

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

Name of Activity	
Heart Rate and Nicotine Education Worksheet	
<b>Submitted by</b>	Dave Isenberg
<b>National Standard(s)</b>	PE: Standard 2 The physically literate individual applies knowledge of concepts, principles, strategies, and tactics related to movement and performance.  Health Ed: Standard 1 Students will comprehend concepts related to health promotion and disease prevention.
<b>Grade Level Outcome or Performance Indicator</b>	Grade-Level Outcomes (PE): Actively engages in the activities of physical education class, both teacher-directed and independent. (S3.E2.4) Actively engages in all the activities of physical education. (S3.E2.5) Performance Indicator (Health Ed): 1.5.1 Describe the relationship between health behaviors and personal health.
<b>Activity Objective</b>	<ul style="list-style-type: none"> <li>• Psychomotor: Students will be able to locate and measure their pulse during periods of rest and exercise.</li> <li>• Cognitive: 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>• Affective: Students will be able to exhibit responsible personal and social behavior.</li> </ul>
<b>Grade(s)</b>	4 & 5
<b>Materials</b>	Pencils, Worksheet
Activity Description	
<p>Use this worksheet as a complement to an existing lesson or as a homework assignment to help students understand their heart rate and how smoking and introducing nicotine in the human body requires the heart to work harder.</p> <p><b>Heart Rate and Nicotine Education</b> Name _____</p> <p><u>Definitions</u>  <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).  <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).  <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).  <b>BPM (beats per minute):</b> How many times the heart beats in one minute.</p>	

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**Resting Heart Rate (RHR):** A measure of heart rate taken following inactivity.

**Exercise Heart Rate (EHR):** A measure of heart rate taken during exercise.

**Nicotine:** A drug found in tobacco products (cigarettes, etc.) that speeds up the heart and causes addiction.  
Schedule

1.) Read Definitions.

2.) What is your Resting Heart Rate? Silently count your pulse for 15 seconds, then multiply that number x 4 to determine BPM.

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

3.) **Over the Mountain** – see poster. Walk for one minute (Walk1), jog for one minute (Jog1), sprint for one minute (Sprint1), jog for one minute (Jog2), walk for one minute (Walk2). After each minute, feel your pulse without counting.

a.) During which minute did your pulse/heart rate feel the fastest?

b.) During which minute did your pulse/heart rate feel the slowest?

4.) Explain rules of **Crab Tag (or another tag game)**. Play this highly aerobic/anaerobic activity. At regular intervals, Mr. Isenberg will ask you to stop and count your pulse for 15 seconds, then multiply x 4 to determine BPM for Exercise Heart Rate.

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

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

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

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

6.) Do the top runners at the Boston Marathon (26.2 miles), who have very strong and efficient hearts, have a lower or higher EHR and RHR? \_\_\_\_\_

7.) Strangely, 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.

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

d.) Four out of five dentists recommend Nicotine.

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

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

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

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

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### **Modifications**

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

**Differentiation/Inclusion:**

Students with cognitive disabilities can work with a partner to help with locating and measuring pulse.

Students with physical disabilities can use alternate means to elevate heart rate.

Provide students with information from a health textbook by copying excerpts on the back of the worksheet.