



HEART & LUNG LESSON COMBINED

“Walk Through the Heart” & “Take a Breath”

Fifth Grade

- The MORE HEALTH website is equipped with a Classroom TEACHER section. Here you will find pre- and post-visit activities, vocabulary words, and in many cases pre-and post-visit videos.
- Visit [morehealthinc.org](https://www.morehealthinc.org) – <https://www.morehealthinc.org/teachers/>
- Password: resources

Pre-Visit Activities

- Review the enclosed Vocabulary. Students do not need to have a working knowledge of the terms, rather a beginning familiarity.
- Click the link to play videos:
How the Heart Works (6:15)
<https://kidshealth.org/en/kids/csmovie.html?WT.ac=en-k-htbw-main-page-c>
How Lungs Work (5:21)
<https://kidshealth.org/en/kids/rsmovie.html?WT.ac=en-k-htbw-main-page-c>
If time permits, both videos have activities and a quiz on the website.
- Read aloud: *Your Circulatory System* by Conrad J. Storad, *Your Respiratory System* by Judith Jango-Cohen, *Why do Bruises Change Color?* by Angela Royster.
- Create a writing activity for your students having them research the respiratory systems of different mammals, fish, reptiles, or insects. They could compare and contrast the different systems (i.e., the respiratory system of the largest and smallest mammal – bumblebee bat/great blue whale) - **And/Or** - Create a writing activity for your students having them use as many of the Vocabulary words as possible. You may want them to retrace where blood travels or what makes up their blood. Using these new words immediately after completing the video and book should make writing more accurate and interesting.

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Suggested Post-Visit Activities

- Have students complete the Walk Through the Heart crossword puzzle (answer key page 9) and the Respiratory System diagram.
- Distribute “Dear Parent” letter including the Heart Healthy Pledge to each student.
- Use the **Lung Worksheet** as an additional resource: homework, extra credit, etc. For teacher reference, an answer key is provided (page 8).
- Conduct an experiment showing how oxygen is necessary for burning to occur. Place a lighted candle in a dish and put a jar over it. The candle will go out when all the oxygen is used up. Fire needs oxygen to burn, just like our bodies use oxygen to burn its food.
- As a fun review, follow the directions above to access the following video:
Respiratory System-Brain Pop (3:16) <https://www.youtube.com/watch?v=2nDQNG9ex18>
- Students can use their lungs in this fun race. Items needed: cotton balls, straws and a flat surface. The object is to blow through the straws and push the cotton balls from the start to finish line. Winner is the one who gets the cotton ball across first.
- As homework or in groups, have students research possible snacks to determine which are the healthiest/unhealthiest snacks (for groups, assign a snack item, i.e.: chips, crackers, yogurts, cheeses, etc.).
- Have your students research different illnesses/diseases that can cause distress to the heart and/or lungs. Their report can include the illness, whether it is genetic, environmental, or self-induced due to risky behaviors, and if there is a cure or treatment to help.
- As an art project, have students paint a diagram of lungs using their lungs. Items Needed: Bowls, Tempera paints, paintbrush, straw, printout of lung outline. In bowls, mix the paints with water to achieve a runny consistency. Apply paint onto the brush and gently shake it over the printout so there are scattered drops in the lungs. Have them blow through the straw, aiming at each drop. This will cause the paint to branch out forming the bronchi and the bronchioles.
- For teacher reference, see enclosed Diagram of the Heart (page 7).

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Vocabulary

- **airways_n** tunnels for air that travel from the nose or mouth to the lung
- **allergies_n** bad reactions to certain things, such as animals, pollen, or food
- **alveoli_n** microscopic air sacs in the lungs
- **aorta_n** the largest artery in the body responsible for carrying oxygen-rich blood from the heart to all parts of the body
- **arteries_n** blood vessels that carry blood away from the heart
- **Asthma_n** a lung disease that affects the breathing tubes by narrowing them
- **atrium/atria_n** the two upper chambers of the heart that fill with the blood returning to the heart from the body and lungs
- **blood_n** a liquid that circulates oxygen and nutrients in the body and helps remove carbon dioxide from the cells
 - red blood cells** carry oxygen and remove carbon dioxide from the body
 - white blood cells** attack germs, like viruses and bacteria that make people sick
 - platelets** smallest blood cells that form clots and control bleeding by sticking to each other and the edges of an injury to form a plug
 - plasma** the liquid part of the blood that transports the red blood cells, white blood cells, and platelets; mostly water
- **blood bank_n** a place where blood and blood products are collected and stored for future use or transfusion
- **blood vessels_n** network of tubes that carry blood through the body
- **bone marrow_n** the soft blood forming tissue that fills the cavities of the bones; acts as the chemical manufacturing plant for cells of the body
- **bronchi_n** the two large airways of the lungs
- **bronchial tubes_n** the smaller breathing tubes of the lungs, that look like tiny tree branches
- **capillaries_n** the smallest blood vessels
- **carbon dioxide_n** a gas produced as a waste product in the body exhaled by the lungs
- **cells_n** tiny building blocks for all parts of the body
- **chambers_n** the four hollow spaces in the heart where the blood flows

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- **circulatory system_n** the body system comprised of the heart and blood vessels
- **diaphragm_n** a large muscle under the ribs that separates the lungs from the other organs
- **heart_n** a muscular pump which sends blood throughout the body
- **heartbeat_n** the sound of the heart valves opening and closing
- **inflamed_{adj}** sore or swollen
- **inhaler_n** something that has medicine in it to help people breathe easier
- **larynx_n** the voice box, airway between the throat and the trachea
- **lungs_n** the organ of a person that takes in air and supplies oxygen to the blood
- **mucus_n** a thick, slimy substance that is produced in the airways and nose
- **nutrition_n** the process by which an animal or plant takes in food and uses it in living and growing
- **oxygen_n** a gas that is needed by cells in the body and is taken from the air by the lungs
- **pollution_n** human-made waste that harms the earth’s air, land or water
- **pulse_n** rhythmic vibration in the arteries caused by the beat of the heart which can be felt on the skin typically at the wrist or neck
- **respiratory system_n** the body system made up of the lungs, blood vessels, airways that allow us to breathe
- **toxic_{adj}** harmful, poisonous
- **trachea_n** the windpipe, a firm breathing tube between the larynx and the bronchi
- **triggers_n** something that causes something else to happen
- **valves_n** “doors” in the heart which ensures that blood flows properly in and out of the heart
- **veins_n** blood vessels that return blood to the heart
- **vena cava_n** the two largest veins in the body (superior and inferior) bringing waste-filled blood from the body to the heart
- **ventricle_n** either of the two lower chambers of the heart that pumps blood into the arteries

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Goals

- Students will understand the structure and function of the heart and circulatory system.
- Students will understand the structure and function of the lung and respiratory system.
- Students will understand their responsibility for their healthy heart and lungs.
- Students will understand the importance of blood donation in their community.
- Students will understand the importance of monitoring pollutants and other irritants to protect their lungs.

Objectives

- Students will be able to locate the heart and identify its four chambers.
- Students will be able to name the three types of blood vessels.
- Students will be able to define pulse, pump, muscle, and valve as they relate to the heart.
- Students will be able to locate the lungs and identify the parts of the respiratory system.
- Students will be able to explain how the heart and lungs work together to provide vital oxygen and nutrients to all parts of the body.
- Students will be able to name at least four ways to keep their heart and lungs healthy (e.g., nutrition, exercise, avoid alcohol, irritants, drugs, and cigarettes).

Standards

The student will...

- HE.5.B.3.3 compile resources from home, school, and community, technologies that provide valid health information. (*suggested post-visit activity*)
- HE.5.B.5.1 describe circumstances that can help or hinder healthy decision making.
- HE.5.B.5.2 summarize healthy options to health-related issues or problems.
- HE.5.B.5.3 compare the potential short-term impact of each option on self and others when making a health-related decision.
- HE.5.B.5.4 select a healthy option when making decisions for yourself and/or others.
- HE.5.B.6.1 specify a personal health goal and track progress toward achievement.
- HE.5.C.1.1 describe the relationship between healthy behaviors and personal health.
- HE.5.C.1.3 explain ways a safe, healthy home and school environment promote personal health.
- HE.5.C.1.4 compare ways to prevent common childhood injuries and health problems.
- HE.5.C.1.5 explain how human body parts and organs work together in healthy body systems, including the endocrine and reproductive systems.

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- HE.5.C.2.2 predict how friends/peers may influence various health practices of children.
- HE.5.P.7.1 model responsible personal health behaviors.
- HE.5.P.7.2 illustrate a variety of healthy practices and behaviors to maintain or improve personal health and reduce health risks. (*suggested post-visit activity*)
- HE.5.P.8.1 persuade others to make positive health choices.
- SC.5.L.14.1 identify the organs in the human body and describe their functions, including the skin, brain, heart, lungs, stomach, liver, intestines, pancreas, muscles and skeleton, reproductive organs, kidneys, bladder, and sensory organs.
- SC.5.L.14.2 compare and contrast the function of organs and other physical structures of plants and animals, including humans. (*pre-visit activity*)
- LAFS.5.L.1.2 demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. (*pre/post-visit activities*)
- LAFS.5.L.2.3 use knowledge of language and its conventions when writing, speaking, reading, or listening.
- LAFS.5.W.1.2 write informative/explanatory texts to examine a topic and convey ideas and information clearly. (*pre/post-visit activities*)
- LAFS.5.W.3.7 conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (*pre/post-visit activities*)
- ELA.5.C.1.4 write expository texts about a topic using multiple sources and including an organizational structure, relevant elaboration, and varied transitions. (*pre/post-visit activities*)
- ELA.5.C.4.1 conduct research to answer a question, organizing information about the topic and using multiple reliable and valid sources. (*pre/post-visit activities*)
- ELA.5.V.1.1 use grade-level academic vocabulary appropriately in speaking and writing.
- PE.5.L.3.1 identify a moderate physical activity.
- PE.5.L.3.2 identify a vigorous physical activity.
- PE.5.L.3.3 identify opportunities for involvement in physical activities during the school day.
- PE.5.L.3.4 identify opportunities for involvement in physical activities after the school day.
- PE.5.L.3.5 formulate a plan to increase the amount of time spent in physical activity.
- PE.5.L.3.6 discuss lifestyle behaviors that can be made to increase physical activity.
- PE.5.L.4.2 identify activities that develop and maintain each component of physical fitness.
- PE.5.L.4.3 identify that an increase in heart rate intensity is necessary to enhance cardiorespiratory endurance.
- PE.5.R.6.2 explain the benefits of physical activity

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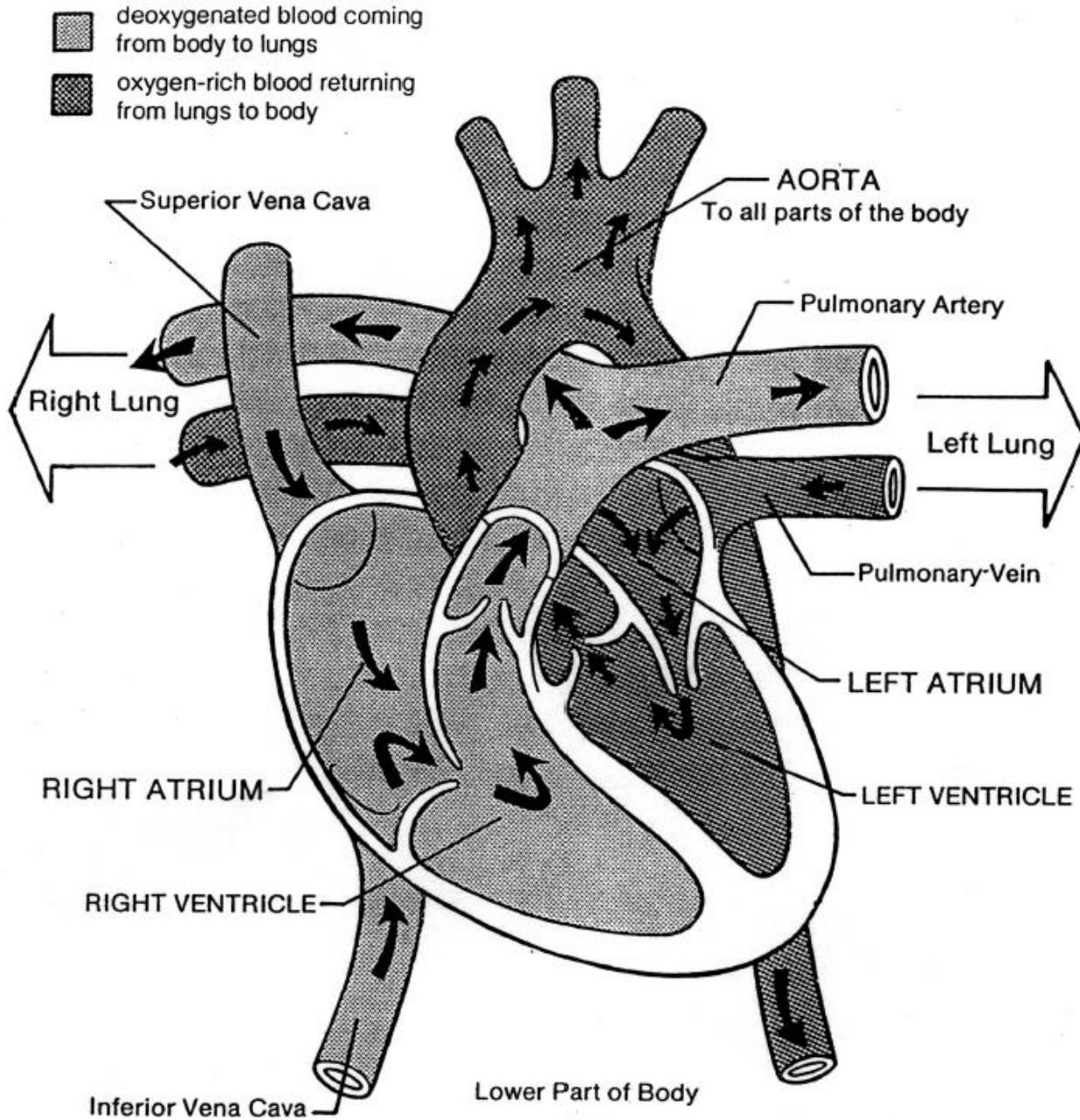
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Lung Worksheet Answer Key

- Our Respiratory system is made up of organs and tissues that keep us breathing. This system is made up of our Lungs, Blood vessels, Airways, and Muscles.
- Healthy lungs are Pink and squishy like a sponge and Stretchy or rubbery like a balloon.
- Our lungs are divided into sections called Lobes.
- The Left lung is smaller to allow extra room for the Heart.
- The primary job of our respiratory system is to breathe in fresh air or Oxygen and get rid of stale air or Carbon Dioxide.
- The process of breathing happens approximately 20,000 times a day!
- The airways are your Nose, mouth, Larynx (voice box), Trachea (windpipe) and the Bronchus tubes.
- Cilia move back and forth like a broom to keep fluids or dust out of your lungs.
- The Diaphragm is a dome shaped muscle located below your lungs.
- Things that can hurt our lungs and cause breathing difficulties include:

<u>Smoking</u>	<u>Vaping</u>
<u>Pollution</u>	<u>Infection</u>
<u>Allergies</u>	<u>Asthma</u>
- Things you can choose to do to help keep your lungs healthy:

<u>Wash Hands</u>	<u>Don't Smoke</u>
<u>Exercise</u>	<u>Avoid Allergens</u>

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