Lesson 5: Get the Beat
Welcome to Project Healthy Schools (PHS)!

• Welcome! Who can tell me what we learned during our last PHS lesson?
  • Answer: Sugary food and beverages do not provide beneficial nutrients; how to use a nutrition label to identify ingredients and sources of added sugar; ways to reduce the amount of sugar we eat and drink; how to make a healthy soda.

• Let’s get refreshed and our hearts pumping with a 30 second brain break!

• Everyone have a seat and let’s get started!
All About the Heart

• Does anyone know what type of tissue is your heart made of?
  • Muscle tissue

• Your heart is about the size of your fist & located to the left of the middle of your chest.

• What does the heart muscle help us do?
  • Pumps blood
  • Is the center of body’s transit system
  • Refreshes cells with oxygen and energy
  • Takes away waste and carbon dioxide
Let’s do some math...

The heart generally beats 60 to 100 times per minute, but can go much faster when it needs to. How would we figure out how many times our heart beats in a single day?

Answer/Example: If there are 60 minutes in one hour and 24 hours in one day, we know that there are 1440 minutes in a day. Since we know that for every minute the heart beats 60 times, we can calculate $60 \times 1440 = 86,400$. SO our heart beats between 86,400 and 144,000 times per day.
All About the Heart

• How can you take care of your heart?
  • Your heart isn’t a typical muscle like your arm where you can lift weights to make them work and get stronger. We must make it work in order to strengthen it.
  • Activities that make us breathe hard and our heart beat fast for 10 minutes or more challenges our heart and makes it stronger.

• Examples include:
  • Running, swimming, dancing, and basketball

• Because physical activity is so important for our heart, we are going to do several different physical activities in an experiment to find out how they change our heart rate.
All About the Heart

• But first, let’s define physical activity.

• **Physical activity**: movement of the body that increases energy expenditure. Significant health benefits can be obtained by including 60 minutes of physical activity every day.
All About the Heart

• What are the significant health benefits that you get from being physically active?

• Benefits: reduces blood pressure, reduces risk of heart disease, increases energy levels, better sleep habits, better food digestion, decreases stress/anxiety/depression, improves brain functioning, improves mood and attitude, improves concentration, increases self-esteem, and improves athletic ability.

• What are some of your favorite ways to be physically active?
Heart Rate Calculator

• What is a **heart rate** or **pulse**?
  • **Heart rate** or **Pulse** is a measure of how many beats per minute our heart pumps to meet the oxygen and energy demands of the body.

• What is a **hypothesis**?
  • An educated guess about what you think will happen, based on your observations.

• Before we begin our experiment, let’s first make a class hypothesis as a whole as to what activity will cause your heart rate to go up the most.
  • Sitting in front of a screen
  • Walking
  • Jumping Jacks
  • High knees

Teacher note: circle the activity the majority of the class chooses on the ‘Get the Beat’ chart
Heart Rate Calculator

• Now that we have a hypothesis, we can begin an experiment to see if our hypothesis is correct!

• Write on your sticky note:

- Sitting in front of a screen:
- Walking:
- Jumping jacks:
- High knees:
Heart Rate Calculator

- Measuring our pulse rate:
  - Turn your left hand so that the palm faces up.
  - Now with your right hand, use your middle and index finger to trace a line from the base of the thumb on your left hand, up toward your arm.
  - Stay along the outer part of your wrist.
  - When your fingers have just passed over your wrist bones, press down gently until you feel your heart beat, the pulse.
Heart Rate Calculator

• We are going to measure our heart rate after each activity.

• Each activity will be timed for 1 MINUTE.

• When you hear “GO” start the activity.

• When you hear “STOP,” you need to stop the activity right away and find your pulse.

• When you hear “GO,” again, start counting the beats for 1 MINUTE.

• Write down your heart rate on your sticky note next to the activity.
Heart Rate Calculator

• We will start by taking our heart rate for sitting in front of a screen. We will just sit at our desks for this, but imagine you are in front of a screen watching TV or a movie at home, or playing on the computer and we will find out what your heart rate does.

• This is your resting heart rate
  • **Resting heart rate**: rate at which your heart beats when you are inactive, such as when you are sleeping or engaged in screen time.
Heart Rate Calculator

• Now you are going to stand up and walk for 1 minute. Remember, after 1 minute you will stop and measure your heart rate again for 1 minute.
  • Before we get up, let’s make sure the floor is clear of any items that will get in our way and that your shoes are tied.
Heart Rate Calculator

- Now you are going to do jumping jacks for 1 minute!
Heart Rate Calculator

• Now you are going to do high knees for 1 minute!
Heart Rate Calculator

- Now we’ve completed our experiment and it’s time to share.
- Using the *Get the Beat* chart we are going to plot some of your results.
  - Can 5 volunteers share their heart rate when they were sitting in front of a screen?
  - Can 5 volunteers share their heart rate when they were walking?
  - Can 5 volunteers share their heart rate when they were doing jumping jacks?
  - Can 5 volunteers share their heart rate when they were doing high knees?
Heart Rate Calculator

• Which activity made your heart rate change the most?

• Was the class hypothesis correct?

• What conclusions can you draw from your chart?
  • The more intense the activity is, the more the heart rate increases.

• Why does your heart have to beat harder when you are doing more activity?
  • Your body is doing more activity and therefore needs more oxygen. Your heart must pump faster to deliver it.
Importance of Physical Activity

• Getting exercise is important for our health in many ways. What is the name for exercise that makes us out of breath?
  • Aerobic exercise

• Is there a clue in the word “aerobic” that can help us figure out what it means?
  • “Aero”
    • This means air so aerobic exercise requires air. Of course all exercise requires that we breath, but activities such as weight training and stretching do not work our heart as much as aerobic activities.

• Aerobic Exercise: any activity that keeps your body in motion for an extended period of time (10 minutes or more) and causes your heart and lungs to circulate blood and oxygen more quickly. (soccer, jump roping, biking, basketball, and running)
Importance of Physical Activity

• What would happen to your resting heart rate if you increased the amount of aerobic exercise you did regularly?
  • Your resting heart rate would decrease
  • Your heart muscle gets stronger and more efficient so it pumps less often but pushes the same amount of blood
  • Your heart rate returns to its normal resting rate faster.
Fat and Muscle Models

Which weighs more?

5 lbs. of muscle

VS

5 lbs. of fat
Fat and Muscle Models

• It’s a trick question. 5 pounds of fat and 5 pounds of muscle weigh 5 pounds each.

• When you become more fit, you strengthen your heart muscle and build more muscle on your body. We say your lean body mass increases. Often, the amount of body fat decreases.

• Notice the difference in these two models. The muscle is dense and tightly bound so it occupies less space than fat. The muscle takes up less space than the fat but they both weigh 5 pounds.
Closure

• What is something you learned today that you will take home and share with others?
  • Example: The heart is a muscle that we can make stronger through exercise to keep us healthy; heart rate measures how fast our heart beats; the faster our heart beats the stronger we make our heart; get 60 minutes of activity per day; heart rate is a measurement of aerobic activity.

• Which PHS goal(s) relates to what we learned today?
  • Example: “Be active every day” or “Spend less time in front of a screen”

• Try to work on this goal(s) between now and the next lesson, where we will make a delicious rainbow salad.