



KidsHealth.org/classroom

Teacher's Guide

This guide includes:

- Standards
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Standards

This guide correlates with the following National Health Education Standards:

Students will:

- Comprehend concepts related to health promotion and disease prevention to enhance health.
- Analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.
- Demonstrate the ability to access valid information and products and services to enhance health.
- Demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.
- Demonstrate the ability to use decision-making skills to enhance health.
- Demonstrate the ability to use goal-setting skills to enhance health.
- Demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.
- Demonstrate the ability to advocate for personal, family, and community health.

Your state's school health policies:
nasbe.org/HealthySchools/States/State_Policy.asp

Energy balance is an important concept for students to understand because it can make them underweight, overweight, or just plain tired. Energy balance is the relationship between the amount of calories people consume and the amount they burn. The following discussion questions and activities will help students understand what they can do to “balance” their energy.

Related KidsHealth Links

Articles for Teens:

Metabolism

KidsHealth.org/teen/your_body/body_basics/metabolism.html

Exercise

KidsHealth.org/teen/school_jobs/college/exercise.html

Why Exercise Is Wise

KidsHealth.org/teen/your_body/take_care/exercise_wise.html

Figuring Out Fat and Calories

KidsHealth.org/teen/food_fitness/nutrition/fat_calories.html

Energy Drinks and Food Bars: Power or Hype?

KidsHealth.org/teen/food_fitness/nutrition/energy.html

A Guide to Eating for Sports

KidsHealth.org/teen/food_fitness/sports/eatnrun.html

How Can I Lose Weight Safely?

KidsHealth.org/teen/food_fitness/dieting/lose_weight_safely.html

Discussion Questions

Note: The following questions are written in language appropriate for sharing with your students.

1. What are calories? How many calories do you think you need each day? How do we use calories? What do our bodies do with the calories we don't use?
2. What is “metabolism”? How does your body's metabolism affect how you function and feel? What does it mean to have a higher or lower metabolism than others? What things affect your metabolism level?
3. What effect does exercise have on your metabolism? People say that exercise makes people feel better and have more energy. Why?
4. Do you ever feel run down during the day? What is happening to your energy balance? How can you keep the balance right all day?



Activities for Students

Note: The following activities are written in language appropriate for sharing with your students.

Energy Tracker

Objectives:

Students will:

- Think critically about how they might alter the balance for better weight control or energy.

Materials:

- Pen or pencil
- Energy Tracker handout (available at: KidsHealth.org/classroom/9to12/personal/nutrition/energy_balance_handout1.pdf)
- Access to the library or online references

Class Time:

This is an at-home activity. The Energy Tracker will take 3 days.

Activity:

In 3 days, you can track your energy balance and get a pretty good idea of whether it's on track or getting derailed. On the Energy Tracker handout, write down all the foods you eat each day and all the exercise activities you do. Be sure to include snacks and everyday activities like walking.

Next, use the Internet or references from the school library to look up: 1) how many calories are in the foods you eat and 2) how many calories are burned during the activities you do. Some foods you eat will have the calories printed on the back, so you can jot them down as you go. Finally, be sure to answer the questions at the bottom of the handout.

Extension:

Do you have any goals for your energy balance, like weight gain, weight loss, or a more consistent energetic feeling? In a paragraph, explain how you might change the food, exercise, or the timing of your food and exercise in your Energy Tracker to reach your goals.

Reproducible Materials

Handout: Energy Tracker

KidsHealth.org/classroom/9to12/personal/nutrition/energy_balance_handout1.pdf

Quiz: Energy Balance

KidsHealth.org/classroom/9to12/personal/nutrition/energy_balance_quiz.pdf

Answer Key: Energy Balance

KidsHealth.org/classroom/9to12/personal/nutrition/energy_balance_quiz_answers.pdf



Personal Health Series
Energy Balance

Name: _____

Date: _____

Energy Tracker

Instructions: Track your energy balance. Fill in the foods you eat and their caloric values, as well as your exercises and their calorie-burning power. Answer the questions about your energy balance.

DAY 1	Food	Time Eaten	Calories	Exercise	Time Began	Duration	Calories Burned
Breakfast							
Lunch							
Dinner							
Snacks							
Did you feel tired today? If so, when?							

DAY 2	Food	Time Eaten	Calories	Exercise	Time Began	Duration	Calories Burned
Breakfast							
Lunch							
Dinner							
Snacks							
Did you feel tired today? If so, when?							

DAY 3	Food	Time Eaten	Calories	Exercise	Time Began	Duration	Calories Burned
Breakfast							
Lunch							
Dinner							
Snacks							
Did you feel tired today? If so, when?							

1. Did your calories consumed and calories burned balance each other out each day? If not, how did they differ? _____
2. Did you feel tired on any day? How does your energy balance help explain your fatigue? _____
3. Did anything about the Energy Tracker results surprise you? If so, what? _____



Name: _____

Date: _____

Quiz

Instructions: Answer each question.

- “Metabolism” means:
 - chemical reactions in the body’s cells
 - consumption of calories
 - converting food into the energy for action
 - eating enough food to power the body’s activities
 - a and c
 - b and d
- A calorie is a unit of:
 - volume
 - temperature
 - energy
 - mass
- The basal metabolic rate (BMR) is defined as:
 - a measure of the rate at which a person’s body burns calories while at rest
 - a person’s metabolic rate before going on a diet
 - the best calorie-burning rate that a person can achieve
 - all of the above
- The number of calories a person burns in a day is affected by:
 - how much that person exercises
 - the amount of fat and muscle in his or her body
 - the person’s basal metabolic rate
 - all of the above
- Experts recommend that adults get more than _____ minutes of moderate to vigorous physical activity each day.
 - 20
 - 30
 - 45
 - 60
- Energy bars and drinks:
 - contain excessive sugar and calories
 - are sometimes full of caffeine
 - may sometimes contain herbal supplements
 - all of the above
- True or False: A person with a low BMR (who burns fewer calories while at rest or sleeping) will tend to gain more pounds of body fat over time, compared with a similar-sized person with an average BMR who eats the same amount of food and gets the same amount of exercise. T F
- True or False: People cannot change their BMR. T F
- True or False: Athletes often need more calories than their peers—possibly 2,000 to 5,000 calories per day. T F
- True or False: Athletes should load up on carbs for energy right before a game. T F



Answer Key

1. “Metabolism” means:
 - a. chemical reactions in the body’s cells
 - b. consumption of calories
 - c. converting food into the energy for action
 - d. eating enough food to power the body’s activities
 - e. a and c
 - f. b and d
2. A calorie is a unit of:
 - a. volume
 - b. temperature
 - c. energy
 - d. mass
3. The basal metabolic rate (BMR) is defined as:
 - a. a measure of the rate at which a person’s body burns calories while at rest
 - b. a person’s metabolic rate before going on a diet
 - c. the best calorie-burning rate that a person can achieve
 - d. all of the above
4. The number of calories a person burns in a day is affected by:
 - a. how much that person exercises
 - b. the amount of fat and muscle in his or her body
 - c. the person’s basal metabolic rate
 - d. all of the above
5. Experts recommend that adults get more than _____ minutes of moderate to vigorous physical activity each day.
 - a. 20
 - b. 30
 - c. 45
 - d. 60
6. Energy bars and drinks:
 - a. contain excessive sugar and calories
 - b. are sometimes full of caffeine
 - c. may sometimes contain herbal supplements
 - d. all of the above
7. True or False: A person with a low BMR (who burns fewer calories while at rest or sleeping) will tend to gain more pounds of body fat over time, compared with a similar-sized person with an average BMR who eats the same amount of food and gets the same amount of exercise. T F
8. True or False: People cannot change their BMR. T F
9. True or False: Athletes often need more calories than their peers—possibly 2,000 to 5,000 calories per day. T F
10. True or False: Athletes should load up on carbs for energy right before a game. T F