

**Please note:** Activities are member submitted and not approved prior to uploading by SHAPE America staff.

<b>Activity Title</b>	
<b>The Beat of my "Heart"</b>	
<b>Submitted by</b>	<u>Moira Brookshire</u>
<b>National Standards(s)</b>	<p>Physical Education:</p> <p><b>Standard #3</b> The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.</p> <p>Health Education:</p> <p><b>Standard #1</b> Students will comprehend concepts related to health promotion and disease prevention.</p> <p><b>5. NBT:5</b> Perform operations with multi-digit whole numbers and with decimals to hundredths.</p>
<b>Grade Level Outcome(s) or Performance Indicator(s)</b>	<p>PE: S3.E2.5 Actively engages in in all the activities of physical education.</p> <p>Health: 1.5.4 Describe ways to prevent common childhood injuries and health problems.</p>
<b>Activity Objective</b>	<ul style="list-style-type: none"> <li>• Students will be able to locate and measure their pulse during periods of rest and exercise.</li> <li>• Students will be able to demonstrate the physiological changes that occur during aerobic exercise as well as the harmful effects of smoking upon the heart.</li> <li>• Students will be able to demonstrate the skill of multiplying by calculating the heart rate (20 seconds x number of beats).</li> </ul>
<b>Grade(s)</b>	5th Grade
<b>Materials</b>	Pencils and Worksheet
<b>Prior Knowledge</b>	Fifth graders are familiar with the concept of aerobic exercise as a component of their year-long fitness assessments. Fifth graders have previously learned about the circulatory and respiratory systems in class, culminating in a game played in the gym in which students on scooters are red blood cells who travel through the two systems, delivering oxygen and carbon dioxide. All my students, K-5 have frequent

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	discussions during PE classes about the basic physiology that occurs during aerobic exercise.
<b>Vocabulary</b>	<p><b>Pulse:</b> The rhythmical throbbing of arteries produced by regular contractions of the heart, measured at the wrist (Radial Artery) or the neck (Carotid Artery).</p> <p><b>Aerobic Exercise:</b> Aerobic means “in the presence of oxygen”. Aerobic exercise is activity for which the body is able to supply enough oxygen to allow performance for a <i>long period</i> of time (walk, jog, bike, swim).</p> <p><b>Anaerobic Exercise:</b> Anaerobic means “in the absence of oxygen”. Anaerobic exercise is performed <i>at an intensity so great</i> that the body’s demand for oxygen exceeds its ability to supply it (sprinting, strength training, football).</p> <p><b>BPM (beats per minute):</b> How many times the heart beats in one minute.</p> <p><b>Resting Heart Rate (RHR):</b> A measure of heart rate taken following inactivity.</p> <p><b>Exercise Heart Rate (EHR):</b> A measure of heart rate taken during exercise.</p> <p><b>Nicotine:</b> A drug found in tobacco products (cigarettes, etc.) that speeds up the heart and causes addiction.</p>
<b>Safety Considerations</b>	Remind students of personal space and tagging guidelines during Stuck-In-The-Mud.
<b>Activity Description</b>	
<p><b>Introductory Activities:</b> Every student is given a pencil and worksheet. Students are instructed to locate their pulse at the radial or carotid artery then determine their RHR (count pulse for 20 seconds then multiply by 3 to determine BPM) on their worksheet. Teacher then gives directions for highly aerobic activity called Stuck-In-The-Mud (or another high intensity activity). Two times during the game, have students stop immediately to measure their HER (same method as for RHR) and write results. At the conclusion of this activity students cool down by walking around the gym for five minutes, then sit and write their results of RHR for the second time.</p> <p>How to Play Stuck in the Mud: Two students are 'it' and have to chase the students that are not 'it' and tag them.</p>	

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When a student is tagged that person is “stuck in the mud” and cannot move. While “stuck in the mud” students will stand with their legs and arms out. The only way to get “unstuck” is if another student who is not stuck goes under the stuck student to free them. They can go through the person's legs. To make it less difficult students can go under a stuck student's arms.

During the introductory activities, I repeatedly ask students what happens to their breathing rate when their hearts are beating faster (increased pulse rate)? We discuss and write ideas on the dry erase board as to why our breathing and pulse rates speed up simultaneously during aerobic exercise, to determine that our blood carries oxygen to our muscles and organs that require extra energy during exercise. We also emphasize how aerobic exercise, along with a healthy diet and avoiding smoking, is an ideal way to strengthen our hearts.

At the end of the activity students will regroup and discuss.

1.) Review definitions.

2.) What is your Resting Heart Rate? Silently count your pulse for 20 seconds, then multiply that number x 3 to determine BPM.

RHR = \_\_\_\_\_

3.) Explain rules of Stuck-In-The-Mud. Play this highly aerobic/anaerobic activity. At regular intervals, teacher will ask you to stop and count your pulse for 20 seconds, then multiply x 3 to determine BPM for Exercise Heart Rate.

a.) EHR #1 \_\_\_\_\_

b.) EHR #2 \_\_\_\_\_

c.) EHR #3 \_\_\_\_\_

4.) Why does your breathing get heavier and faster at the same time when your pulse increases during aerobic and anaerobic exercise? \_\_\_\_\_

5.) Both, both nicotine and aerobic exercise increase one's pulse (heart rate). *How does nicotine weaken the heart?* **Multiple choice – circle the best answer.**

a.) Nicotine causes addiction.

b.) Blood vessels get narrower which makes the heart work harder.

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c.) The lungs of a smoker become lined with tar, which can cause lung cancer.

d.) Four out of five dentists recommend Nicotine.

6.) What are the three most important ways to keep a healthy heart?

a.) \_\_\_\_\_

b.) \_\_\_\_\_

c.) \_\_\_\_\_

#### **Modifications**

***Include ways to modify this activity for advanced, lower level and inclusion students.***

Students with cognitive disabilities can work with a partner to help with locating and measuring a pulse. Students with physical disabilities can use alternate means to elevate heart rate.

#### **Resources and Tools:**

National Standards for Physical Education: <http://www.shapeamerica.org/standards/pe/>

National Standards for Health Education: <http://www.shapeamerica.org/standards/health/>

Coordinated School Health: <http://www.cdc.gov/HealthyYouth/cshp/>