

36 REVIEW SHEET

EXERCISE

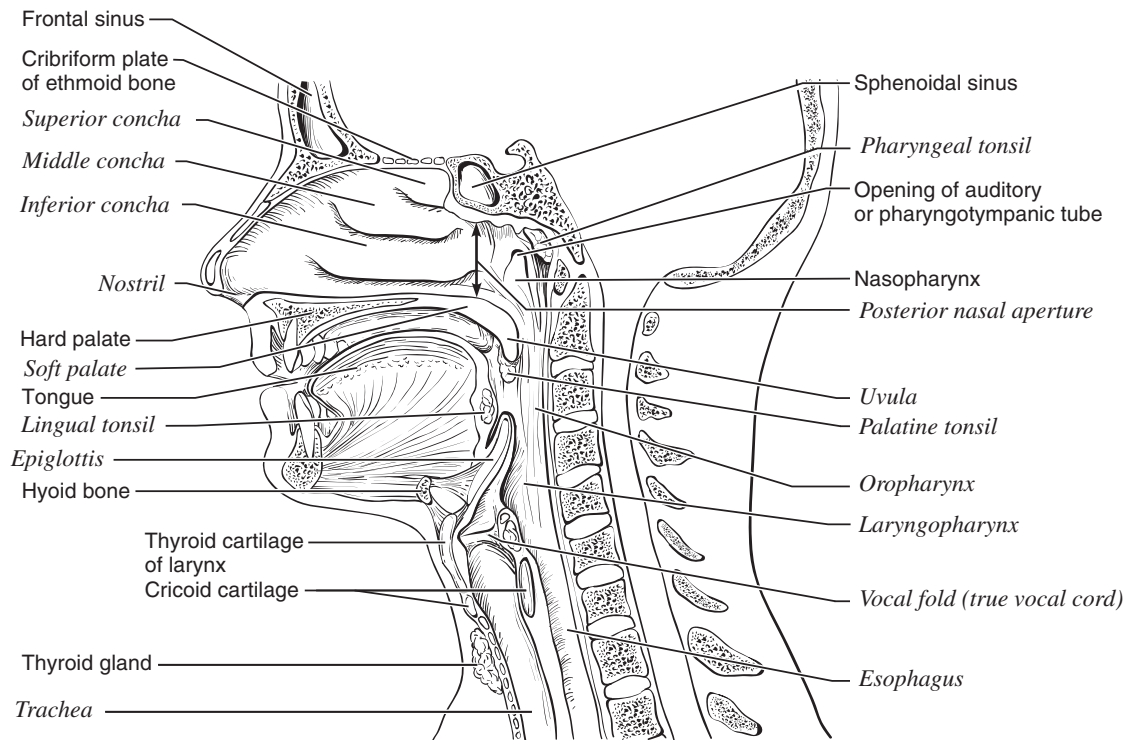
NAME _____

LAB TIME/DATE _____

Anatomy of the Respiratory System

Upper and Lower Respiratory System Structures

1. Complete the labeling of the diagram of the upper respiratory structures (sagittal section).



2. Two pairs of vocal folds are found in the larynx. Which pair are the true vocal cords (superior or inferior)?

Inferior

3. Name the specific cartilages in the larynx that correspond to the following descriptions.

forms the Adam's apple: thyroid

shaped like a signet ring: cricoid

a "lid" for the larynx: epiglottis

vocal cord attachment: arytenoid

4. What is the significance of the fact that the human trachea is reinforced with cartilaginous rings?

Prevents its collapse during pressure changes occurring during breathing.

Of the fact that the rings are incomplete posteriorly? Allows a food bolus traveling down the posterior esophagus to bulge anteriorly.

5. What is the function of the pleural membranes? Produce a serous fluid that reduces friction during breathing movements and helps to hold the lungs tightly to the thorax wall which keeps the lungs inflated.

6. Name two functions of the nasal cavity mucosa. Warms

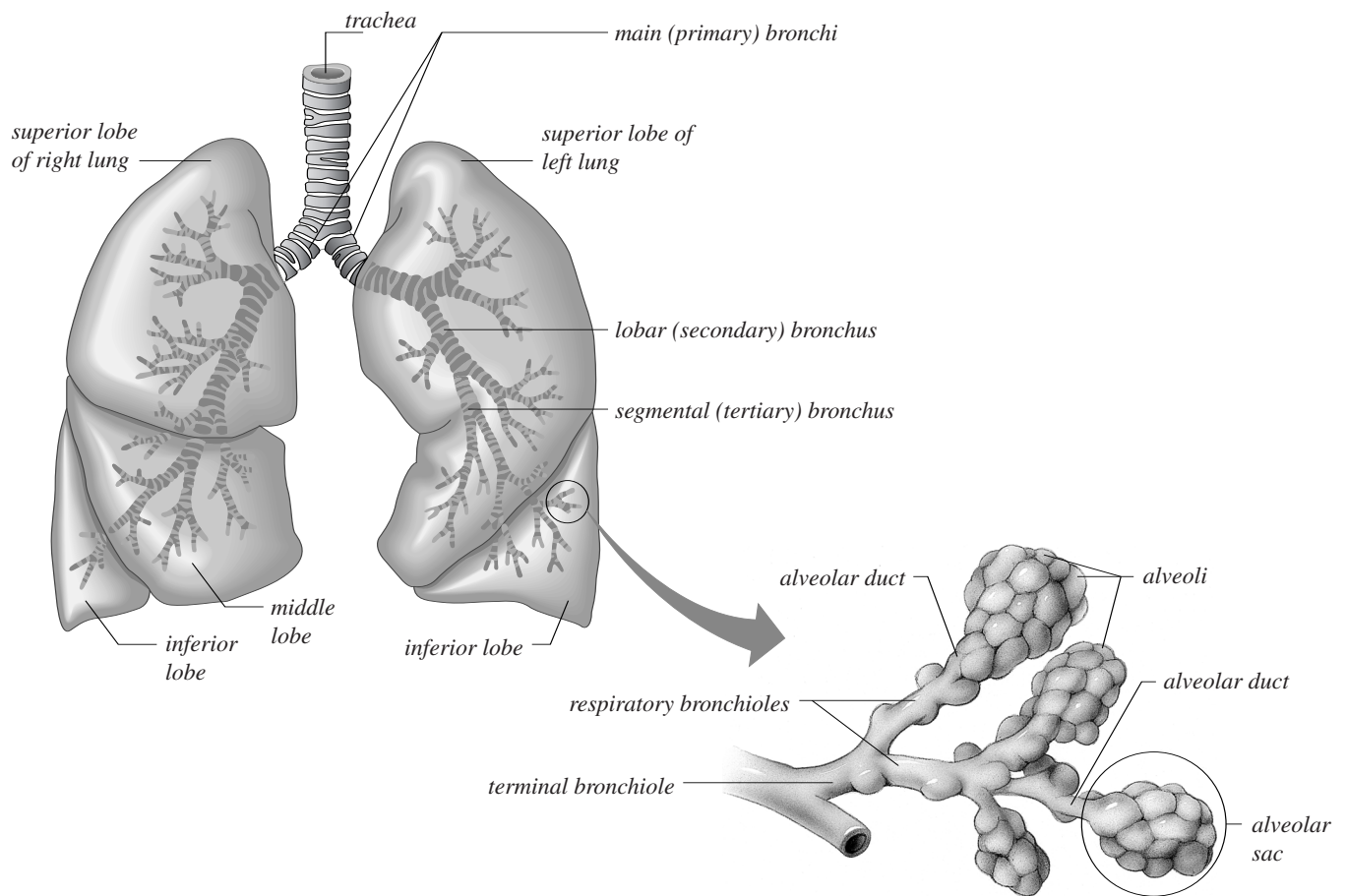
and moistens incoming air.

7. The following questions refer to the primary bronchi.

Which is longer? Left Larger in diameter? Right More horizontal? Left

Which more commonly traps a foreign object that has entered the respiratory passageways? Right

8. Appropriately label all structures provided with leader lines on the diagrams below.



9. Trace a molecule of oxygen from the nostrils to the pulmonary capillaries of the lungs: Nostrils →

nasal cavity → pharynx → larynx → trachea → primary bronchus → lobar/segmental bronchi (etc.) → bronchiole →

respiratory bronchiole → alveolar duct → alveolar sac → across alveolar/capillary walls → pulmonary blood

10. Match the terms in column B to the descriptions in column A.

Column A

- n* _____ 1. connects the larynx to the primary bronchi
- k* _____ 2. site of tonsils
- e* _____ 3. food passageway posterior to the trachea
- d* _____ 4. covers the glottis during swallowing of food
- g* _____ 5. contains the vocal cords
- l* _____ 6. nerve that activates the diaphragm during inspiration
- j* _____ 7. pleural layer lining the walls of the thorax
- a* _____ 8. site from which oxygen enters the pulmonary blood
- i* _____ 9. connects the middle ear to the nasopharynx
- f* _____ 10. opening between the vocal folds
- c* _____ 11. increases air turbulence in the nasal cavity
- h* _____ 12. separates the oral cavity from the nasal cavity

Column B

- a. alveolus
- b. bronchiole
- c. conchae
- d. epiglottis
- e. esophagus
- f. glottis
- g. larynx
- h. palate
- i. pharyngotympanic tube
- j. parietal pleura
- k. pharynx
- l. phrenic nerve
- m. primary (main) bronchi
- n. trachea
- o. vagus nerve
- p. visceral pleura

11. What portions of the respiratory system are referred to as anatomical dead space? *All but the respiratory zone structures*

(respiratory bronchioles, alveolar ducts and sacs, and alveoli).

Why? *Because no gas exchange occurs except in the respiratory zone, particularly in the alveoli.*

12. Define the following terms.

external respiration: Exchange of gases across the respiratory membrane in the lungs.

internal respiration: Exchange of respiratory gases between the blood of the systemic capillaries and the tissue cells of the body.

cellular respiration: Oxygen-using cellular processes (that produce energy) with tissue cells.

Demonstrating Lung Inflation in a Sheep Pluck

13. Does the lung inflate part by part or as a whole, like a balloon? *Part by part.*

14. What happened when the pressure was released? *The lung deflated.*

15. What type of tissue ensures this phenomenon? *Elastic connective tissue.*

Examining Prepared Slides of Trachea and Lung Tissue

16. What structural characteristics of the alveoli make them an ideal site for the diffusion of gases?

Thin walls, extremely large surface area.

Why does oxygen move from the alveoli into the pulmonary capillary blood? *Because the partial pressure of oxygen is greater in the alveoli; therefore, it moves according to the laws of diffusion into the pulmonary blood.*

17. If you observed pathological lung sections, record your observations. Also record how the tissue differed from normal lung tissue. Complete the table below using your answers.

Slide type	Observations	Comparison to normal lung tissue
<i>Student data.</i>	<i>Student data.</i>	