Summary
Students will learn about the heart and its beating rate. By measuring their heart rate before and after exercising they will explore healthy behaviors for the heart!

Time
30 min.

National Standards
This activity fulfills National Science Education Standards, National Health Education Standards and National Standards for Physical Education.

Full educational standards available at
www.sepa.duq.edu/education
Outdoor Activity

How Important is a Heart Rate, You Ask?

Your body needs physical activity and exercise to stay in shape and healthy. So does your heart! To keep the heart healthy, physical activity is a must! The heart needs exercise to keep its muscles strong. If the heart is healthy it is easily able to pump blood throughout the body. A strong heart is a healthy heart, and hearts become strong by eating right and getting plenty of exercise. A healthy heart is at a much lower risk for heart diseases. According to the American Heart Association, children age 2 and older should participate in at least 30 minutes of enjoyable, moderate-intensity physical activities every day that are developmentally appropriate and varied.

Children ages 6-15, should have a resting heart rate of around 70-100 beats per minute (bpm). A good exercise should put a child’s heart rate at 120 bpm. Recovery time (how long it takes a child at rest to recover to their starting heart rate) is an important measure. The shorter the recovery time, the healthier the child is! It should be between 2-10 minutes.

What Will Your Students Be Doing?

Working in pairs, your students will be timing and recording their heart rates before and after physical activity to compare the change in heart rates that occur. To increase their heart rates, they will participate in several jump rope or jumping jack exercises.

Instructions

1. Students will gather all materials.

2. Help students locate their pulse in either their wrist or their neck.

3. Calculating the resting heart rate:
   The heart rate is measured in heart beats per minute. So, explain that in order to calculate their heart rates, they will have to count the number of beats they feel in 15 seconds and multiply that number by 4. This will give them their heart rate in beats per minute. (Note: Make sure students understand that they multiply the number they count in 15 seconds by 4.)
4. Students will then participate in the following physical activity section of the lesson. They will choose to complete either jump rope or jumping jack exercises to raise their heart rates:
   a. Beginner: Single Bounce Warm-up, Double Bounce, Skier
   b. Intermediate: Front Kicks, Double Under
   c. Advanced: Front Cross
   (See more at: http://library.thinkquest.org/5407/skills.html)

5. After completing the physical activities, students will check their pulse again and calculate their heart rate, comparing the before and after heart beats per minute.

6. Discuss why hearts need exercise (keeps the muscles strong and allows the heart to pump blood to the body).

Reflection
Students in their groups should discuss the following questions and record their answers on a sheet of paper.

◊ What caused your heart rate to increase during this activity?
◊ What changes were happening inside your heart as your resting heart rate increased?
◊ Looking at your results, are there differences in boys heart rates compared to girls? Why?
◊ Besides exercise, can you think of any other times when your heart rate increases?
◊ What new things did you discover?
◊ What do you think/how do you feel about the heart now?

Follow-Up
Encourage your students to get creative and invent a new type of jump rope trick! Students may write directions to describe to classmates how they can perform the new trick, type the directions, decorate their page, and compile a book of new jump rope tricks with their classmate. Make sure all students get copies!