# Calorie Countdown

## *Utah Healthy Lifestyles*

**Time:** 1 hour

**Grade:** Fourth and Fifth

**Standards:**

Fourth: 7040-06
Determine the relationship between food intake and activity.

Fifth: 7050-06
Determine the relationship between food intake and activity.

### Objective

1. Students will categorize foods according to their components and energy content.

### Materials

Calorie Math Worksheet (enough for each student)

### Background

Obesity, rather than malnutrition, is a modern-day American problem. New reports regularly tell us our children are eating too much and exercising too little. The result is overweight children whose present and future health may be in jeopardy. Obesity is associated with heart disease, high blood pressure, hardening of the arteries, arthritis, diabetes, and other diseases. The U.S. Department of Agriculture recommends the calories in American diets (young and old alike) consist of approximately 50 percent carbohydrates, less than 30 percent fat, and approximately 20 percent protein. Since each gram of fat contains nine calories and each gram of carbohydrate or protein contains only four calories, it's easy to quickly add up fat calories. Also, fat calories more easily are stored in the body as fat tissue, while carbohydrates are more readily burned as energy and protein is used for growth and repair of tissue.

A calorie is a unit of measure for the amount of energy provided by foods. We think of a calorie as the amount of energy we get from food. If the number of calories consumed during the day is more than the number of calories burned by the body during the time, we gain weight. Unfortunately, those extra calories are stored as fat.

Following the recommendations of the USDA Food Guide Pyramid can help students keep their consumption near 50 percent carbohydrate, 30 percent fat, and 20 percent protein. This daily plan suggests:

- 6-11 Servings from the breads, cereal, rice and pasta group
- 2-4 Servings from the fruit group
- 3-5 Servings from the vegetable group
- 2-3 Servings from the milk, yogurt and cheese group
- 2-3 Servings from the meat, poultry, fish, dry beans, eggs and nuts group

Jumping rope can burn additional calories.

Here are some examples of foods according to groups.

**Fats and Sugars**

| | | |
|---|---|---|
| butter | cake | candy |
| cookies | potato chips | margarine |
| mayonnaise | jam & jelly | olives |
| syrup | corn chips | honey |

**Milk Yogurt and Cheese**

| | | |
|---|---|---|
| whole milk | skim milk | cheese |
| milkshake | pudding | ice milk |
| buttermilk | ice cream | mozzarella cheese |
| yogurt | frozen yogurt | dry milk |

**Meat, Poultry, Fish, Dry Beans, Eggs and Nuts**

| | | |
|---|---|---|
| beef | pork | lamb |
| veal | fish | chicken |
| turkey | hot dogs | ham |
| eggs | tuna | peanut butter |
| ground beef | shrimp | sausage |
| peanuts | pecans | dry beans or peas |

**Fruit**

| | | |
|---|---|---|
| apples | banana | blueberries |
| cantaloupe | dates | grapefruit juice |
| grapes | kiwi | nectarines |
| orange juice | oranges | peaches |
| pears | pineapple | plums |
| pumpkin | raisins | rhubarb |
| strawberries | tangerines | watermelon |

**Vegetables**

| | | |
|---|---|---|
| broccoli | cabbage | carrots |
| celery | corn | greenbeans |
| lettuce | mushrooms | onions |
| potatoes | sauerkraut | spinach |
| sweet potatoes | tomato juice | zucchini |

**Bread & Cereal**

| | | |
|---|---|---|
| bagels | biscuits | cinnamon roll |
| cornbread | corn grits | cereal |
| crackers | hamburger bun | macaroni |
| muffins | noodles | oatmeal |
| pancakes | popcorn | raisin bread |
| rice | rolls | rye bread |
| spaghetti | waffles | wheat bread |

## Vocabulary

1. ***calorie*—**The unit of energy required to raise the temperature of one gram of water one degree Celsius; also measures the amount of energy foods provide.
2. ***carbohydrate*—**Sugars, starches, and cellulose which serve as the body's main source of energy.
3. ***complex carbohydrates*—** Difficult to digest carbohydrates, such as starches and dietary fiber.
4. ***fats*—**Concentrated energy source found in all body cells; carries fat-soluble vitamins through the body.
5. ***minerals*—**Small, inorganic substances which have specific roles in the body.
6. ***nutrients*—**Substances found in foods that nourish the body to keep it healthy, growing and active
7. ***proteins*—**A series of amino acids serving as basic structural units; used to build and repair body tissues.
8. ***simple carbohydrates*—** Easily-digested carbohydrates such as, glucose, lactose, and fructose.
9. ***vitamins*—**Complex organic substances neede in small amounts.

Research shows some kinds of carbohydrates and fats are better than others. Complex carbohydrates provide long-lasting energy and help in digestion. Whole grain breads and cereals, fruits, vegetables, and beans provide complex carbohydrates. Simple carbohydrates, such as sugars, burn quickly. Thus, they don't provide any nutritional advantages. These include candy bars, carbonated beverages and many desserts.

In addition to eating properly, physical activity adds to overall health. Children need to realize simply moving around adds to their fitness. Adults sometimes stereotype exercise as a scheduled activity they have to do rather than something they enjoy. Physical activity for children is any kind of movement at any time that contributes to their health. Proper nutrition and physical activity habits need to be developed in children as a way of life.

## Activity Procedures

1. Design a large bulletin board with sections for carbohydrates, fats, and proteins.
2. Ask students to bring labels and packages of different food products.
3. Review the amount of each food component found on the label. Allow students to tack their labels and packages in the section of the primary food component.
4. Calorie Math worksheet—After discussion about calories, ask students to complete this worksheet. They will need calculators or scratch paper.

**Answer Key:**

1. 525/ 155 = = 3.39 hours
2. 225/75 = = 3 times more calories burned
3. 3 X 150 = 450 calories
4. 300/160 = 1.88 hours
5. 325 - 90 = 235 calories
6. 300 + 150 = 450 calories
7. 525 + 225 + 325 = 1, 075 calories
8. popcorn
9. cheeseburger (if it has tomato, lettuce, pickle, etc.) and pizza
10. answers vary

## Additional Activities, What's Next?

1. Discuss examples of foods that are primarily carbohydrates, fats, or proteins. Many foods are actually a combination of the three, yet most are predominantly one.
2. Have the students keep a food diary for one or more days. Afterward, the students should sort those foods into the Carbohydrate, Fat, or Protein categories. Some foods will be in more than one category. For example, a hamburger is under protein for meat and carbohydrate for the bun. A hamburger with a lot of grease or an oil-based topping like mayonnaise would also be in the fat category.

*Adapted from the National FFA Organization: Food For America.*

Name_____ **Activity Sheet**

# Calorie Math

Use these charts to complete the math problems.

## Calorie Counts of Foods

| | |
|---|---|
| 1/4 lb. cheeseburger | 525 |
| French fries | 225 |
| Milkshake | 325 |
| 1/2 small, thin supreme pizza | 525 |
| 12 oz. soda pop (not diet) | 150 |
| 3 cups popcorn (not buttered) | 100 |
| 6 oz. fat free yogurt | 90 |
| Glazed doughnut | 150 |
| Chocolate & peanut candy bar | 300 |

## Calories Burned Per Hour

| (for a 100 lb.person) | |
|---|---|
| bicycling | 160 |
| football | 225 |
| rollerblading | 260 |
| rope jumping | 525 |
| soccer | 405 |
| swimming | 240 |
| walking | 155 |
| watching TV | 75 |

1. How long would you have to walk to burn the calories in a serving of pizza? 525/155 =_____

2. How many times more calories does football burn per hour than watching TV? ____ / 75 = _____

3. How many calories are consumed by drinking 3 cans of pop during the day? 3 x _____ = _____

4. How long would you have to bicycle to burn the calories in a candy bar? 300 / _____ = _____

5. How many more calories are consumed by eating a milkshake rather than yogurt? ____ - ____ = _____

6. How many calories would be in a snack consisting of a candy bar and a soda pop? ____ + ____ = ___

7. How many calories are in fast food meal consisting of a cheeseburger, French fries and a milkshake?
____ +____ + ____ = _____

8. Which of these foods should you choose for a low-fat, high-fiber snack? _____

9. Which of these foods include ingredients from all four food groups? _____

10. Which physical activity do you enjoy and practice most? _____