

## Lesson Plan

# Effects of Exercise on Heartbeat Rate

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## Assignment

Grade 5, Unit 1, Lesson 2

## Introduction

In our last class, we discussed the effects of exercise on our bodies. Today, we will be learning about the effects of exercise on our heartbeat rate. Your heart rate or heartbeat rate is the number of times your heart beats each minute. Your heart rate will increase when you are physically active.

## Video

[BrainPOP - Heart](#)

Transcript [Relevant Selection]

TIM: The process of pumping blood is one that your body does automatically over and over again, no matter what you're doing.

*Animations show a kid performing various activities of his daily life, such as riding a bicycle.*

MOBY: Beep.

TIM: Right. Lana asked about feeling her heart beat during sports. Your heart rate increases when you run and play, and even when you're nervous. Think about it; when your body is working hard the muscles tire out quicker. Your heart has to beat faster to get oxygen through your body so that you can keep going. The faster and harder your heart is beating, the louder it sounds.

*Animations show various situations that cause people's heart rate to increase: playing sports, sensing danger, and feeling nervous while taking a test.*

## Review

- During exercise, your muscles require increased oxygen to produce more energy.
- Your heart beats faster to transport more oxygen to your muscles. Oxygen is diffused in your blood.
- An adult's heart rate is around 70 beats per minute while a child's heart rate is around 100 to 120 beats per minute.

## Reinforcement Exercises

### Short Answer Questions

1. Joshua is 24 years old. What is his heart rate likely to be?
2. How is oxygen transported to your muscles during exercise?
3. In which two ways can your heart meet your body's increased need for oxygen during exercise?
4. State the location of two of your pulse points.
5. How can you strengthen your heart?

## Further Reading

Your heart is a pump which pumps blood out around your body through your arteries. This pumping occurs at a steady rate - your heart rate. You can feel the blood pumping where the arteries are close to your skin. These are your pulse points, and if you feel gently with your fingertips, you can count how fast your heart is beating. You can find your pulse in several places. Two of the easiest places to find it are in your neck and in your wrist. Try to locate your pulse points and feel for a heartbeat! (A single heartbeat may also be referred to as a pulse.)



Feeling for a pulse - the location of your pulse points

Air has oxygen in it. When you breathe and expand your lungs, the oxygen goes into your lungs. After that, it makes its way into your bloodstream where your heart then pumps it to every part of your body. When you begin to exercise, your muscles need more oxygen, so you start to

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breathe faster and your heart rate increases to meet the demand for oxygen required by your muscles. The more oxygen your body gets the more energy you will have. Simply put, heart rate increases with exercise so that more of the oxygen carried in the blood can reach the muscles.

Like any muscle, the more you exercise, the stronger your heart will be. A trained athlete's heart can pump more blood with each beat so his or her heart rate is slower. Also, the fitter you are, the quicker your heart rate returns to normal after exercise. There are two ways the heart can meet the body's need for oxygen during exercise. It can beat faster or it can beat harder, moving more blood per pump. But it can only beat harder if it has been strengthened through regular exercise.

Heart rate varies with age. An adult's heart rate is around 70 beats per minute. In children, the heart beats about 100 to 120 times a minute.

**Fun Fact:** A mouse's heart rate is about 500 beats per minute, and an elephant's 25!

## Scratch Challenge

Create an animation that explains the effects of exercise on your heartbeat rate. Select a character, and animate your character performing various activities - for example, running, walking, and sleeping. Use appropriate scenes (*backdrops*) for each activity. During each activity, your character should state (*say*) the activity they are doing.

## Resources

[Changing backdrops in Scratch](#)