

## Knowing Nutrition

**Use a Calorie chart and an activity chart to learn about how we consume and burn the energy in food.**

The food we eat provides the energy we need to work, play, and stay healthy. The energy in food is measured in **calories (cal)**, which is the thermal energy required to raise the temperature of 1 g of water 1°C. Because a single calorie is such a small amount of energy, nutritionists and food makers use the **kilocalorie (C)**, or 1,000 calories, to measure the energy in food and drinks. The number of Calories a person needs to consume each day depends largely on his or her body size and level of activity. The more active a person is, the more Calories he or she needs to keep going. The chart below shows Calorie counts for single servings of some common foods.

Calorie Count

Food	C
Apple	81
American cheese	105
Baked potato with sour cream	393
Baked chicken, white meat	142
Wheat bread	70
Carrots	31
Cola	152
Corn flakes	100
French fries	235
Plain hamburger	275

Food	C
Low-fat milk	90
Orange juice	112
Pancake	61
Pancake syrup	50
Peanut butter	188
Cheese pizza	140
Scrambled egg	100
Spaghetti	260
Vanilla ice cream	184
Vegetable soup	78

### Counting Your Calories

1. Use the data in the Calorie chart to calculate the total number of Calories consumed in each of the following meals. Be sure to show your work.

**a. Breakfast**

- 2 scrambled eggs
- 1 slice of bread
- 1 glass of orange juice
- 1 pancake

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Calorie total = \_\_\_\_\_

**b. Lunch**

- 1 peanut-butter sandwich  
(2 slices of bread)
- 1 bowl of soup
- 1 apple
- 1 cola

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Calorie total = \_\_\_\_\_

Knowing Nutrition, continued

**c. Dinner**

- 1 baked potato \_\_\_\_\_
- 2 pieces of chicken \_\_\_\_\_
- 1 glass of milk \_\_\_\_\_
- 2 servings of carrots \_\_\_\_\_
- 1 ice cream \_\_\_\_\_

Calorie total = \_\_\_\_\_

2. How many Calories were consumed in the entire day?

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**Activity Chart**

The following chart shows the approximate number of Calories burned in half an hour of exercise. Note that Calories burned varies with a person's mass and type of exercise.

Calories Burned Per Half Hour of Exercise

Activity	Body mass (kg)				
	32-42	43-49	50-57	58-66	67-75
Basketball	123	155	195	240	280
Bicycling	185	225	260	300	340
Bowling	30	35	39	45	52
Jogging	243	287	330	385	440
Skating	96	108	120	135	149
Soccer	156	186	220	266	312
Swimming	182	215	248	292	336
Volleyball	150	173	195	225	255
Walking	108	126	144	168	192

Hint: To convert weight in pounds (lb) to mass in kilograms (kg), multiply pounds by 0.45.

Use the data from the activity chart above to answer the following questions:

3. How many Calories does a 55 kg person burn in half an hour of swimming, half an hour of playing basketball, and an hour of walking?

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4. How many fewer Calories are burned in half an hour of bowling by a 74 kg person than in half an hour of jogging by a 40 kg person?

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Knowing Nutrition, continued

5. A 44 kg girl eats a lunch of a hamburger with cheese, a serving of French fries, and a cola. Would an hour of jogging burn off the Calories she consumed?

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6. The “special of the day” at the cafeteria is one piece of baked chicken, a bowl of soup, carrots, and a glass of milk. You know that you will be skating after school for one hour. Assuming that you have a mass of 66 kg, will this meal give you enough energy for your workout?

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7. How long would a 64 kg person have to play volleyball to burn 450 C?

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8. How many more Calories does a 41 kg person burn in half an hour of jogging than a 60 kg person who spends the same amount of time walking?

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9. After an hour of playing basketball, two 75 kg members of the team go out to lunch. They each consume two hamburgers and a cola. How many more Calories did they consume than burn?

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**Long-term Challenge**

10. Design a three-day menu for yourself, and calculate the total number of Calories you would consume. Then design an exercise program that burns approximately the same number of Calories as you consume. Use a variety of different foods and physical activities in your plans.