Air's Path

Locate respiratory structures and connect each to its function.

HS-AP11-1 "Identify and locate major organs of the respiratory system and discuss their functions. Differentiate between the components of the upper and lower respiratory systems."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the first mention of each part named in the upper respiratory system list once and each part named in the lower respiratory system list twice. Circle a phrase that tells what each part does.

A Breath on a Cold Run

1. During a cold morning run, you draw air through your nose. Inside it, the nasal cavity warms and moistens the air. Sticky mucus traps some dust and microbes, while tiny hairs and moving cilia help keep particles from reaching the lower airways. Air next passes through the pharynx, a shared passage behind the nose and mouth that also carries food toward the esophagus. The nose, nasal cavity, and pharynx belong to the upper respiratory system. This upper route prepares incoming air before it reaches the narrower passages below. Breathing through the mouth can bypass some of the nose's filtering.

2. From the pharynx, air moves through the larynx, often called the voice box. It contains vocal folds that vibrate to produce sound. Air then enters the trachea, whose cartilage rings help hold it open. Mucus and cilia along the trachea move trapped particles upward. The trachea splits into two bronchi, one carrying air into each lung. Within the lungs, the bronchi branch into smaller bronchioles, which distribute air to tiny air sacs. The larynx, trachea, bronchi, bronchioles, and lungs are lower respiratory structures. Together, these passages move air toward the place where gases enter and leave the blood.

3. At the ends of the bronchioles are clusters of alveoli, tiny air sacs inside the lungs. The lungs house these sacs, whose thin walls lie beside tiny blood vessels. Oxygen moves from air in the alveoli into the blood, while carbon dioxide moves from blood into the alveoli to be breathed out. Beneath the lungs, the diaphragm is a broad muscle. When it contracts and flattens, the chest cavity expands and air enters. When it relaxes, air moves out. The diaphragm drives breathing, but it is not a passage that air travels through. The alveoli are part of the lower respiratory system.

2 ANSWER WITH EVIDENCE

Use the passage

1. Name two upper respiratory structures the air reaches before the larynx. What does each do?

2. Starting at the larynx, name the lower respiratory structures air passes through to reach the alveoli. Put them in order.

3. How do the trachea and bronchi have different jobs as air moves toward the lungs?

4. Where are the alveoli and diaphragm located, and how does each help the body take in oxygen?

3 YOUR TURN

Your own words

Write a first-person account from an oxygen molecule entering through the nose and reaching the blood. In five to seven sentences, name at least two upper and four lower respiratory structures in travel order, explain one function in each system, and describe where you enter the blood.

ANSWER KEY

Air's Path

HIGH SCHOOL · HS-AP11-1

PART 1 · READ AND MARK

Underline the first mention of each part named in the upper respiratory system list once and each part named in the lower respiratory system list twice. Circle a phrase that tells what each part does. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Name two upper respiratory structures the air reaches before the larynx. What does each do?	**The nasal cavity warms and moistens air. The pharynx carries air from behind the nose or mouth toward the larynx.**
2	Starting at the larynx, name the lower respiratory structures air passes through to reach the alveoli. Put them in order.	**Larynx, trachea, bronchi, bronchioles, alveoli. The bronchi and bronchioles are within the lungs.**
3	How do the trachea and bronchi have different jobs as air moves toward the lungs?	**The trachea carries air toward the chest and splits into two bronchi. Each bronchus carries air into one lung.**
4	Where are the alveoli and diaphragm located, and how does each help the body take in oxygen?	**Alveoli are air sacs inside the lungs where oxygen enters the blood. The diaphragm is beneath the lungs; its contraction expands the chest cavity so air enters.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I enter through the nose and move into the nasal cavity, where the air around me is warmed and moistened. I pass through the pharynx and reach the larynx. Next, I travel down the trachea, which stays open with the help of cartilage rings. I move through a bronchus into a lung, then through smaller bronchioles. At an alveolus, I cross its thin wall into a nearby blood vessel. The blood can now carry me to the body's cells.

Accept equivalent descriptions of airflow and function. Students may name the lungs as a lower respiratory structure, but their accounts should place the bronchi and bronchioles within the lungs and identify the alveoli as the site where oxygen enters blood.