

GROW YOUR PALS PROGRAM GUIDE



THE NATIONAL FFA MENTORING PROGRAM

Sponsored by



LESSON 3.15

And The Beat Goes On!

Unit:
EXERCISE

PRECEPTS

G Physical Growth

G3. Participate in a fitness program

NATIONAL STANDARDS

CS.02.01.02.a. Describe the benefits, risks and opportunities associated with being physically fit.

NL-ENG.K-12.4 – Communication Skills

NL-ENG.K-12.12 – Applying Language Skills

NM-NUM.PK-2.3 – Compute Fluently and Make Reasonable Estimates

NS.K-4.6 – Science in Personal and Social Perspectives



Lesson Type:
One-on-One

STUDENT LEARNING OBJECTIVES

As a result of this lesson, the student will ...

- Describe the function of a basic stethoscope.
- Calculate heart rate.





TIME

Instruction time for this lesson: **20 minutes.**



RESOURCES

The Franklin Institute (2010). Retrieved February 8, 2010, from Pro Teacher Community website. <http://www.proteacher.com/cgi-bin/outside/site.cgi?id=5344&external=http://sln.fi.edu/biosci/activity/bio-2.html&original=http://www.proteacher.com/110074.shtml&title=Heartbeat>



TOOLS, EQUIPMENT AND SUPPLIES

- ✓ Minute timer
- ✓ Two small plastic kitchen funnels
- ✓ 18-inch piece of 5/8" diameter tubing, large enough to fit snugly over the funnel spout
- ✓ PALS3.15.ONE.AS.A
- ✓ Pencil or other writing instrument
- ✓ PALS3.15.ONE.ASSESS.A - one per student

KEY TERMS



The following term is presented in this lesson and appears in ***bold italics***:

Stethoscope

Heart rate



CONTENT OUTLINE

Objective 1. | Describe the function of a basic *stethoscope*.

- I. Make a ***stethoscope***
 - A. Materials
 - 1. Two small plastic kitchen funnels
 - 2. 18-inch piece of 5/8" diameter tubing
- II. Model use of ***stethoscope***
 - A. Count heart beats for 10 seconds

Objective 2. | Calculate *heart rate*.

- I. ***Heart rate*** = 10-second count of heart beats x 6

INTEREST APPROACH

*You will be helping your PALS build a model of a **stethoscope** today and then help them calculate their **heart rate** using the number of heart beats they counted using the **stethoscope**. Be sure to gather all necessary materials before class. For the interest approach, you will be challenging your PALS to follow your instructions and critically think about what they are modeling that would represent a part of their body, in this case the heart.*



Today we will begin by laying one of our hands (palm side up) on our desk.

Model the movements as your PALS follows your lead.



Good, now count how many times you can open and close your hand for one minute.

Be sure to start a timer and encourage your PALS to be consistent and steady with continual opening and closing of the hand. Your PALS hand should start getting tired after about 45 seconds. Encourage him/her to continue for the entire minute. Your PALS might start to wonder what they are doing... just continue to encourage them to finish.



Wow, that was hard work! What was your hand doing? What part of the body might your hand represent?

Allow your PALS to respond “opening and closing” to the first question and “the heart” for the second question.



Absolutely right and today we are going to create a model of a **stethoscope** that doctors use to listen to our hard-working and continually beating hearts. Then we will calculate our own **heart rate**! This will be important knowledge for us to learn as we work to grow up healthy and strong. Also, knowing how to calculate our **heart rate** is a skill we need in order to participate effectively in a fitness program.

SUMMARY OF CONTENT AND TEACHING STRATEGIES

OBJECTIVE 1. | Describe the function of a basic *stethoscope*.



I. Make a *stethoscope*

A. Materials

1. Two small plastic kitchen funnels
2. 18-inch piece of 5/8" diameter tubing



Do you remember some times when you have seen *stethoscopes* used? What was the doctor listening for?

*Allow your PALS to tell you what they remember about seeing **stethoscopes** used and why it was being used (to hear the heart). Possibly share your own story about a **stethoscope** being used on your heart.*



Well, let's make our own *stethoscope* and see what we can hear!

Guide your PALS to insert the spout of each funnel into opposite sides of the tubing. Have your PALS place one funnel over their chest and the other end to their ears.

II. Model use of *stethoscope*

A. Count heart beats for 10 seconds



What do you hear?

Allow your PALS to tell you he/she hears his/her heart.



All right, now we have to count the heart beats for 10 seconds. I will use the timer and tell you when to start counting and when to stop. Get ready, count.

Time for 10 seconds.



Stop. How many beats did you count?



Present PALS3.15.ONE.AS.A. Have your PAL write down the number of beats he/she counted.

OBJECTIVE 2. | Calculate *heart rate*.



I. **Heart rate** = 10-second count of heart beats x 6

To determine the **heart rate** we must multiply that number by 6.

Help your PAL to complete this step and check his/her computation to determine their heart rate.



Excellent calculating! What a great day. We have not only built our own **stethoscope** and listened to our hearts; we have also learned how to calculate our own **heart rates**. Being able to calculate heart rate is an important tool used in fitness and exercise programs. The skill you have built today will be beneficial to your future and healthy lifestyle. How about a high five?



High five your PAL and praise him/her for the work they have done today.



REVIEW / SUMMARY

*Use the Eye Witness News Moment® to interview your PALS about calculating **heart rate** and the use of a **stethoscope** in this process.*



Today you have become an expert on calculating **heart rate**. I am going to be a news reporter and will interview you, the heart expert, on the process of using a **stethoscope** and calculating **heart rate**.

As the reporter, ask questions related to today's information.

APPLICATION



Large Group Idea

Study more about the heart, creating diagrams that show the path of blood through the heart and lungs to the body.

Continued Discussion

Tell your PALS to ask their parents to let them listen to their heartbeats. Ask them to notice any differences and suggest a reason why their hearts would beat differently.



PALS3.15.ONE.ASSESS.A | ANSWERS TO EVALUATION

1. Listen to the heart
2. Heart beat count for 10 seconds multiplied by 6 = heart rate

PALS3.15.ONE.AS.A

Heart beat count _____ $\times 6 =$ _____
Heart Rate



PALS3.15.ONE.ASSESS.A

1. What is the stethoscope used for?
2. Write the formula for calculating heart rate.