
Part B: Classroom or Computer Lab

1. Introduce the term “Active Living” and ask students what they think it means.
2. “Active living means that you find ways to be physically active every day. Examples are taking the stairs at work or turning off the TV and going for a walk outdoors.” (Alberta Government 2009).
3. Discuss the benefits of active living on our health by referring to the following website. You can project the website onto a screen and have students take turns reading or have students read this article independently in the computer lab. <http://www.healthyalberta.com/ActiveLiving/166.htm>
4. Use the online video from the Asthma Society of Canada to illustrate the respiratory system and the affects of asthma on breathing. <http://pubmodules.machealth.ca/asthma/management/player.html>
5. a) On the website select “Asthma Myths & Facts” and then select “Breathing with Asthma.” Ensure speakers / headphones are turned on.
6. b) Show the video a second time and have students complete Part B of the worksheet: Respiratory System.
7. Initiate a class discussion about times when students’ breathing has been impaired, for example by colds, allergies, or asthma.
8. Reinforce the importance of air quality for individuals with active lifestyles and discuss how air quality might affect elite athletes who train outdoors often.
9. Introduce the Champion athlete who will be visiting your school. Ask students why they think the Champion would participate in an education program on air quality. (See Section 2.2: Booking Your Champion Visit of the Teacher Guide for further information).

Making It Real

- Organize the class into small groups and have them research diseases/illnesses that affect the respiratory system. Examples of illnesses/diseases include Chronic Obstructive Pulmonary Disorder (COPD), Emphysema, Bronchitis, Pneumonia and Cystic Fibrosis (CF). Have each group present their findings to the class in an oral, visual or interactive format.

Active Break

1. Heart Rate: Have students participate in moderate to vigorous physical activity for 7-10 minutes. This can be accomplished with an activity of your choice or by having each student lead the group through various movements such as jumping jacks, aerobics, cross field lunges, etc. The main objective is to ensure that their heart rates become elevated. Have students take their pulse immediately following the activity by placing their index and middle fingers on the pulse in their neck and counting the beats for 10 seconds. They multiply their count by six to calculate their heart rate for one minute. Have students rest for five minutes and take their pulse again to calculate their resting heart rate. Share information about target heart rates during exercise using the following website. http://www.active2010.ca/index.cfm?fa=english_tools.target
2. Refer to “Getting Active for Cleaner Air” for other active games. <http://www.cleanairchampions.ca/CAC/Ekits.aspx>

ACTIVITY #1: 20,000 BREATHS A DAY STUDENT WORKSHEET

Part A

With a partner, take turns doing each of the activities listed below. Do each activity for one full minute (e.g., jog a few laps around the gym or jog to the end of a soccer field and back).

Safety Precaution

- Make sure you do not overexert yourself — you should be able to speak while exercising.
- Breathe as normally as possible.
- Let your teacher know if you have health concerns that prevent you from participating in physical exercise.

Instructions for Counting Breaths

- Start counting immediately after completing each activity.
- Your partner will be the timer, indicating the start and stop time for a 10-second period.
- Put the palm of your hand close to your mouth.
- On “start,” count the number of breaths you feel on the palm of your hand.
- On “stop,” cease counting. Record your number of breaths and multiply it by six to calculate the number of breaths per minute.

Activity	Breaths in 10 seconds	Breaths per minute (x6)
Sitting		
Walking slowly		
Walking quickly		
Jogging		
Sprinting		

Multiply your breaths per minute during sitting by the number of minutes in one day to calculate the minimum number of breaths you take in one day.

_____ breaths per minute sitting x _____ minutes per day = _____ breaths per day



Did you know?

Adults generally take fewer breaths per minute than young people. When we are exercising, we take more breaths than when we are resting. An athlete typically breathes in 10 times more air than the average person.

Part B: Respiratory System

In your own words, explain the functions of the following parts of the respiratory system.

Trachea

Bronchi

Alveoli



Did you know?

Did you know that over 2 million Canadians have been diagnosed by a health professional as having asthma? (Statistics Canada, 2008)

ACTIVITY #1: 20,000 BREATHS A DAY

TEACHER ANSWER KEY

Part A

Multiply your breaths per minute during sitting by the number of minutes in one day to calculate the minimum number of breaths you take in one day.

(Approximately) 14 breaths per minute sitting \times $1,440$ minutes per day = $20,160$ breaths per day

Part B: Respiratory System

Explain the functions of the following parts of the respiratory system.

Trachea

The trachea is the large airway through which air flows between the mouth and nose and the bronchial tubes. It is commonly referred to as your “windpipe.”

Bronchi

The bronchi are airways which branch off from the trachea. Bronchi break into smaller and smaller tubes and end at the alveoli. During inhalation the bronchi carry oxygen from the trachea to the lungs and during exhalation the bronchi carry carbon dioxide from the lungs to the trachea.

Alveoli

Alveoli are small sacs at the ends of the bronchial tubes. The alveoli transfer the oxygen in the lungs to the blood (in the arteries) and remove carbon dioxide from the blood (in the veins).