbohydrates
• Fats
• Water
• Fiber
• Calories
• Minerals
• Vitamins
• MyPyramid Mini-poster
Handouts

- MyPyramid
- MyPyramid for Kids
- When Snack Attacks Strike
- Staying Healthy
- Making Healthy Choices
- Snack Cases

Focus
Display the MyPyramid for Kids Poster. Ask students to identify the different food groups. Talk briefly, about why it is important to eat a variety of foods from each of the food groups. Different foods have different nutrients, so we need to eat a variety in order to get all the nutrients we need.

Teacher Input
Distribute and instruct students to read the MyPyramid and When Snack Attacks Strike handouts. Distribute the MyPyramid for Kids handout. Use the Protein, Carbohydrates, Fats, Water, Fiber, Calories, Minerals, Vitamins and MyPyramid Mini-poster teacher resources to discuss healthy food choices.

Practice and Assessment
Distribute and direct students to complete the Staying Healthy, Making Healthy Choices and Snack Cases handouts.
MyPyramid
KIDS HEALTH®

MyPyramid is one way for people to understand how to eat healthy. A rainbow of colored, vertical stripes represents the five food groups plus fats and oils. Here’s what the colors stand for:

- orange - grains
- green - vegetables
- red - fruits
- yellow - fats and oils
- blue - milk and dairy products
- purple - meat, beans, fish, and nuts

The U.S. Department of Agriculture (USDA) changed the pyramid in spring 2005 because they wanted to do a better job of telling Americans how to be healthy. The agency later released a special version for kids. Notice the girl climbing the staircase up the side of the pyramid? That’s a way of showing kids how important it is to exercise and be active every day. In other words, play a lot! The steps are also a way of saying that you can make changes little by little to be healthier. One step at a time, get it?

The Pyramid Speaks
Let’s look at some of the other messages this new symbol is trying to send:

**Eat a variety of foods.** A balanced diet is one that includes all the food groups. In other words, have foods from every color, every day.

**Eat less of some foods, and more of others.** You can see that the bands for meat and protein (purple) and oils (yellow) are skinnier than the others. That’s because you need less of those kinds of foods than you do of fruits, vegetables, grains and dairy foods.

You also can see the bands start out wider and get thinner as they approach the top. That’s designed to show you that not all foods are created equal, even within a healthy food group like fruit. For instance, apple pie might be in that thin part of the fruit band because it has a lot of added sugar and fat. A whole apple - crunch! - would be down in the wide part because you can eat more of those within a healthy diet.

**Make it your own.** Through the USDA’s MyPyramid website (www.MyPyramid.gov), people can get personalized recommendations about the mix of foods they need to eat and how much they should be eating. There is also a kids’ version of the website (www.MyPyramidforkids.gov).

**How Much Do I Need to Eat?**
Everyone wants to know how much they should eat to stay healthy. It’s a tricky question, though. It depends on your age, whether you’re a girl or a boy, and how active you are. Kids who are more active burn more calories, so they need more calories. But we can give you some ideas for how much you need of each food group.
Grains
Bread, cereal, rice, pasta, oatmeal, pancakes and tortillas are some foods in the grain group. Foods in the grains group give our bodies and our brains energy we need to move and think. Grain servings are measured in ounce equivalents. Ounce equivalents are just another way of showing a serving size. Here are ounce equivalents for common grain foods. An ounce equivalent equals:

- 1 piece of bread
- ½ cup of cooked cereal, like oatmeal
- ½ cup of rice or pasta
- 1 cup of cold cereal

This is how many grain ounce equivalents kids need each day:

- 4- to 8-year-olds need 4-5 ounce equivalents each day
- 9- to 13-year-old girls need 5 ounce equivalents each day
- 9- to 13-year-old boys need 6 ounce equivalents each day

And one last thing about grains: try to eat a lot of whole grains, such as 100% wheat bread, brown rice and oatmeal.

Vegetables
Of course, you need your vegetables, especially those dark green and orange ones. Vegetables are all different colors and provide us with lots of vitamins, minerals and fiber. Our bodies use these vitamins, minerals and fiber to keep us healthy and give us energy. They also can help protect us from getting sick. It's important to eat vegetables of all different colors so we can get as much of the good stuff as possible. But how much is enough? Vegetable servings are measured in cups. This is how many vegetables kids need each day:

- 4- to 8-year-olds need 1½ cups of veggies each day
- 9- to 13-year-old girls need 2 cups of veggies each day
- 9- to 13-year-old boys need 2½ cups of veggies each day

Fruits
Sweet, juicy fruit is definitely part of a healthy diet. Just like vegetables, fruits are all different colors and provide us with lots of vitamins, minerals and fiber. Our bodies use these vitamins, minerals and fiber to keep us healthy and give us energy. They also can help protect us from getting sick. It's important to eat fruits of all different colors so we can get as much of the good stuff as possible. But how much is enough? Fruit servings are measured in cups. This is how many fruits kids need each day:

- 4- to 8-year-olds need 1-1½ cups of fruit each day
- 9- to 13-year-old girls need 1½ cups of fruit each day
- 9- to 13-year-old boys need 1½ cups of fruit each day

Milk and Other Calcium-Rich Foods
Milk, smoothies, yogurt, cheese, milkshakes, ice cream and cottage cheese are some of the foods in this group. Dairy products give us calcium and protein and help make our teeth and bones strong. Dairy products are measured in cups. This is how much dairy kids need each day:

- 4- to 8-year-olds need 1-2 cups of milk (or another calcium-rich food) each day
- 9- to 13-year-old girls need 3 cups of milk (or another calcium-rich food) each day
- 9- to 13-year-old boys need 3 cups of milk (or another calcium-rich food) each day

If you want something other than milk, you can substitute yogurt, cheese, or calcium-fortified orange juice - just to name a few.
Meats, Beans, Fish, and Nuts
These foods contain protein, iron and lots of other important nutrients. Meats like beef and pork are in this group. Fish, chicken, eggs, beans, nuts and seeds are also in this group. Dried peas and beans are included in the meat group because they are a source of protein. Like grains, these foods are measured in ounce equivalents. An ounce equivalent of this group would be:

- 1 ounce of meat, poultry, or fish
- ¼ cup cooked dry beans
- 1 egg
- 1 tablespoon of peanut butter
- a small handful of nuts or seeds

This is how many meat ounce equivalents kids need each day:

- 4- to 8-year-olds need 3-4 ounce equivalents each day
- 9- to 13-year-old girls need 5 ounce equivalents each day
- 9- to 13-year-old boys need 5 ounce equivalents each day

Oils
Oils are not a food group, but you need some for good health. It is best to get your oils from fish, nuts and liquid oils such as corn oil, soybean oil and canola oil.

Find Your Balance between Food and Fun
Move more. The person climbing the stairs reminds you to do something active every day. You can run, walk the dog, play, swim, ride your bike, dance, rollerblade or even climb the stairs. It all counts! Kids should aim for at least 60 minutes every day.
MyPyramid
Eat Right. Exercise. Have Fun.
MyPyramid.gov

Grains
Make half your grains whole
Start smart with breakfast. Look for whole-grain cereals.
Just because bread is brown doesn’t mean it’s whole grain. Search the ingredients list to make sure the first word is “whole” (like “whole wheat”).

Vegetables
Vary your veggies
Color your plate with all kinds of great-tasting veggies.
What’s green and orange and tastes good? Veggies! Go dark green with broccoli and spinach, or try orange ones like carrots and sweet potatoes.

Fruits
Focus on fruits
Fruits are nature’s treats—sweet and delicious. Go easy on juice and make sure it’s 100%.

Milk
Get your calcium-rich foods
Move to the milk group to get your calcium. Calcium builds strong bones.
Look at the carton or container to make sure your milk, yogurt, or cheese is lowfat or fat-free.

Meat & Beans
Go lean with protein
Eat lean or low-fat meat, chicken, turkey, and fish. Ask for it baked, broiled, or grilled—not fried.
It’s nutty, but true. Nuts, seeds, peas, and beans are all great sources of protein, too.

For a 1,000-calorie diet, you need the amounts below from each food group. To find the amounts that are right for you, go to MyPyramid.gov.

Eat 6 oz. every day, at least half should be whole
Eat 2½ cups every day
Eat 1½ cups every day
Get 3 cups every day:
for kids ages 2 to 8, it’s 2 cups
Eat 5 oz. every day

Oils
Oils are not a food group, but you need some for good health. Get your oils from fish, nuts, and liquid oils such as corn oil, soybean oil, and canola oil.

Find your balance between food and fun
Move more. Aim for at least 60 minutes everyday, or most days.
Walk, dance, bike, rollerblade—it all counts. How great is that!

Fats and sugars—know your limits
Get your fat facts and sugar smarts from the Nutrition Facts label.
Limit solid fats as well as foods that contain them.
Choose foods and beverages low in added sugars and other caloric sweeteners.
When Snack Attacks Strike
KIDS HEALTH®

"No snacking between meals!"

Maybe you've heard this before, but the truth is that snacks can be perfectly healthy for kids. What's not healthy is snacking so much that you're never hungry at mealtimes. But the right snack at the right time is often just what a kid needs.

Kids need to refuel their bodies more than three times a day, especially when they're really active. Walking, playing games in gym class, carrying your backpack - it all takes energy. Kids also have small stomachs, so they may need to eat more often than adults.

If kids don't get regular meals and snacks, they may get tired and grouchy. Have you ever felt this way? If it's close to mealtime you might want to hold off, but a good snacking guideline is to have a morning, afternoon and evening snack.

Of course, you don't have to have your snack. Eat when you're hungry. And don't eat just because you're bored, watching TV or to reward yourself for finishing your homework.

In the Mood for Food

You gobbled your cereal at breakfast and felt full when you went to school. But now, after working on your art project, running around in gym class and reading out loud, you're ready to eat again! That's because your body has used up the energy from your cereal. Luckily, lots of kids get a mid-morning snack.

What should you eat? Some great choices include fruit, nuts, yogurt, cut-up veggies, popcorn, peanut butter crackers, cheese, or a piece of whole-grain bread. Bring something you like to eat, but try to avoid high-sugar, high-fat treats that won't keep you satisfied very long.

A morning snack is just one of the chances kids get to refuel. After school is another great time to grab a snack. Many kids also have a little something before bedtime.

The Facts on Healthy Snacks

Do you think snacking means crunching chips, munching marshmallows or chowing down on cookies? Lots of people think snacks mean foods that aren't nutritious. But snacks can be healthy, too. And healthy snacks are more likely to give you the energy and the nutrients you need.

An orange will give you quick energy now and vitamin C for later. A pile of potato chips, on the other hand, has lots of calories and fat, something that most kids don't need a lot of. Some foods, such as whole-grain foods, also will help you feel fuller for longer. So a whole-grain muffin will stick with you longer than a candy bar. It's also easy to overeat candy or chips and they have a lot of calories.

That's not to say you can't have a candy bar or chips once in a while, if you like them. But try to make your regular snacks more nutritious. If you're feeling mildly hungry, maybe a piece of fruit will do the trick. But if you're feeling hungry at snack time, try a pita stuffed with veggies, cereal with milk, oatmeal, or an English muffin pizza.

Super Snack Recipes

If you're tired of the same old snacks, maybe it's time to get cooking. Try these snack recipes:

- Ants on a Log
- Fun Fruit Kabobs
- Incredible Edible Veggie Bowls
- Orange Chill
- Tiny Pizzas

Source: www.kidshealth.org
Updated and reviewed by: Mary L. Gavin, MD, February 2005
Originally reviewed by: Jessica Donze Black, RD, CDE, MPH
Staying Healthy

Using the “MyPyramid” article, answer the following questions with complete sentences.

1. Name foods from the groups of MyPyramid that should be eaten daily.

2. Using the information you found in the article, make a list of foods that would be good snacks. (Hint: they should come from the 5 food groups)

3. Write one personal goal for healthier eating. How will you try to keep this goal?
Making Healthy Choices

Jane is a 5th grader at Anytown Elementary. She has been trying to eat healthy foods from MyPyramid so that she can be healthy and feel great. Jane wrote down all of the foods she ate yesterday. Can you help her to make some simple changes to limit added sugars in her food and to follow MyPyramid?

**Jane’s Food Record:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Meals/Items</th>
</tr>
</thead>
</table>
| Breakfast  | 1 bowl cocoa puffs (2 servings)  
              1 cup 2% milk  
              strawberry Pop Tart |
| Snack      | Capri Sun  
              Fruit roll-up |
| Lunch      | peanut butter and jelly sandwich on white bread  
              Capri Sun  
              chips  
              apple |
| Afternoon  | vanilla ice cream  
              orange soda |
| Dinner     | grilled chicken breast  
              ½ cup fruit salad  
              1 serving green beans  
              1 serving rice  
              2 glasses soda |
| Dessert    | Gummy worms |

**How did Jane do?**

1. How many servings did Jane get from the:
   - Grains group? __________
   - Vegetable group? __________
   - Fruit group? __________
   - Milk group? __________
   - Meat, nuts, seeds group? __________
   - Fats group? __________

2. Did Jane meet the recommendations for the minimum number of servings from each of the food groups?

3. If no, for which food groups did she not meet the recommendations?
4. Name 5 changes Jane could make in order to limit added sugar in her food and to meet the recommendations of MyPyramid.
   1.
   
   2.
   
   3.
   
   4.
   
   5.

5. Write a paragraph describing how you think Jane feels when she eats healthy foods.
Snack Cases

Snack Case #1
You arrive home hungry after school and you are not allowed to cook or use the microwave. What's your healthy snack?

Snack Case #2
You are asked to bring snacks for 15 teammates to eat after the soccer game. They are very thirsty and hungry. What will you bring?

Snack Case #3
You are asked to bring a healthy and easy-to-pack snack for your three-hour bus ride to a concert. What snack foods are you packing?
Snack Case #4
You and your friends stop at a fast food restaurant for an after-school snack. What do you order to meet the healthy snack criteria?

Snack Case #5
You and your family are at a professional baseball game and you get hungry. What do you buy at the concession stand for a healthy snack choice?

Snack Case #6
You are studying at the public library and get the munchies. You cannot leave the building and the only food choices are in the vending machines. What can you choose for a healthy snack?
Grade 5

Healthy Choices - Part 2

Healthful Living Objective
4.02 Evaluate the benefits of limiting the consumption of foods and beverages high in fat and added sugar.

Math Objectives
1.01 Develop number sense for rational numbers 0.001 through 999,999.
4.01 Collect, organize, analyze, and display data (including stem-and-leaf plots) to solve problems.

English Language Arts Objectives
1.03 Increase reading and writing vocabulary through:
• wide reading
• word study
• word reference materials
• content area study
• writing process elements
• writing as a tool
• debate
• discussions
• seminars
• examining the author’s craft
2.02 Interact with the text before, during, and after reading, listening, and viewing by:
• making predictions
• formulating questions
• supporting answers from textual information, previous experience, and/or other sources
• drawing on personal, literary, and cultural understandings
• seeking additional information
• making connections with previous experiences, information, and ideas
2.03 Read a variety of texts, such as:
• fiction (tall tales, myths)
• nonfiction (books of true experience, newspaper and magazine articles, schedules)
• poetry (narrative, lyric, and cinquains)
• drama (plays and skits)

Teacher Resources
• Fats
• What are Oils?
• Carbohydrates

Materials Needed
• Straws
• Shortening
• Two clear glasses
• Measuring spoon (teaspoons)
• 1½ cups white sugar
• 5-pound bag of white sugar
• Book of food values (optional)
Handouts
- Learning About Fats from KidsHealth.org
- Finding Fat Facts
- Snack Cases Worksheet
- Pyramid Power
- Calculating Percent of Calories from Fat
- Learning about Carbohydrates from KidsHealth.org
- Finding Carbohydrate Facts
- Soft Drink Facts
- Soft Drink Math

Focus
NOTE: This lesson could be broken down into two lessons: Fats and Sugar

Fats: Distribute and direct students to blow through empty straws. Next, instruct students to place a small amount of shortening in the end of each straw, leaving some space for airflow. Tell students to blow through the straw again. Discuss the two experiences. Explain to the students that foods high in saturated fat can cause blockages in arteries. These blockages make it difficult for blood to flow.

Sugar: Place two clear glasses at the front of the class. In front of one, place a sign that says “girl” and in front of the other place a sign that says “boy”. Measure out 24 teaspoons of sugar into the glass labeled girl and 34 teaspoons of sugar into the glass labeled boy. Ask students how many days they think it would take to eat that amount of added sugar. Inform students that the amount in the respective glasses is the amount a girl or boy eats in one day. Hold up a 5-pound bag of sugar and inform students that the average American eats 12 of these each year. Ask students if they are surprised by the results and how they think that much sugar could affect their health.

Teacher Input
Fats: Distribute the Learning About Fats handout. Instruct students to read it independently or out loud as a class. Using the Fats and What are Oils? teacher resources, discuss dietary sources of fat and how much to eat as part of a healthful eating pattern.

Sugar: Distribute the Learning About Carbohydrates handout. Instruct students to read it independently or out loud as a class. Using the Carbohydrates teacher resource, discuss dietary sources of sugar and how much to eat as part of a healthful eating pattern.

Practice and Assessment
Fats: Distribute and direct students to complete the Finding Fat Facts.

Distribute the Snack Cases Worksheet, Pyramid Power and Calculating Percent of Calories from Fat handouts. Instruct students to work in pairs and use the snacks from the Snack Cases handout in the Healthy Choices – Part 1 lesson. Direct them to determine the approximate calories and fat in each snack and calculate the percent calories from fat. NOTE: the Pyramid Power handout may be supplemented with a book of food values if one is available.

Sugar: Distribute and direct students to complete the Finding Carbohydrates Facts, Soft Drink Facts and Soft Drink Math handouts.
Fat is a part of food. Some foods, including most fruits and vegetables, have almost no fat. Other foods have a lot of fat like nuts, oils, butter and meats like beef.

The name - fat - may make it sound like something you shouldn't eat. But fat is an important part of a healthy diet. And little kids, especially, need a certain amount of fat in their diets so the brain and nervous system develops correctly. That's why toddlers need to drink whole milk, which has more fat. Older kids can drink low-fat or skim milk.

How much fat should you eat? Experts suggest kids who are 6 to 8 eat 48 to 60 grams per day. Older kids, between 9 and 12, should eat about 60 to 75 grams. That's about 27% of a kid's daily calories. Babies need more, but kids older than 2 and adults should get less than 30% of their daily calories from fat, nutrition experts say. You can figure out how many grams of fat are in a food by looking at the food label. Peanut butter, for instance, contains 16 grams of fat in 2 tablespoons.

Types of Fat
You might see ads for foods that say they're "low-fat" or "fat-free." Lower-fat diets have been recommended for health and to help people lose weight. But nutrition experts are finding that fats are more complicated. Some kinds of fat are actually good for your health. As a bonus, fat in food helps people feel full, so they don't eat as much.

But that doesn't mean a high-fat diet is good for you. And some fats are better than others. Here are the three major types:

Unsaturated fats: These are found in plant foods and fish. These may be good for your heart. The best of the unsaturated fats are found in olive oil, peanut oil, canola oil, albacore tuna and salmon.

Saturated fats: These fats are found in meat and other animal products, such as butter, cheese, and all milk except fat-free milk. Saturated fats are also in palm and coconut oils, which are often used in baked goods (the kind you buy at the store). Eating too much saturated fat can be unhealthy and bad for your heart.

Trans fats: These fats are found in margarine, especially the sticks. Trans fats are also found in certain foods that you buy at the store or in a restaurant, such as snack foods, baked goods and fried foods. When you see "hydrogenated" or "partially hydrogenated" oils on an ingredient list, the food contains trans fats. Like saturated fats, eating too much can be unhealthy and bad for your heart.

Why Do We Need Fat?
Dietary fat helps kids' bodies grow and develop like it should. Fats fuel the body and help absorb some vitamins. They also are the building blocks of hormones and they insulate nervous system tissue in the body.

So fat is not the enemy, but you'll want to choose the right amount - and the right kind - of fat. If you're getting most of your fat from protein-rich meats, nuts, and heart-healthy oils, you've already made fat your friend!
Finding Fat Facts

Using the “Learning about Fats” article, answer the following questions with complete sentences.

1. What is fat?

2. What are the three major types of fat and where do they come from?

3. Name 3 things that fat does to help our bodies work properly.

4. Name 4 foods that have lots of fat in them.

5. According to MyPyramid for Kids, how often should we eat foods like these?
# Snack Cases Worksheet

<table>
<thead>
<tr>
<th>Snack Case #1</th>
<th>Snack Name: ______________________</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calories per serving: ____________</td>
</tr>
<tr>
<td></td>
<td>Fat per serving: _________________</td>
</tr>
<tr>
<td></td>
<td>% of Calories from fat: ___________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Snack Case #2</th>
<th>Snack Name: ______________________</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calories per serving: ____________</td>
</tr>
<tr>
<td></td>
<td>Fat per serving: _________________</td>
</tr>
<tr>
<td></td>
<td>% of Calories from fat: ___________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Snack Case #3</th>
<th>Snack Name: ______________________</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calories per serving: ____________</td>
</tr>
<tr>
<td></td>
<td>Fat per serving: _________________</td>
</tr>
<tr>
<td></td>
<td>% of Calories from fat: ___________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Snack Case #4</th>
<th>Snack Name: ______________________</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calories per serving: ____________</td>
</tr>
<tr>
<td></td>
<td>Fat per serving: _________________</td>
</tr>
<tr>
<td></td>
<td>% of Calories from fat: ___________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Snack Case #5</th>
<th>Snack Name: ______________________</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calories per serving: ____________</td>
</tr>
<tr>
<td></td>
<td>Fat per serving: _________________</td>
</tr>
<tr>
<td></td>
<td>% of Calories from fat: ___________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Snack Case #6</th>
<th>Snack Name: ______________________</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calories per serving: ____________</td>
</tr>
<tr>
<td></td>
<td>Fat per serving: _________________</td>
</tr>
<tr>
<td></td>
<td>% of Calories from fat: ___________</td>
</tr>
</tbody>
</table>

1. Were all snacks less than 30% of calories from fat?

2. If not, what could you do during the day to make sure your total calories from fat for the day was less than 30%?
### Pyramid Power

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beverages</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruit drinks:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruit punch drink</td>
<td>6 oz</td>
<td>85</td>
<td>0</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>Grape drink</td>
<td>6 oz</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>Lemonade drink</td>
<td>6 oz</td>
<td>80</td>
<td>0</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Limeade drink</td>
<td>6 oz</td>
<td>75</td>
<td>0</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>Pineapple-grape-fruit juice drink</td>
<td>6 oz</td>
<td>90</td>
<td>0</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td><strong>Soft Drinks</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Club soda</td>
<td>12 oz</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cola</td>
<td>12 oz</td>
<td>160</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diet Cola</td>
<td>12 oz</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ginger ale</td>
<td>12 oz</td>
<td>125</td>
<td>0</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>Grape</td>
<td>12 oz</td>
<td>180</td>
<td>0</td>
<td>0</td>
<td>46</td>
</tr>
<tr>
<td>Lemon-lime</td>
<td>12 oz</td>
<td>155</td>
<td>0</td>
<td>0</td>
<td>39</td>
</tr>
<tr>
<td>Orange</td>
<td>12 oz</td>
<td>180</td>
<td>0</td>
<td>0</td>
<td>46</td>
</tr>
<tr>
<td>Root beer</td>
<td>12 oz</td>
<td>165</td>
<td>0</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td><strong>Dairy Products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheese:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheddar cheese</td>
<td>1 oz</td>
<td>115</td>
<td>7</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Cottage cheese</td>
<td>1 cup</td>
<td>235</td>
<td>28</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Cream cheese</td>
<td>1 oz</td>
<td>100</td>
<td>2</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Mozzarella</td>
<td>1 oz</td>
<td>80</td>
<td>8</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Parmesan, grated</td>
<td>1 tbsp</td>
<td>25</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Processed American cheese</td>
<td>1 oz</td>
<td>105</td>
<td>6</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Processed cheese spread</td>
<td>1 oz</td>
<td>80</td>
<td>5</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Swiss cheese</td>
<td>1 oz</td>
<td>95</td>
<td>7</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td><strong>Cream:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Half-and-half (cream and milk)</td>
<td>1 tbsp</td>
<td>20</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Heavy cream</td>
<td>1 tbsp</td>
<td>50</td>
<td>0</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Sour cream</td>
<td>1 tbsp</td>
<td>25</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Whipped topping</td>
<td>1 tbsp</td>
<td>15</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Ice cream, vanilla</td>
<td>1 cup</td>
<td>270</td>
<td>5</td>
<td>14</td>
<td>32</td>
</tr>
<tr>
<td><strong>Milk:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole milk</td>
<td>1 cup</td>
<td>150</td>
<td>8</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Lowfat (2%) milk</td>
<td>1 cup</td>
<td>120</td>
<td>8</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Lowfat (1%) milk</td>
<td>1 cup</td>
<td>100</td>
<td>8</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Skim</td>
<td>1 cup</td>
<td>85</td>
<td>8</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Buttermilk</td>
<td>1 cup</td>
<td>100</td>
<td>8</td>
<td>2</td>
<td>12</td>
</tr>
</tbody>
</table>

**Source:** United States Department of Agriculture, Human Nutrition Information Service. Nutritive Value of Foods, Home and Garden Bulletin Number 72.

Produced by the Penn State Nutrition Department for the Pennsylvania Department of Education, 1993; revised 1996. Funded by a grant from USDA, NET Program.
### Pyramid Power

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dairy Products (continued)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk beverages:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chocolate milk, lowfat</td>
<td>1 cup</td>
<td>160</td>
<td>8</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>Cocoa</td>
<td>3/4 cup</td>
<td>100</td>
<td>3</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>Eggnog</td>
<td>1 cup</td>
<td>340</td>
<td>10</td>
<td>19</td>
<td>34</td>
</tr>
<tr>
<td>Fruit-flavored yogurt</td>
<td>8 oz</td>
<td>230</td>
<td>10</td>
<td>2</td>
<td>43</td>
</tr>
<tr>
<td><strong>Eggs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain, raw</td>
<td>1 egg</td>
<td>75</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Fried in margarine:</td>
<td>1 egg</td>
<td>90</td>
<td>6</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Hard-cooked</td>
<td>1 egg</td>
<td>75</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Poached</td>
<td>1 egg</td>
<td>75</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Scrambled</td>
<td>1 egg</td>
<td>100</td>
<td>7</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td><strong>Fats and Oils</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Butter</td>
<td>1 tbsp</td>
<td>100</td>
<td>0</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Margarine</td>
<td>1 tbsp</td>
<td>100</td>
<td>0</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Oils</td>
<td>1 tbsp</td>
<td>125</td>
<td>0</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Italian Salad dressing:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular</td>
<td>1 tbsp</td>
<td>80</td>
<td>0</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Low calorie</td>
<td>1 tbsp</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Mayonnaise</td>
<td>1 tbsp</td>
<td>100</td>
<td>0</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td><strong>Fish and Shellfish</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish sticks</td>
<td>1 fish stick</td>
<td>70</td>
<td>6</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Haddock, breaded, fried</td>
<td>3 oz</td>
<td>175</td>
<td>17</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Tuna:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil pack</td>
<td>3 oz</td>
<td>165</td>
<td>24</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Water pack</td>
<td>3 oz</td>
<td>135</td>
<td>30</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Fruits and Fruit Juices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apple</td>
<td>1 apple</td>
<td>80</td>
<td>0</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Apple juice</td>
<td>1 cup</td>
<td>115</td>
<td>0</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Applesauce</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweetened</td>
<td>1 cup</td>
<td>195</td>
<td>0</td>
<td>0</td>
<td>51</td>
</tr>
<tr>
<td>Unsweetened</td>
<td>1 cup</td>
<td>105</td>
<td>0</td>
<td>0</td>
<td>28</td>
</tr>
<tr>
<td>Banana</td>
<td>1 banana</td>
<td>105</td>
<td>1</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Grapefruit</td>
<td>1/2 grapefruit</td>
<td>40</td>
<td>1</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Grapefruit juice, unsweetened</td>
<td>1 cup</td>
<td>95</td>
<td>1</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>Grapes</td>
<td>10 grapes</td>
<td>35</td>
<td>0</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Kiwifruit</td>
<td>1 kiwifruit</td>
<td>45</td>
<td>1</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Cantaloupe</td>
<td>1/2 melon</td>
<td>95</td>
<td>2</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>Honeydew</td>
<td>1/10 melon</td>
<td>45</td>
<td>1</td>
<td>0</td>
<td>12</td>
</tr>
</tbody>
</table>

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## Pyramid Power

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td>1 orange</td>
<td>60</td>
<td>1</td>
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### Fruits and Fruit Juices (continued)

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange juice</td>
<td>1 cup</td>
<td>110</td>
<td>2</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>Peaches</td>
<td>1 peach</td>
<td>35</td>
<td>1</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Pears</td>
<td>1 pear</td>
<td>100</td>
<td>1</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Pineapple</td>
<td>1 cup</td>
<td>75</td>
<td>1</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>Pineapple juice, unsweetened</td>
<td>1 cup</td>
<td>140</td>
<td>1</td>
<td>0</td>
<td>57</td>
</tr>
<tr>
<td>Plums</td>
<td>1 plum</td>
<td>35</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Raisins</td>
<td>1/2 cup</td>
<td>220</td>
<td>2</td>
<td>0</td>
<td>57</td>
</tr>
<tr>
<td>Raspberries</td>
<td>1 cup</td>
<td>60</td>
<td>1</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Strawberries</td>
<td>1 cup</td>
<td>45</td>
<td>1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Watermelon</td>
<td>1 cup</td>
<td>50</td>
<td>1</td>
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### Grain Products

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bagels</td>
<td>1 bagel</td>
<td>200</td>
<td>7</td>
<td>2</td>
<td>38</td>
</tr>
<tr>
<td>Biscuits</td>
<td>1 biscuit</td>
<td>95</td>
<td>2</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Blueberry muffin</td>
<td>1 muffin</td>
<td>135</td>
<td>3</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Breads:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italian</td>
<td>1 slice</td>
<td>85</td>
<td>3</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Pita bread</td>
<td>1 pita</td>
<td>165</td>
<td>6</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Wheat or white</td>
<td>1 slice</td>
<td>65</td>
<td>2</td>
<td>1</td>
<td>12</td>
</tr>
</tbody>
</table>

### Breakfast cereals:

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oatmeal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain</td>
<td>1 pkt</td>
<td>105</td>
<td>4</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>Flavored</td>
<td>1 pkt</td>
<td>160</td>
<td>5</td>
<td>2</td>
<td>31</td>
</tr>
<tr>
<td>Ready to Eat:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn Flakes</td>
<td>1 1/4 cup</td>
<td>110</td>
<td>2</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td>Raisin Bran</td>
<td>3/4 cup</td>
<td>90</td>
<td>3</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>Sugar Frosted Flakes</td>
<td>3/4 cup</td>
<td>110</td>
<td>1</td>
<td>0</td>
<td>26</td>
</tr>
</tbody>
</table>

### Cakes:

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angel food cake</td>
<td>1/12 cake</td>
<td>125</td>
<td>3</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Pound cake</td>
<td>1/17 cake</td>
<td>120</td>
<td>2</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Yellow with chocolate frosting</td>
<td>1/6 of cake</td>
<td>245</td>
<td>11</td>
<td>2</td>
<td>11</td>
</tr>
</tbody>
</table>

### Cookies:

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brownies with nuts</td>
<td>1 brownie</td>
<td>100</td>
<td>1</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Chocolate chip cookies</td>
<td>4 cookies</td>
<td>180</td>
<td>2</td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td>Oatmeal raisin cookies</td>
<td>4 cookies</td>
<td>245</td>
<td>3</td>
<td>10</td>
<td>36</td>
</tr>
<tr>
<td>Peanut butter cookies</td>
<td>4 cookies</td>
<td>245</td>
<td>4</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>Sugar cookies</td>
<td>4 cookies</td>
<td>235</td>
<td>2</td>
<td>12</td>
<td>31</td>
</tr>
</tbody>
</table>

### Corn chips

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 oz</td>
<td></td>
<td>155</td>
<td>2</td>
<td>9</td>
<td>16</td>
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</tbody>
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### Crackers:

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graham</td>
<td>2 crackers</td>
<td>60</td>
<td>1</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Saltines</td>
<td>4 crackers</td>
<td>50</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

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## Pyramid Power

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Food Energy</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(Calories)</td>
<td>(Grams)</td>
<td>(Grams)</td>
<td>(Grams)</td>
</tr>
<tr>
<td>Wheat</td>
<td>4 crackers</td>
<td>35</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>Grain Products (continued)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Croissant</td>
<td>1 croissant</td>
<td>235</td>
<td>5</td>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>Doughnut</td>
<td>1 doughnut</td>
<td>210</td>
<td>3</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>English muffin</td>
<td>1 muffin</td>
<td>140</td>
<td>5</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>French toast</td>
<td>1 slice</td>
<td>155</td>
<td>6</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>Pancake</td>
<td>1 pancake</td>
<td>60</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td><strong>Pies:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apple pie</td>
<td>1/6 pie</td>
<td>405</td>
<td>3</td>
<td>18</td>
<td>60</td>
</tr>
<tr>
<td>Pecan pie</td>
<td>1/6 pie</td>
<td>575</td>
<td>7</td>
<td>32</td>
<td>71</td>
</tr>
<tr>
<td>Pumpkin pie</td>
<td>1/6 pie</td>
<td>320</td>
<td>6</td>
<td>17</td>
<td>37</td>
</tr>
<tr>
<td>Popcorn</td>
<td>1 cup</td>
<td>30</td>
<td>1</td>
<td>0</td>
<td>6</td>
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<tr>
<td><strong>Pretzels:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stick (2 1/4 inches long)</td>
<td>10 pretzels</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>twisted, Dutch</td>
<td>pretzel</td>
<td>65</td>
<td>2</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td><strong>Rice:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown rice</td>
<td>1 cup</td>
<td>230</td>
<td>5</td>
<td>1</td>
<td>48</td>
</tr>
<tr>
<td>White rice</td>
<td>1 cup</td>
<td>225</td>
<td>4</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td><strong>Rolls:</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Dinner roll</td>
<td>1 roll</td>
<td>85</td>
<td>2</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Hard roll</td>
<td>1 roll</td>
<td>155</td>
<td>5</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Hot dog/hamburger bun</td>
<td>1 roll</td>
<td>115</td>
<td>3</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Hoagie or submarine roll</td>
<td>1 roll</td>
<td>400</td>
<td>11</td>
<td>8</td>
<td>72</td>
</tr>
<tr>
<td>Spaghetti</td>
<td>1 cup</td>
<td>155</td>
<td>5</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Toaster pastries</td>
<td>1 pastry</td>
<td>210</td>
<td>2</td>
<td>6</td>
<td>38</td>
</tr>
<tr>
<td>Tortilla</td>
<td>1 tortilla</td>
<td>65</td>
<td>2</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Waffles</td>
<td>1 waffle</td>
<td>205</td>
<td>7</td>
<td>8</td>
<td>27</td>
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<tr>
<td><strong>Legumes, Nuts, and Seeds</strong></td>
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<tr>
<td>Beans, cooked or canned:</td>
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<td></td>
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</tr>
<tr>
<td>Black</td>
<td>1 cup</td>
<td>225</td>
<td>15</td>
<td>1</td>
<td>41</td>
</tr>
<tr>
<td>Kidney</td>
<td>1 cup</td>
<td>230</td>
<td>15</td>
<td>1</td>
<td>42</td>
</tr>
<tr>
<td>Lentils</td>
<td>1 cup</td>
<td>215</td>
<td>16</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>Pinto</td>
<td>1 cup</td>
<td>265</td>
<td>15</td>
<td>1</td>
<td>49</td>
</tr>
<tr>
<td>Canned beans:</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Refried</td>
<td>1 cup</td>
<td>295</td>
<td>18</td>
<td>3</td>
<td>51</td>
</tr>
<tr>
<td>White beans with frankfurter</td>
<td>1 cup</td>
<td>365</td>
<td>19</td>
<td>18</td>
<td>32</td>
</tr>
<tr>
<td>White beans, pork, tomato sauce</td>
<td>1 cup</td>
<td>310</td>
<td>16</td>
<td>7</td>
<td>48</td>
</tr>
<tr>
<td>Peanut butter</td>
<td>1 tbsp</td>
<td>95</td>
<td>5</td>
<td>8</td>
<td>42</td>
</tr>
<tr>
<td>Tofu</td>
<td>1 piece</td>
<td>85</td>
<td>9</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

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# Pyramid Power

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meat and Meat Products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Bacon</td>
<td>3 slices</td>
<td>110</td>
<td>6</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Chopped ham</td>
<td>2 slices</td>
<td>95</td>
<td>7</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Ground beef patty</td>
<td>3 oz</td>
<td>245</td>
<td>20</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Ham</td>
<td>3 oz</td>
<td>250</td>
<td>21</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Lamb chop, broiled</td>
<td>2.2 oz</td>
<td>220</td>
<td>20</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Pork chop, broiled</td>
<td>3.1 oz</td>
<td>275</td>
<td>24</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Sausages:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bologna</td>
<td>2 slices</td>
<td>180</td>
<td>7</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Brown and serve</td>
<td>1 link</td>
<td>50</td>
<td>2</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Frankfurter</td>
<td>1 frankfurter</td>
<td>145</td>
<td>5</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Pork link</td>
<td>1 link</td>
<td>50</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Sirloin steak, broiled</td>
<td>3 oz</td>
<td>240</td>
<td>23</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Veal cutlet, broiled</td>
<td>3 oz</td>
<td>185</td>
<td>23</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td><strong>Mixed Dishes and Fast Foods</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed dishes:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef and vegetable stew</td>
<td>1 cup</td>
<td>220</td>
<td>16</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Beef potpie</td>
<td>1 piece</td>
<td>515</td>
<td>21</td>
<td>30</td>
<td>39</td>
</tr>
<tr>
<td>Chicken a la king</td>
<td>1 cup</td>
<td>470</td>
<td>27</td>
<td>34</td>
<td>12</td>
</tr>
<tr>
<td>Chicken potpie, 9-inch pie</td>
<td>1/3 pie</td>
<td>545</td>
<td>23</td>
<td>31</td>
<td>42</td>
</tr>
<tr>
<td>Macaroni and cheese</td>
<td>1 cup</td>
<td>230</td>
<td>9</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Spaghetti in tomato sauce</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with cheese</td>
<td>1 cup</td>
<td>190</td>
<td>6</td>
<td>2</td>
<td>39</td>
</tr>
<tr>
<td>Spaghetti with meatballs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and tomato sauce</td>
<td>1 cup</td>
<td>260</td>
<td>12</td>
<td>10</td>
<td>29</td>
</tr>
<tr>
<td>Fast food entrees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheeseburger</td>
<td>1 sandwich</td>
<td>300</td>
<td>15</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>English muffin, egg, cheese,</td>
<td>1 sandwich</td>
<td>360</td>
<td>18</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td>and bacon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish sandwich with cheese</td>
<td>1 sandwich</td>
<td>420</td>
<td>16</td>
<td>23</td>
<td>39</td>
</tr>
<tr>
<td>Hamburger</td>
<td>1 sandwich</td>
<td>245</td>
<td>12</td>
<td>11</td>
<td>28</td>
</tr>
<tr>
<td>Pizza, cheese</td>
<td>1 slice</td>
<td>290</td>
<td>15</td>
<td>9</td>
<td>39</td>
</tr>
<tr>
<td>Roast beef sandwich</td>
<td>1 sandwich</td>
<td>345</td>
<td>22</td>
<td>13</td>
<td>34</td>
</tr>
<tr>
<td>Taco</td>
<td>1 taco</td>
<td>195</td>
<td>9</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td><strong>Poultry and Poultry Products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fried Chicken batter dipped:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast</td>
<td>1/2 breast</td>
<td>365</td>
<td>35</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Drumstick</td>
<td>3 oz</td>
<td>195</td>
<td>16</td>
<td>11</td>
<td>6</td>
</tr>
</tbody>
</table>

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### Pyramid Power

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Food Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poultry and Poultry Products (continued)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roasted Chicken with skin:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast</td>
<td>1/2 breast</td>
<td>140</td>
<td>27</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Drumstick</td>
<td>3 oz</td>
<td>75</td>
<td>12</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Turkey, roasted</td>
<td>3 pieces</td>
<td>145</td>
<td>25</td>
<td>4</td>
<td>0</td>
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<tr>
<td><strong>Soups, Sauces, and Gravies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soups:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicken noodle</td>
<td>1 cup</td>
<td>75</td>
<td>4</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Cream of chicken</td>
<td>1 cup</td>
<td>190</td>
<td>7</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Cream of mushroom</td>
<td>1 cup</td>
<td>205</td>
<td>6</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Cream of tomato</td>
<td>1 cup</td>
<td>160</td>
<td>6</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Vegetable beef</td>
<td>1 cup</td>
<td>80</td>
<td>6</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Vegetable</td>
<td>1 cup</td>
<td>70</td>
<td>2</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Gravies:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef</td>
<td>1 cup</td>
<td>125</td>
<td>9</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Chicken</td>
<td>1 cup</td>
<td>190</td>
<td>5</td>
<td>14</td>
<td>13</td>
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<tr>
<td><strong>Sugars and Sweets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caramels, plain or chocolate</td>
<td>1 oz</td>
<td>115</td>
<td>1</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Chocolate bar</td>
<td>1 oz</td>
<td>145</td>
<td>2</td>
<td>9</td>
<td>16</td>
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<tr>
<td>Fudge</td>
<td>1 oz</td>
<td>115</td>
<td>1</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>Gum drops</td>
<td>1 oz</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Hard candy</td>
<td>1 oz</td>
<td>110</td>
<td>0</td>
<td>0</td>
<td>28</td>
</tr>
<tr>
<td>Jelly beans</td>
<td>1 oz</td>
<td>105</td>
<td>0</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>Marshmallows</td>
<td>1 oz</td>
<td>90</td>
<td>1</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>Jams and preserves</td>
<td>1 tbsp</td>
<td>55</td>
<td>0</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Jellies</td>
<td>1 tbsp</td>
<td>50</td>
<td>0</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Popsicle</td>
<td>1 popsicle</td>
<td>70</td>
<td>0</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Puddings:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chocolate</td>
<td>5-oz can</td>
<td>205</td>
<td>3</td>
<td>11</td>
<td>30</td>
</tr>
<tr>
<td>Tapioca</td>
<td>5-oz can</td>
<td>160</td>
<td>3</td>
<td>5</td>
<td>28</td>
</tr>
<tr>
<td>Vanilla</td>
<td>1/2 cup</td>
<td>150</td>
<td>4</td>
<td>4</td>
<td>27</td>
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<tr>
<td><strong>Vegetables and Vegetable Products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asparagus</td>
<td>1 cup</td>
<td>45</td>
<td>5</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Beans:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lima</td>
<td>1 cup</td>
<td>170</td>
<td>10</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Green</td>
<td>1 cup</td>
<td>45</td>
<td>2</td>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

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## Pyramid Power

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
<th>Food Energy (Calories)</th>
<th>Protein (Grams)</th>
<th>Fat (Grams)</th>
<th>Carbohydrate (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vegetables and Vegetable Products (continued)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Broccoli:
- **Cooked**
  - 1 cup: 45, 5, 0, 9
- **Raw**
  - 1 spear: 40, 4, 1, 8

### Brussels sprouts:
- 1 cup: 60, 4, 1, 13

### Cabbage:
- 1 cup: 30, 1, 0, 7

### Carrots:
- **Cooked**
  - 1 cup: 55, 2, 0, 12
- **Raw**
  - 1 carrot: 30, 1, 0, 7

### Cauliflower:
- 1 cup: 35, 3, 0, 7

### Celery:
- 1 stalk: 5, 0, 0, 1

### Corn:
- 1 cup: 135, 5, 0, 34

### Lettuce:
- 1 cup: 5, 1, 0, 1

### Mushrooms:
- 1 cup: 20, 1, 0, 3

### Onions:
- 1 cup: 55, 2, 0, 12

### Peas:
- 1 cup: 115, 8, 1, 21

### Potatoes:
- **Baked, no skin**
  - 1 potato: 145, 3, 0, 34
- **Boiled, peeled**
  - 1 potato: 115, 2, 0, 27
- **French fried**
  - 10 strips: 160, 2, 8, 20

### Potato products:
- **Potatoes au gratin**
  - 1 cup: 325, 12, 19, 28
- **Mashed**
  - 1 cup: 235, 4, 12, 32
- **Potato chips**
  - 10 chips: 105, 1, 7, 10
- **Sweet potatoes, boiled**
  - 1 potato: 160, 2, 0, 37
- **Sweet potatoes, candied**
  - 1 piece: 145, 1, 3, 29

### Tomato:
- 1 tomato: 25, 1, 0, 5

### Tomato juice:
- 1 cup: 40, 2, 0, 10

### Tomato sauce:
- 1 cup: 75, 3, 0, 18

### Sweet pepper:
- 1 pepper: 20, 1, 0, 4

### Vegetables, mixed:
- 1 cup: 75, 4, 0, 15

### Miscellaneous items

- **Catsup/Ketchup**
  - 1 tbsp: 15, 0, 0, 4
- **Dill pickles**
  - 1 pickle: 5, 0, 0, 1
- **Mustard**
  - 1 tsp: 5, 0, 0, 0

---

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Calculating Percent of Calories from Fat

It is recommended that Americans get no more than 25-35% of their daily calories from fat. If one item or meal is greater than 30% of calories from fat, it is good to balance the day with other foods or meals that are less than 30% of calories from fat.

Steps for calculating % of calories from fat:

1. Determine the number of calories in a food item. This information can be found on the food label. Be sure to determine the serving size for which the number of calories is listed.

2. Determine the number of grams of fat in this serving.

3. Multiply the number of grams of fat by 9. (There are 9 calories in one gram of fat.) This number is the number of calories from fat in the serving.

4. Divide the number of calories from fat (found in step 3 above) by the total number of calories in the serving.

5. Multiply by 100 to determine the %.

Example:

An average small hamburger has 280 calories.

This hamburger has 10 grams of fat.

There are 90 calories from fat in the hamburger (10 grams x 9 calories per gram).

32% of the calories are from fat in the hamburger (90 calories from fat divided by 280 total calories x 100).
Learning About Carbohydrates
KIDS HEALTH®

You've probably seen ads for low-carb foods and diets, but kids and adults need carbohydrates (say: kar-bo-hi-draytz). Most foods have carbohydrates in them, which the body breaks down into simple sugars - the major source of energy for the body.

**Two Types of Carbohydrates**
There are two major types of carbohydrates in foods: simple and complex.

**Simple carbohydrates:** These are also called simple sugars. Simple sugars are found in refined sugars, like the white sugar you'd find in a sugar bowl. If you have a piece of candy, you're eating simple carbohydrates. However, you'll also find simple sugars in healthy foods, such as fruit and milk. It's better to get your simple sugars from foods like fruit and milk. Why? Because they contain vitamins, fiber and good stuff like calcium. Candy does not.

**Complex carbohydrates:** These are also called starches. Starches include food like bread, crackers, pasta, and rice. As with simple sugars, some complex carbohydrate foods are better choices than others are. Refined (say: ree-find) grains, such as white flour and white rice, have been processed, which removes vitamins and fiber. But unrefined grains still contain these vitamins and minerals. Unrefined grains also are rich in fiber, which helps your digestive system work well. Fiber helps you feel full, so you are less likely to eat too much of these foods. That explains why a bowl of oatmeal fills you up better than sugary candy!

So which type of carbohydrates should you eat? Both can be part of a healthy diet.

**How the Body Uses Carbohydrates**
When you eat carbohydrates, the body breaks them down into simple sugars. These sugars are absorbed into your blood. As the sugar level rises in your body, an organ called the pancreas releases a hormone called insulin. Insulin is needed to move sugar from the blood into the cells, where the sugar can be used as a source of energy.

When this process goes fast - as with simple sugars - you're more likely to feel hungry again soon. When it occurs more slowly, as with a whole-grain food, you won't get hungry so soon. These types of complex carbohydrates give you energy over a longer period of time.

The carbohydrates in some foods (mostly those that contain a lot of simple sugars) cause your blood sugar level to rise more quickly than others. Scientists have been studying whether eating foods that cause big jumps in blood sugar may be related to health problems like diabetes and heart disease. You're probably already on the right track if you don't eat many simple sugars (such as candy) and you eat more complex carbohydrates (like vegetables, oatmeal, and whole-grain wheat bread).

Source: www.kidshealth.org. Reviewed by Steven Dowshen, MD, January 2005
Finding Carbohydrate Facts

Using the “Learning about Carbohydrates” article, answer the following questions with complete sentences.

1. What is a carbohydrate?

2. What are the two types of carbohydrates and where do they come from?

3. How does our body use carbohydrates?
Soft Drink Facts

Soft drinks include soda, fruit-flavored and part-juice drinks and sports drinks.

Q: How much sugar is there in a soda?
A: There are approximately 9 teaspoons of sugar in one 12-ounce (can) soda.
There are approximately 15 teaspoons of sugar in one 20-ounce (bottle) soda.

Q: How much sugar do people eat/drink?
A: The average teenage boy eats at least 109 pounds per year. Wow!!
The average American eats more than 64 pounds per year.

Q: Who drinks soft drinks and how much do they drink?
A: Half of all Americans drink sugar-sweetened soft drinks every day!
• Soda is the most frequently consumed soft drink
• 56% of 8 year olds drink soft drinks daily
• 72% of 9 to 13 year olds drink soft drinks daily
• 78% of 14 year old girls drink soft drinks daily
• 83% of 14 year old boys drink soft drinks daily
• The average teen gets 15 teaspoons of sugar from soft drinks each day

Q: How does soda compare to milk and juice?
A:

<table>
<thead>
<tr>
<th></th>
<th>Soda (non-diet)</th>
<th>Orange Juice</th>
<th>1% Milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories, kcal</td>
<td>160</td>
<td>168</td>
<td>153</td>
</tr>
<tr>
<td>Vitamin A, IU</td>
<td>0</td>
<td>291</td>
<td>750</td>
</tr>
<tr>
<td>Vitamin C, mg</td>
<td>0</td>
<td>146</td>
<td>3</td>
</tr>
<tr>
<td>Calcium, mg</td>
<td>0</td>
<td>33</td>
<td>450</td>
</tr>
</tbody>
</table>

*per 12 ounce serving

Q: How much soft drinks do kids drink compared to milk and juice?
A:

<table>
<thead>
<tr>
<th></th>
<th>Milk</th>
<th>Juice</th>
<th>Soft drinks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kids 5 and under</td>
<td>12 oz.</td>
<td>5 oz.</td>
<td>7 oz.</td>
</tr>
<tr>
<td>Boys 6 to 11</td>
<td>12 oz.</td>
<td>4 oz.</td>
<td>13 oz.</td>
</tr>
<tr>
<td>Girls 6 to 11</td>
<td>10 oz.</td>
<td>3 oz.</td>
<td>12 oz.</td>
</tr>
<tr>
<td>Boys 12 to 19</td>
<td>11 oz.</td>
<td>4 oz.</td>
<td>29 oz.</td>
</tr>
<tr>
<td>Girls 12 to 19</td>
<td>7 oz.</td>
<td>4 oz.</td>
<td>19 oz.</td>
</tr>
</tbody>
</table>

(average amount in ounces per day)
Soft Drink Math

Use the “Soft Drink Facts” handout to answer these questions. Show your work.

1. How many pounds of sugar does the average teenage boy get each month?

2. If Bob drank one 12-ounce glass of milk instead of one 12-ounce soda for 1 day, how much more calcium would he get?

   If Bob did this for 5 days, how much more calcium would he get?

3. How many teaspoons of sugar are there in a 20-ounce bottle of soda?

4. How many teaspoons of sugar are there in a 32-ounce “big gulp” of soda?

5. It is recommended that everyone get at least eight 8-ounce glasses of water every day to stay healthy. How many ounces of water is that each day?

6. If Latoya drinks three 12-ounce cans of soda and one 12-ounce glass of juice and NO water each day, how many ounces of water does she still need to drink to meet the recommendation?
Graphing:

1. Draw a graph that shows the amount of calcium in soda, orange juice and 1% milk.

2. Draw a graph that shows the average number of ounces of soda and milk consumed by Boys 6 – 11, Girls 6 – 11, Boys 12 – 19, and Girls 12 – 19.
Grade 5

Food and Culture

Healthful Living Objective
4.03 Recognize the social significance of food in families and cultures.

English Language Arts Objectives
1.01 Expand and refine vocabulary through knowledge of prefixes, suffixes, roots, derivatives, context clues, and etymologies (word origins) to assist comprehension.
1.03 Increase reading and writing vocabulary through:
   • wide reading
   • word study
   • word reference materials
   • content area study
   • writing process elements
   • writing as a tool
   • debate
   • discussions
   • seminars
   • examining the author's craft
1.04 Use word reference materials (e.g., glossary, dictionary, thesaurus, on-line reference tools) to identify and comprehend unknown words.
2.09 Listen actively and critically by:
   • asking questions
   • delving deeper into the topic
   • elaborating on the information and ideas presented
   • evaluating information and ideas
   • making inferences and drawing conclusions
   • making judgments

Teacher Resources
• Why We Eat What We Eat
• www.pbs.org/opb/meaningoffood
• An International Menu Lesson Plan
• Tortilla in a Bag

Handouts
• Gonna Eat That?
• The Meaning of Food
• An International Menu
• Breads around the World
• Tortillas in a Bag
Focus
Distribute and instruct students to read the *Gonna Eat That?* handout. Use the following questions for discussion.

- What role does food play in people’s lives?
- How are the foods in the article different from the foods you eat?
- How important is food in our daily lives?
- Why do we eat the foods we eat?
- How does our culture or ethnic background affect the way we eat?

Teacher Input
Using the *Why We Eat What We Eat* and *An International Menu Lesson Plan* teacher resources and the website, [www.pbs.org/opb/meaningoffood](http://www.pbs.org/opb/meaningoffood), discuss that there are many types of foods associated with different cultural and ethnic groups, traditions and celebrations that feature foods, and different rules about how and when people eat. Foods and food rituals help us learn about cultures and groups.

In small groups or pairs, ask students to describe their family celebrations and daily meals, foods served, how foods are eaten and with whom, how similar and different this is from what they perceive as "mainstream America," and how this reflects the specific identity of their family and/or culture.

Using the *An International Menu Lesson Plan* teacher resource, discuss the word "etymology" and instruct students to complete activities 1-4 outlined in the *lesson plan*.

Practice and Assessment
Distribute *The Meaning of Food* handout. Instruct students to choose something to research that was discussed in class. This assignment can be done individually, in pairs or small groups. Instruct students to present their research findings to the class as a poem, picture/drawing with associated story, food tasting, one-act play or multi-media presentation.

Distribute and direct students to complete the *An International Menu* handout. Students will use a dictionary to determine the etymology of the words given on the worksheet.

Additional Activities
In pairs or individually, instruct students to research a country and write about the culture and the foods of the people. Suggestions for questions to include in the report:

- Where does the food they eat come from?
- Who cooks the food?
- How do they eat it and who do they eat with?
- Are there foods that they eat every day?
- Are there any foods that are forbidden?
- Are there special foods for celebrations?

Follow the lesson plan provided in the *Tortilla in a Bag* teacher resource. Distribute and direct students to complete the *Breads around the World* and *Tortillas in a Bag* handouts. **NOTE:** if the *Tortillas in a Bag* activity is done in class, additional materials are needed.
Is there anything that makes us more squeamish than unusual foods? When we were children, dishes others families ate were “weird.” As our taste buds matured, we added more “gross” foods to our diets, but our culture tended to set the boundaries. Most Chinese find cheese repugnant, for example, and rare is the American who relishes the thought of devouring duck’s feet, a delicacy in China.

As the world gets smaller, regional favorites get nearer, less foreign, less “weird.” Some of these far-flung foodstuffs could even make their way to your neighborhood grocery store.

**Balut**

This Filipino delicacy is a fertilized egg that is incubated until a duckling develops, and then soft-boiled and eaten.

**Durian**

An acquired taste—and smell—durian is a large, spiny green fruit from South East Asia with a dense skin that protects a creamy center that some swoon over and some find putrid. Durian has such a distinctive odor (sewer-like is the most common description) that it has been banned on public transportation in some countries.

**Fufu**

A West African dish made of pounded yam formed into slimy balls, fufu is served with meat stew or any dish with sauce or gravy.

**Fugu**

Dozens of people in Japan die each year from eating this blowfish, which has an organ containing a toxin so deadly that only specially licensed chefs are allowed to prepare it.

**Haggis**

A Scottish favorite made from the chopped heart, lungs, and liver of lamb or beef and mixed with suet, oats, onions, herbs, and spices, then stuffed into a sheep’s stomach, haggis is not for the faint of heart nor the weak of stomach.

**Hakarl**

An Icelandic dish that consists of putrefied shark meat that has been buried for months, then dried for a few more months, Hakarl is typically accompanied by a shot of Brenivinn, a caraway-flavored schnapps.

**Hu-Hu Grubs**

A New Zealand native, the larvae of the huhu beetle can be found in rotting logs and eaten raw or cooked. Connoisseurs describe the grubs as tasting nutty or like chicken.

**Nutria**

File this one under “If you can’t beat ’em, eat ’em.” The nutria is a large semi-aquatic rodent that is indigenous to South America and was imported into Louisiana for the fur industry. Over decades the critters extensively damaged the state’s coastal wetlands, so officials decided to promote nutria as a cheap and readily available food source.

**Octopus (Live)**

Eaten cut up but still writhing, raw octopus is a South Korean favorite that is often served with a pepper paste.

**Scrapple**

Named for the scrap odds and ends of pig it comprises (lips, snout, organs, etc.), scrapple is an old Pennsylvania-Dutch dish that was typically eaten at breakfast. Scrapple is comprised of a cornmeal mush made with the meat and broth, seasoned with onions, spices and herbs and shaped into loaves for slicing and frying.

**Uni (in Japan) or ricci di mare (in Italy)**

Raw sea urchin roe is popular in both sushi and pasta dishes.
Directions to student:
You can find out the answers to the questions below by going to the library, using the Internet, calling or visiting a local chef and/or interviewing a member of your family or someone in the community.

Your name

■ What are you researching? (Name a food and the culture or group it is connected to)

■ What region of the country or world is the food associated with?

■ What special cultural celebrations or family events is the food served at?

■ Describe what happens at the events.

■ Who usually makes the food?

■ What are the key ingredients? Where are they grown or made?

■ Is there any story or history associated with the food/dish?

■ Additional facts or comments:
An International Menu

Use a dictionary to match the food words with the languages in the center column from which they were taken. Write the correct language in the space provided.

<table>
<thead>
<tr>
<th>Food</th>
<th>African</th>
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1. The name we use for this native American food means barley, oats, wheat or any kind of cereal grain in England.
2. This native American food is also called an “alligator pear.”
3. This native American holiday dish was named for a country in Asia. Many things of exotic origin were given the same name in 16th Century Europe.
4. The name for this delicious pastry means “whirlpool” in German.
5. This low-fat snack is named for an Australian singer.
6. The name for this food means “little donkey” in Spanish.
**An International Menu (answers)**

Use a dictionary to match the food words with the languages in the center column from which they were taken. Write the correct answer in the space provided.

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Look up the words at left in the dictionary to find clues for answering these questions.

1. The name we use for this native American food means barley, oats, wheat or any kind of cereal grain in England. **corn**
2. This native American food is also called an “alligator pear.” **avocado**
3. This native American holiday dish was named for a country in Asia. Many things of exotic origin were given the same name in 16th Century Europe. **turkey**
4. The name for this delicious pastry means “whirlpool” in German. **strudel**
5. This low-fat snack is named for an Australian singer. **Melba toast**
6. The name for this food means “little donkey” in Spanish. **burrito**

Produced by Oklahoma Cooperative Extension Service, Division of Agricultural Sciences and Natural Resources, OSU, in cooperation with the Oklahoma Department of Agriculture, Food, and Forestry and the Oklahoma State Department of Education, 2002. Revised 2004
Breads Around the World

Write the name of the bread in the space provided next to its description. Use a dictionary if you need one.

1. ________________ Asian noodle dough dumplings filled with spiced meat. They are boiled in soup or fried and eaten as a side dish.
2. ________________ Corn or wheat dough patted into thin, flat rounds and fried on a hot griddle. They are daily bread in a country on the same continent as the US.
3. ________________ Chewy baked rolls with a hole. They are often eaten with cream cheese or other tasty toppings. Polish immigrants brought them to the US.
4. ________________ Pocket breads from the Middle East that are round, flat and hollow on the inside.
5. ________________ Flaky, tender, crescent-shaped rolls from the land of the Eiffel Tower.
6. ________________ Popular Italian pie that began as a leftover created from extra bread dough.
7. ________________ Small round breads fried in hot oil. They are made by the thousands for powwows.
8. ________________ Flat, chewy rounds of bread served with curries or with peanut butter and honey, cheese and tomato, or just butter. From the country of the Taj Mahal.
9. ________________ Like biscuits, but cut into big, thick triangles and baked. Great with tea. From a country on the island of Great Britain.
10. ________________ Flat bread made from mashed potatoes, flour and liquid. Fried on a griddle and great with brown sugar and butter rolled inside. Scandinavians created it.
Tortillas in a Bag

Ingredients (for four tortillas)

1. Place flour, salt and baking powder in bag. Close and shake just a few shakes to mix.
2. Add shortening and reclose the bag. Work bag with hands until the mixture looks crumbly and there are no large pieces of shortening visible.
3. Open the bag, and add the hot tap water. Knead in the bag until the dough is one large piece and the sides of the bag come clean.
4. Take the dough out of the bag, and divide into four pieces. Put the pieces of dough on the table, and lay the bag on top of them. Let the dough rest for 15 minutes.
5. After resting time, roll or pat the dough into eight- to 10-inch circles. If dough is too sticky you may add a little more flour. Place the circles on a griddle or frying pan heated to medium or medium high, and cook until dark brown spots appear. Turn and cook on the other side until brown.
6. Fill tortillas with ground beef, beans, salsa, cheese and lettuce to make burritos, if desired, or spread with butter or peanut butter.
Grade 5

Ad Savvy

Healthful Living Objective
4.04 Analyze how media images of food choices and eating behaviors may be unhealthy.

Math Objective
4.01 Collect, organize, analyze, and display data (including stem-and-leaf plots) to solve problems.

Language Arts Objectives
3.04 Make informed judgments about television, radio, video/film productions, other electronic mediums and/or print formats.
3.07 Make informed judgments about:
   • bias
   • propaganda
   • stereotyping
   • media techniques

Teacher Resource
• Food Advertising Strategies

Materials Needed
• Newspapers and magazines with articles/ads about food, diet, exercise and health
• Video or DVD with 1-2 commercials for foods or beverages
• TV, VCR or DVD player

Handouts
• Taking a Look at the Media
• Become a Critical Viewer
• Foods on Television
• Word Problems for Foods on Television

Focus
Find a food or beverage ad from a magazine or newspaper. Show it to students and ask them what the ad is selling and to whom it is being sold. Point out that we see advertisements for products all the time and that advertisers work very hard to create ads that appeal to customers and influence customers to buy their products.
Teacher Input
Show a video of a commercial for a food or beverage. Using the Food Advertising Strategies teacher resource, ask basic questions about the content of the commercial.

Discussion Questions
- What is the purpose of the commercial?
- Who is the target audience of the commercial?
- What is the commercial trying to sell us?
- What advertising methods are used?
- Are these methods appropriate for what the advertisers are trying to do?
- What senses are being appealed to?
- What are the effects of purchasing the product?
- Where does the product fit into MyPyramid?
- Was the product a healthy choice?
- Was the product suppose to make you look or feel better?

Practice and Assessment
Provide students with newspapers and magazines. Distribute and direct them to complete the Taking a Look at the Media handout.

Instruct students to select one ad from the previous activity. Distribute and direct students to complete the Become a Critical Viewer handout using that ad.

Distribute and instruct students to complete the Foods on Television handout as a homework assignment. As a follow-up classroom assignment, have students complete Word Problems for Foods on Television.

Divide students into groups. Assign each group a fruit or a vegetable to research using reference books and/or the internet. Ask them to make up a commercial advertising the item. Give them a focus for the commercial (for example, they should be selling the item to other 5th graders) and tell them that they should try to appeal to that group. Each group may have a different focus.
Taking a Look at the Media

Name of Publication: ____________________________________

Type of Publication: _____________________________________

Choose a newspaper or magazine. Find articles and ads on ways to change your body. In the table below, describe what you find. Some examples are:
- if you read an article about a man losing weight by following a certain diet, write “man losing weight” in the articles column
- if you see an advertisement for an exercise bike, write “exercise bike” in the advertisement column

<table>
<thead>
<tr>
<th>Type of way to change your body</th>
<th>Advertisements</th>
<th>Articles</th>
<th>Total</th>
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<tbody>
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<td>Exercise</td>
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Questions:
1. How many “ways to change the body” do you think were healthy? What percentage of the total is this?

2. Name one healthy way to change the body that you found and describe why it is healthy.

3. How many “ways to change the body” do you think were unhealthy? What percent of the total is this?

4. Name one unhealthy way to change the body that you found and describe why it is unhealthy.

5. Compare your findings with another classmate. How are your results similar and different?
Become a Critical Viewer

We are bombarded daily with media messages about how we should feel and look. Advertisers often appeal to our desires and feelings to sell things. You will see and hear messages on TV, radio, computers and billboards. You will also see them in magazines and newspapers. Becoming a critical viewer means knowing how messages are used to help sell a product.

Directions: Use a print ad for a food or beverage product. Write complete sentences to answer the questions below.

1. Describe the ad you saw. Cut the ad from the newspaper or magazine and attach it to this worksheet.

2. What emotion or feeling was used to help sell the product? There may be more than one. (Examples: happiness, sadness, love, excitement)

3. What does the ad say the product will do for you? (Remember, this may be said with or without spoken words.)

4. Do you believe the product will do this? Why or why not?

Source: www.uwyo.edu/wintherockies
Name: ____________________________

Foods on Television

Time of day: ________________

Length of time spent watching TV: _____________

Programs watched: ________________________________

<table>
<thead>
<tr>
<th>Type of Food</th>
<th>Name of Food</th>
<th>Number of times you saw foods in this group.</th>
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<td>Beverage</td>
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<td>Other</td>
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Total number of times you saw food
How many times did you see fruits and vegetables? ________________
How many times did you see other foods? ________________

Write a paragraph explaining the results of your experiment. Do you think there should be more advertising for fruits and vegetables? Why or why not?
Word Problems for Foods on Television

1. Of all the times you saw food, how many were fruits? (write as a fraction)

2. Write that fraction as a decimal.

3. Of all the times you saw food, how many were vegetables? (write as a fraction)

4. Write that fraction as a decimal.

5. Of all the times you saw food, how many were for fruits AND vegetables? (show addition)

6. Write that fraction as a decimal.

7. If you watch 4 hours of television every day and 15 minutes of every hour is taken up by commercials, how many hours of commercials do you watch?

8. What fraction of an hour do the commercials represent?

9. Draw a pie graph to show the amount of time for commercials in one hour.
10. James watched television for 5 hours one Sunday. He saw 75 commercials during that time. Each commercial lasted 1 minute. One fifth (1/5) of the commercials were for fast food, one third (1/3) of the commercials were for other products, and the rest were for soft drinks.

a. How many minutes were spent watching fast food commercials?

b. How many minutes were spent watching soft drink commercials?

c. How many minutes were spent watching other commercials?

d. Draw a bar graph to show the time spent watching total TV, soft drink commercials, fast food commercials, and other commercials (use a separate bar for each).

e. If James had spent half the time watching television and half the time playing outside, how many minutes of commercials would he have seen?

f. If half of the commercials he had seen in that time were for fruits and vegetables, how many minutes of commercials for fruits and vegetables would he have seen?
**Grade 5**

**Healthy Body, Healthy Mind**

**Healthful Living Objective**
4.06 Compare and contrast the dangers of dieting with healthy weight management.

**Math Objective**
2.01 Estimate the measure of an object in one system given the measure of that object in another system.

**English Language Arts Objective**
2.09 Listen actively and critically by:
- asking questions
- delving deeper into the topic
- elaborating on the information and ideas presented
- evaluating information and ideas
- making inferences and drawing conclusions
- making judgments

**Teacher Resources**
- *Fad Diets – the Whole Truth*
- *Truth Behind the Claims*
- *Twists and Turns of Fad Diets*
- *Dietary Guidelines for Healthy Children*
- *Exercise and Children*

**Handouts**
- *Eat Well, Be Active! It’s Good for Your Mind and Body!*
- *Eat When You’re Hungry, Stop When You’re Full!*
- *MyPyramid Worksheet*
- *MyPyramid for Kids*
- *Serving Sizes are in Your Hand*

**Focus**
Ask students what popular diets they have heard of. Responses may include: Atkins, South Beach, Sugar Busters, The Zone, The Cabbage Soup diet and others. Allow for some discussion of what some of these diets are.

**Teacher Input**
Using the *Fad Diets – the Whole Truth, Truth Behind the Claims and Twists and Turns of Fad Diets*, discuss the dangers of fad diets. Using the *Dietary Guidelines for Healthy Children and Exercise and Children* teacher resources, emphasize healthy eating and physical activity patterns that can be followed for a lifetime.

Distribute the *Eat Well, Be Active! It’s Good for Your Mind and Body!* and the *Eat When You’re Hungry, Stop When You’re Full!* handouts and continue the discussion, instructing students to respond to the check lists. Emphasize ways to be physically active and the importance of eating healthily instead of trying fad diets.
Practice and Assessment
Distribute the MyPyramid Worksheet handout and instruct students to record all the food they eat for a day. Distribute the MyPyramid for Kids and Serving Sizes are in Your Hand handouts to be used as guides in determining food groups and amount eaten.
Eat Well, be Active!
It's Good for Your Mind and Body!

Healthy bodies and happy people come in all different shapes and sizes! Your body is growing and changing at a pace that is right for you! It is ok to be happy with who you are.

Don't try to look like your friends or magazine models. Kids your age may be tall, short, thin or heavy. Every body grows at a different speed. Computers can change pictures so that models look “perfect.” There is no “right” or “wrong” or “perfect” body shape or size!

Here are some of the great things that eating well and exercising regularly can do for you!

Put a check by the things that are important to you:

- feel better about myself
- be healthy
- grow as tall as I’m supposed to be
- think better and do better in school
- be the best I can be in activities I enjoy
- be in a better mood
- sleep better
- have more energy to do all the things I want to do

Tell a friend, teacher, your parents or doctor what you’ve decided to do and why.

Try not to think of fat and calories as bad things to avoid! Eating foods that have fat doesn’t mean you’ll get fat. Part of your brain is made from fat. Your brain needs fat to help you think and to send messages to your muscles and organs.

Eating well means eating and enjoying all different kinds of foods from all the food groups. Each food group supplies special vitamins, minerals and other nutrients. For example, milk gives you calcium to make your bones grow stronger. Eating many different foods will help you think better and help keep your body fit and healthy so that you feel good.

Move your body! Instead of watching television, playing video games or listening to music, try to trade some of your free time every day to do things you enjoy that keep your body moving. Playing sports, dancing, riding a bike or walking to a friend’s house will help keep your mind sharp and your body healthy.
**Eat When You’re Hungry, Stop When You’re Full!**

**Do You . . .**

- Believe there are good and bad foods?
- Try not to eat foods that contain fat or that you think will make you fat?
- Skip meals or diet to lose weight?
- Eat foods only from certain food groups, such as fruits and vegetables?

**Here’s a simple rule! Eat when you are hungry and stop when you are full.** Eat many different foods. There are no “bad” foods.

**It’s not good for you to diet, skip meals or avoid eating entire groups of foods.** If you don’t eat a lot of different kinds of foods, you may not feel well and could make yourself sick. Skipping meals can make you so hungry that you may eat too much food when you finally have a meal or snack.

**Fat makes foods taste good and helps you feel full.** You may find you get hungry faster and want to eat more often if you eat mostly non-fat foods. Eating only foods labeled as “low-fat” or “non-fat” does not always mean you are eating well.

**Enjoy Eating Many Different Foods**

**Do You . . .**

- Avoid foods even though they taste good and are good for you?
- Eat any of your meals or snacks alone so that no one will see how little or how much you eat?
- Get upset, scared or feel guilty about eating certain foods?

**Eating should be fun! It’s OK to eat!**

- **Good tasting food is easy to enjoy!** Eat with your family or friends instead of eating alone. You can laugh and talk about your day, how you feel and you’ll eat better too! Try some new foods you’ve never tasted.

- **Don’t feel guilty about eating!** It’s OK to eat for many different reasons: when you’re hungry, or celebrating a birthday, holiday or family gathering, or having dinner at a friend’s house.

Here’s what you can do to eat better!

Put a check by all the things you will try.

- Tell a friend, or your mom or dad, what you plan to do.
- I will listen to my body and eat when I’m hungry and stop when I’m full.
- I will eat regularly. I will start off my day with breakfast and try to eat 3 meals a day, plus some nutritious snacks.
- I will try to eat many different foods from all the food groups, including milk, cheese, fruits, vegetables, breads, cereals, rice, pasta, meats, beans and nuts. I’ll even treat myself to sweets and desserts sometimes.

Here are some things you can do to enjoy eating and feel better about yourself!

Check off what you will try.

- I will eat with my family and friends more often.
- Whether I feel sad, lonely, upset or happy, if I’m not really hungry, I’ll find something else to do instead of eating.
- Being thinner doesn’t mean being happier or healthier. If I hear someone say they are too fat and need to diet, I’ll tell them they look OK the way they are. I’ll encourage them to eat well and be active.
### MyPyramid Worksheet

**Name:**

Check how you did yesterday and set a goal to aim for tomorrow

<table>
<thead>
<tr>
<th>Write In Your Choices From Yesterday</th>
<th>Food and Activity</th>
<th>Tip</th>
<th>Goal (Based On a 1800 Calorie Pattern)</th>
<th>List Each Food Choice In Its Food Group*</th>
<th>Estimate Your Total</th>
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<tbody>
<tr>
<td><strong>Breakfast:</strong></td>
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<td><strong>Physical Activity</strong></td>
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</tbody>
</table>

How did you do yesterday?  
  [ ] Great  [ ] So-So  [ ] Not So Great

My food goal for tomorrow is: ________________________________________________________

My activity goal for tomorrow is: ___________________________________________________

---

*Some foods don’t fit into any group. These “extras” may be mainly fat or sugar—limit your intake of these.

---

Based On a 1800 Calorie Pattern:

**Grains**

- **6 ounce equivalents**  
  (1 ounce equivalent is about 1 slice bread, 1 cup dry cereal, or ½ cup cooked rice, pasta, or cereal)

**Vegetables**

- **2½ cups**  
  (Choose from dark green, orange, starchy, dry beans and peas, or other veggies)

**Fruits**

- **1½ cups**  
  (Make most choices fruit, not juice)

**Milk**

- **3 cups**  
  (1 cup yogurt or 1 ½ ounces cheese = 1 cup milk)

**Meat and Beans**

- **5 ounce equivalents**  
  (1 ounce equivalent is 1 ounce meat, chicken or turkey, or fish, 1 egg, 1 T. peanut butter, ½ ounce nuts, or ¼ cup dry beans)

**Physical activity:**

- **At least 60 minutes** of moderate to vigorous activity a day or most days.
MyPyramid
Eat Right. Exercise. Have Fun.
MyPyramid.gov

Grains
Make half your grains whole

- Start smart with breakfast. Look for whole-grain cereals.
- Just because bread is brown doesn’t mean it’s whole grain. Search the ingredients list to make sure the first word is “whole” like “whole wheat”.

Vegetables
Vary your veggies

- Color your plate with all kinds of great-tasting veggies.
- What’s green and orange and tastes good? Veggies! Go dark green with broccoli and spinach, or try orange ones like carrots and sweet potatoes.

Fruits
Focus on fruits

- Fruits are nature’s treats – sweet and delicious. Go easy on juice and make sure it’s 100%.

Milk
Get your calcium-rich foods

- Move to the milk group to get your calcium. Calcium builds strong bones.
- Look at the carton or container to make sure your milk, yogurt, or cheese is low-fat or fat-free.

Meat & Beans
Go lean with protein

- Eat lean or low-fat meat, chicken, turkey, and fish. Ask for it baked, broiled, or grilled – not fried.
- It’s nutty, but true. Nuts, seeds, peas, and beans are all great sources of protein, too.

<table>
<thead>
<tr>
<th>Grains</th>
<th>Vegetables</th>
<th>Fruits</th>
<th>Milk</th>
<th>Meat &amp; Beans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eat 6 oz. every day: at least half should be whole</td>
<td>Eat 2 1/2 cups every day</td>
<td>Eat 1 1/2 cups every day</td>
<td>Get 3 cups every day: for kids ages 2 to 6, it’s 2 cups</td>
<td>Eat 5 oz. every day</td>
</tr>
</tbody>
</table>

Oils
Oils are not a food group, but you need some for good health. Get your oils from fish, nuts, and liquid oils such as corn oil, soybean oil, and canola oil.

Find your balance between food and fun
- Move more. Aim for at least 60 minutes everyday, or most days.
- Walk, dance, bike, rollerblade – it all counts. How great is that!

Fats and sugars — know your limits
- Get your fat facts and sugar smarts from the Nutrition Facts label.
- Limit solid fats as well as foods that contain them.
- Choose food and beverages low in added sugars and other caloric sweeteners.
Serving Sizes are in Your Hand

A fist or cupped hand = 1 cup

1 serving = ½ cup cereal, cooked pasta or rice
or 1 cup of raw, leafy green vegetables
or ¼ cup of cooked or raw, chopped
vegetables or fruit

A thumb = 1 oz. of cheese

Consuming low-fat cheese is a good way to help you meet the required servings from the milk, yogurt and cheese group. 1 ½ - 2 oz. of low-fat cheese counts as 1 of the 2-3 daily recommended servings.

Handful = 1-2 oz. of snack food

Snacking can add up. Remember, 1 handful equals 1 oz. of nuts and small candies. For chips and pretzels, 2 handfuls equals 1 oz.

Palm = 3 oz. of meat

Two servings, or 6 oz., of lean meat (poultry, fish, shellfish, beef) should be a part of a daily diet. Measure the right amount with your palm. One palm size portion equals 3 oz., or one serving.

Thumb tip = 1 teaspoon

Keep high-fat foods, such as peanut butter and mayonnaise, at a minimum by measuring the serving with your thumb. One teaspoon is equal to the end of your thumb, from the knuckle up. Three teaspoons equals 1 tablespoon.

1 tennis ball = 1 serving of fruit

Healthy diets include 2-4 servings of fruit a day.

Because hand sizes vary, compare your fist size to an actual measuring cup.
Grade 5

Walk with Me

Healthful Living Objective
4.07 Describe how eating habits and physical activity levels can affect a person’s weight and health.

Math Objectives
1.02 Develop fluency in adding and subtracting non-negative rational numbers.
1.03 Develop flexibility in solving problems by selecting strategies and using mental computations, estimations, calculators or computers and paper and pencil.

English Language Arts Objective
4.03 Make oral and written presentations to inform or persuade, selecting vocabulary for impact.

Teachers Resources
• Walking
• What is Physical Activity?

Materials Needed
• Several yardsticks or tape measures
• Pail of water
• 3 stop watches
• Walk Box (Small cardboard box decorated and with an opening cut in the top)

Handout
• Walk this Way

Focus
Ask students the following question: If you are an average adult and live to be 75 years old, how many years will you spend sleeping, watching TV and being physically active? Discuss the answers: 24 years sleeping, 13 years watching TV and ½ year being physically active.

Discussion Questions
• What do you think about spending more time watching TV than being physically active?
• Do you think the average adult today is physically fit?
• Do you think the average kid today is physically fit?
• What does being physically fit mean to you?

Teacher Input
Using the Walking and What is Physical Activity? teacher resources, discuss the health benefits of physical activity and in particular, walking.

Distribute the Walk this Way handout. Take the students outside and discuss three gears of walking:
• First gear: easy strolling, no sweating, light exertion. Demonstrate and have students practice this walk.
• Second gear: normal walking, comfortable breathing and talking, moderate exertion. This is the pace to use for class walks. Demonstrate and have students practice this walk.
• Third gear: fast walking, heavy breathing, sweating, muscles working intensely. Demonstrate and have students practice this walk.
Practice and Assessment
Distribute and instruct students to complete the “Step Length” section of the *Walk this Way* handout.

As a class, walk a set distance, such as once around the playground, school building or walking track. Instruct students to count the number of steps they take on this walk. Have three students use stop watches to record how long the walk takes. When finished, instruct students to complete the “Class Walk” section of the *Walk this Way* handout.

Set individual and class goals and record those on the worksheet. Decide how much time or the number of steps the class will walk each day. After each walk record the time and number of walkers on a slip of paper and put it in the Walk Box. Instruct students to record additional walks during the day at school (recess, lunch, etc.) and at home and put those slips in the Walk Box. Keep track of the number of steps to common locations (water fountain, school office, restroom, resource center, etc.) and add those trips to the Walk Box. **NOTE:** the class goal could set a larger goal such as accumulating enough steps to walk across North Carolina, to the state capital or to Washington, D.C.

Create a progress marker for the class goal. Assign students to total the slips that are in the Walk Box and add those to the progress marker. This could be done on a daily or weekly basis.

Provide students with slips of paper before and after class walks. Before each walk, ask them to write the word **before** and record how they feel (tired, bored, anxious). After the walk ask them to write the word **after** and record how they feel (refreshed, awake). Keep these for a week or two and instruct students to prepare an oral presentation on how their feelings changed with the physical activity.
Walk this Way

Name ________________________________

**Step Length**
1. Work in pairs. Pour some water on the sidewalk, just enough to get it wet.
2. Do a foot dance in the water to wet the bottom of your shoes. Walk away from the puddle at a normal pace leaving wet footprints. Step heel-toe, heel-toe to leave full footprints.
3. Have your partner measure your step length with the tape measure. Measure from where one heel touches the ground to where the other heel touches. Measure three different steps and record below.

Step one ________ inches
Step two ________ inches
Step three ________ inches

**Average Step Length ________ inches**

(Add three steps and divide by 3)

**Class Walk**
1. Number of steps I took ________ x my average step length = ________ total inches walked.
2. Total inches walked ________ ÷ 12 = ________ number of feet walked.
3. Number of minutes we walked ________.
4. I can walk ________ feet in ________ minutes.

**Set a Goal**
I will walk ________ minutes or ________ steps per day while not in school. I will turn the total steps into the class Walk Box to help reach our class goal.

**Class Goal**
Our class will walk ________ minutes or ________ steps per day while at school.

**Other Class Goals**