

# Breathe In, Breathe Out: The Respiratory System



**Fourth Grade, Fifth Grade**

**Science,**

by Sanayya Sohail

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Show your students the parts that work together to make a person breathe! Have them compare the lungs of a healthy person, the lungs of a smoker, the lungs of a city resident, and the lungs of a miner.

## Learning Objectives

Students will be able to identify the parts of the respiratory system. Students will be able to describe the functions of each part of the respiratory system.

## Materials and preparation

- Poster board
- Computers
- Index cards (7 per student)
- Markers
- Respiratory System worksheet
- Your Respiratory System worksheet
- Notebook paper
- Are Your Lungs Healthy worksheet
- Computers
- Your Body: Your Lungs worksheet

## Key terms

- sinus cavity
- pharynx
- larynx
- trachea
- lung
- bronchi
- diaphragm

## Attachments

- Are Your Lungs Healthy (PDF)
- Respiratory System (PDF)
- Your Body: Your Lungs (PDF)
- Your Respiratory System (PDF)

## Introduction (10 minutes)

- Tell your students that today they will learn about the respiratory system.
- Display a poster and divide it into two columns, with the first column labeled with *know* and the second column labeled with *learned*.
- Ask your students what they know about the respiratory system. Write the information in the first column.

## Explicit Instruction/Teacher modeling (40 minutes)

- Pass out the Respiratory System worksheet to your students.
- Go over the worksheet with your students and explain the function of each part.
- Ask your students to label the part as you go over it.
- Instruct your students to write the definition and explanation of each word as you explain it on notebook paper.
- Explain to your students that the **sinus cavity** is the area around the nose and eyes that cleans the air people breathe in.
- Inform your students that the **pharynx** is behind the nose and mouth and that the **larynx** is in the neck

and contains the vocal cords.

- Tell them that the **trachea** connects the pharynx and larynx to the lungs and is responsible for the passage of air, while the **bronchi** are small tubes that bring air to and from the lungs.
- Remind them that the **lung** is the main part of the respiratory system and puts oxygen into the bloodstream.
- Explain that the **diaphragm** is a muscle that moves up and down to expand the lungs. This helps a person breathe.

### **Guided Practice (15 minutes)**

- Ask your students to complete the Your Respiratory System worksheet with a partner.
- Go over the worksheet as a class.

### **Independent working time (20 minutes)**

- Give each student seven index cards.
- Ask your students to write the name of the part on the front of the card.
- Have them draw the picture of the part on the front of the card as well.
- Ask your students to write the description and function of the part on the back of the card.

### **Differentiation**

- **Enrichment:** Ask your students to complete the Are Your Lungs Healthy worksheet. After that, have them research any two different types of lungs from the worksheet. Ask them to write a compare and contrast paragraph on the two different types of lungs.
- **Support:** Ask your students to create two columns on a piece of paper. Have them label the first one *know* and the second one *learn*. Ask them to fill out the *know* column for each part of the respiratory system. Go over the chart and explain the missing parts again. Ask your students to fill out the *learn* column after you finish explaining the parts again.

### **Assessment (15 minutes)**

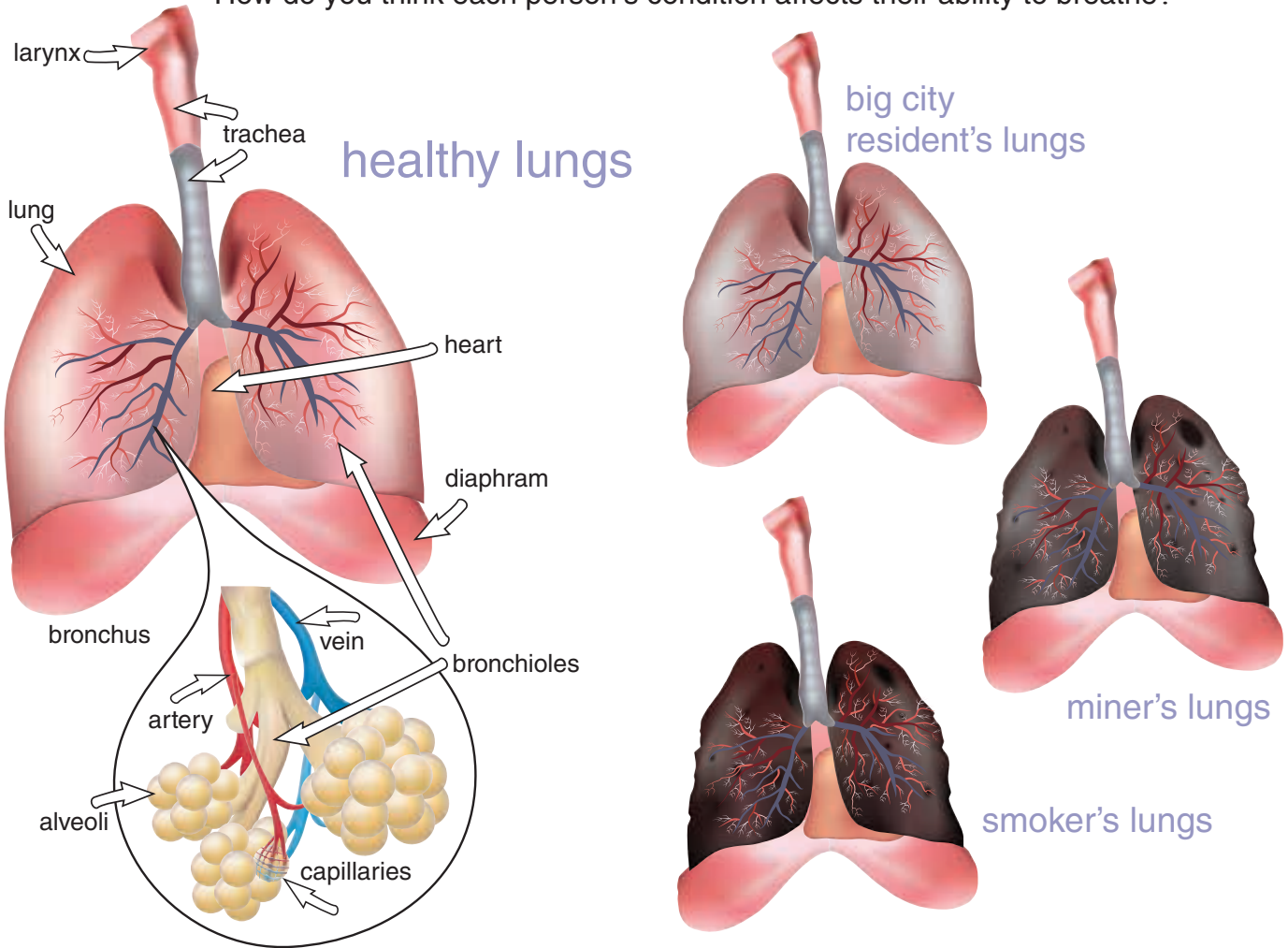
- Ask your students to complete the Your Body: Your Lungs worksheet.

### **Review and closing (10 minutes)**

- Ask your students what they learned about the respiratory system, and write it in the second column on the poster board from the introduction.

# Are your lungs healthy?

**Directions:** Compare the healthy pair of lungs to the other types of lungs.  
How do you think each person's condition affects their ability to breathe?



**Word Scramble!** Use the diagram above to unscramble these names of lung parts.

1. vielaol \_\_\_\_\_

5. tchraae \_\_\_\_\_

2. gnul \_\_\_\_\_

6. chusbron \_\_\_\_\_

3. terary \_\_\_\_\_

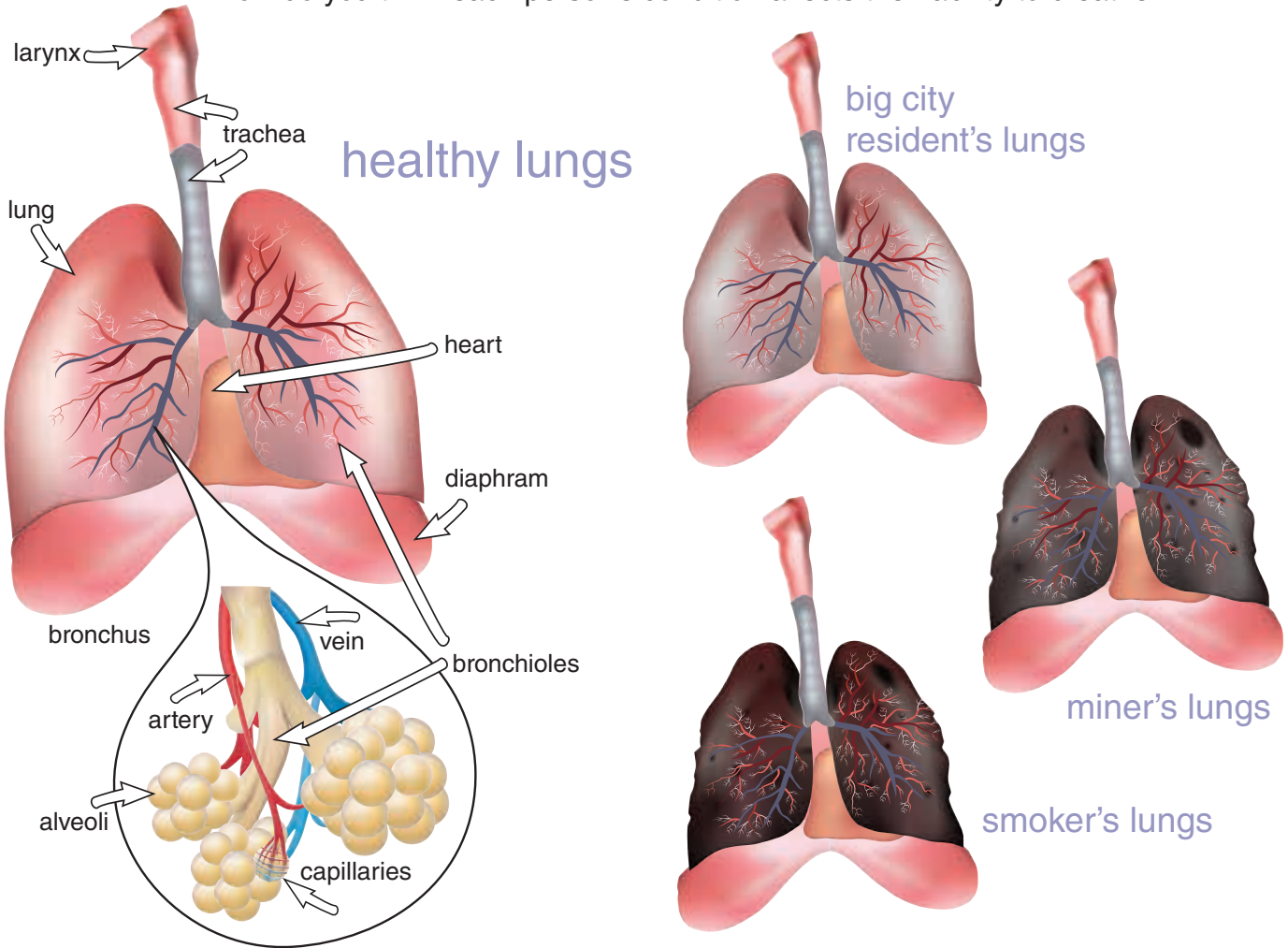
7. brchionleo \_\_\_\_\_

4. evin \_\_\_\_\_

8. pillapciesa \_\_\_\_\_

# Are your lungs healthy?

**Directions:** Compare the healthy pair of lungs to the other types of lungs.  
How do you think each person's condition affects their ability to breathe.



**Word Scramble!** Use the diagram above to unscramble these names of lung parts.

1. vialaol     alveoli

5. tchraae     trachea

2. gnul     lung

6. chusbron     broncus

3. terary     artery

7. brchionleo     bronchioles

4. evin     vein

8. pillapciesa     capillaries

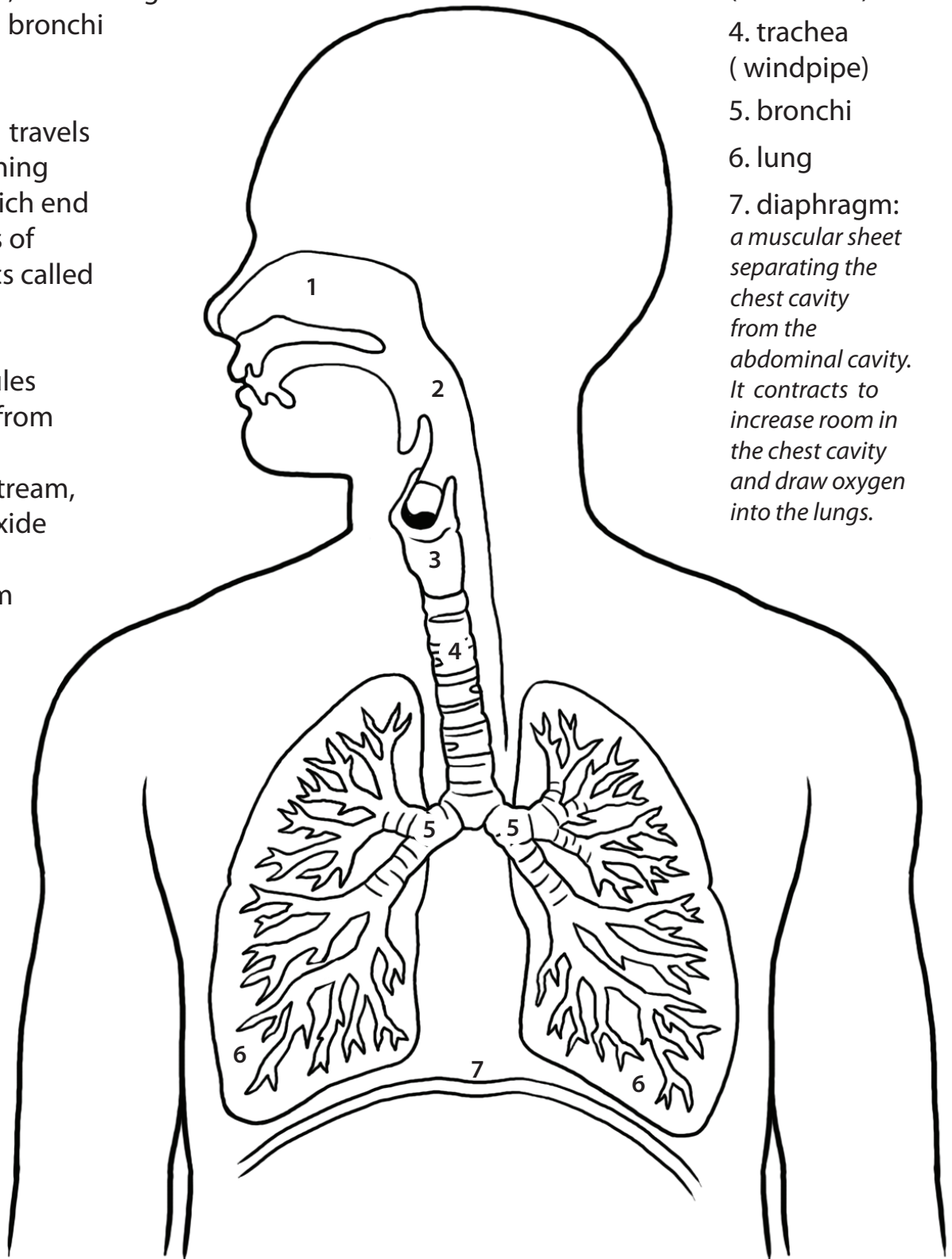
# Respiratory System

During inspiration, air passes through the mouth and nose, down the throat, and through the trachea and bronchi to the lungs.

In the lungs, air travels through branching bronchioles which end in small clusters of microscopic sacs called alveoli.

Oxygen molecules are transferred from the alveoli into the bloodstream, and carbon dioxide moves out of the bloodstream and back into the respiratory tract where it is released through the mouth and nose during expiration.

1. sinus cavity
2. pharynx
3. larynx  
(voice box)
4. trachea  
(windpipe)
5. bronchi
6. lung
7. diaphragm:  
*a muscular sheet separating the chest cavity from the abdominal cavity. It contracts to increase room in the chest cavity and draw oxygen into the lungs.*



Name \_\_\_\_\_

Date \_\_\_\_\_

# YOUR BODY: LUNGS

No other planet in our solar system contains air like ours. The air in our planet contains **oxygen**, which is what humans and animals need to survive. Your **lungs** help take in that oxygen and share it with the rest of your body.

Your body has **two lungs**, and they are the second largest organs in your body (the largest organ is your **skin**). They work together with your **heart** to draw in oxygen, which is carried by **red blood cells** across your body.

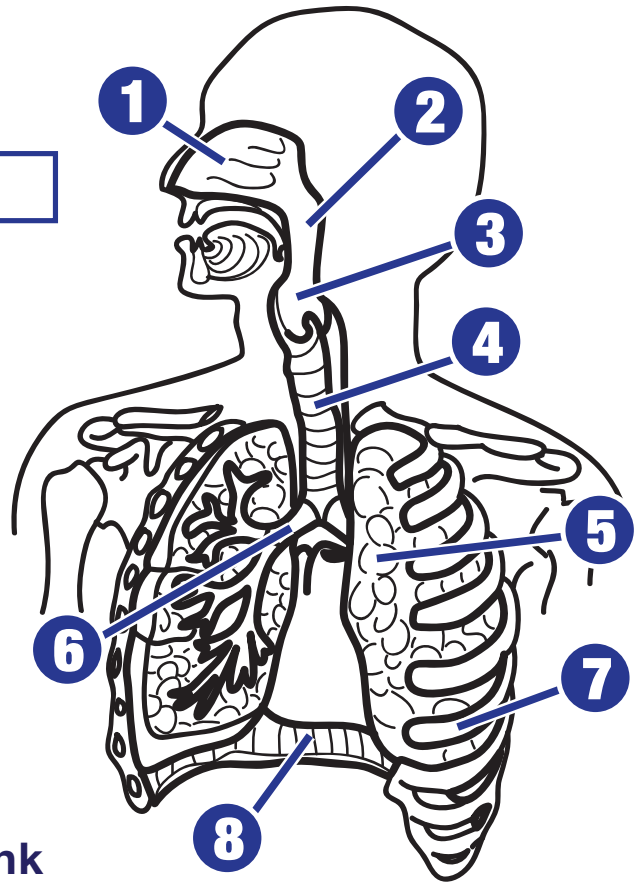
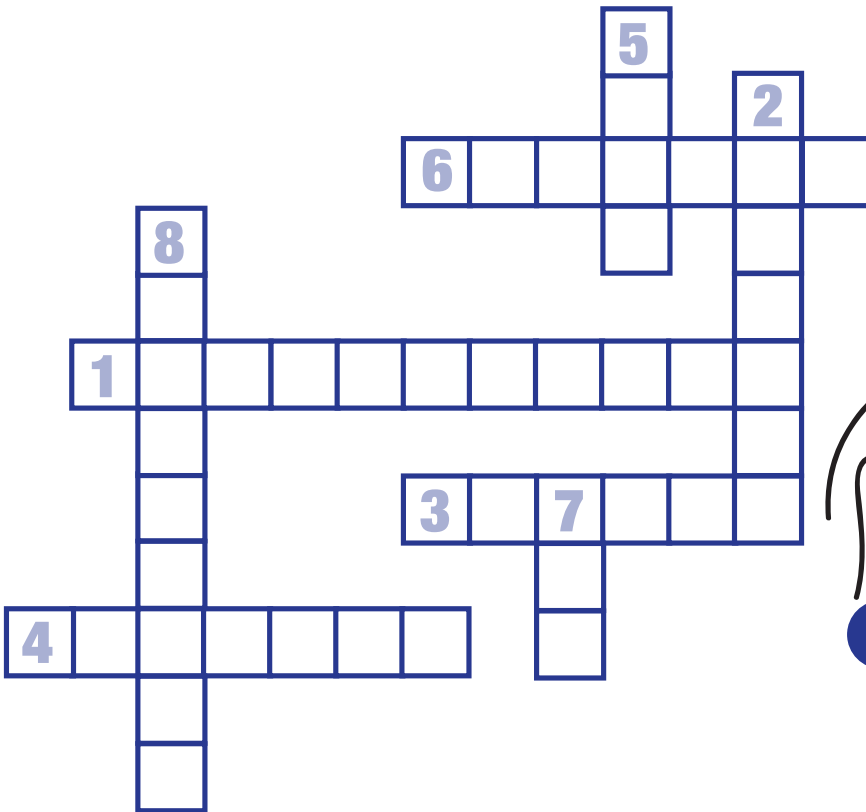
A large muscle called the **diaphragm** works with your lungs to get air in and out of your body. It rests just

below your lungs, near the upper part of your belly.

When you breathe in (**inhale**), air travels through your **nasal cavity**, where your **nose hairs** filter dust and other gross stuff before it enters your body. Air then travels down the **trachea**, the **pharynx**, and the **larynx** in that order before passing through two large tubes called **bronchi**. These large tubes kind of look like trees, expanding and branching out into the spongy part of your left or right lung.

Your **ribcage** protects this delicate system, and each **rib** embraces a soft, spongy lung on the left or right side of your body so you don't accidentally hurt them.

Use the reading, word bank, and diagram to solve the crossword.



## Word Bank

Larynx Pharynx Lung Nasal Cavity Bronchi Trachea Rib Diaphragm

# Your Respiratory System

**Directions:** Look at the diagram. Read about what each part of the respiratory system does. Label each part of the respiratory system on the diagram.

**nose** – contains two nostrils which brings air in and out of the body

**answer:** \_\_\_\_\_

**trachea or windpipe** – a tube that connects the upper respiratory system to the lungs

**answer:** \_\_\_\_\_

**lungs** – the main part of the respiratory system; it puts oxygen into the bloodstream

**answer:** \_\_\_\_\_

**mouth** – can be used to suck in or expel air

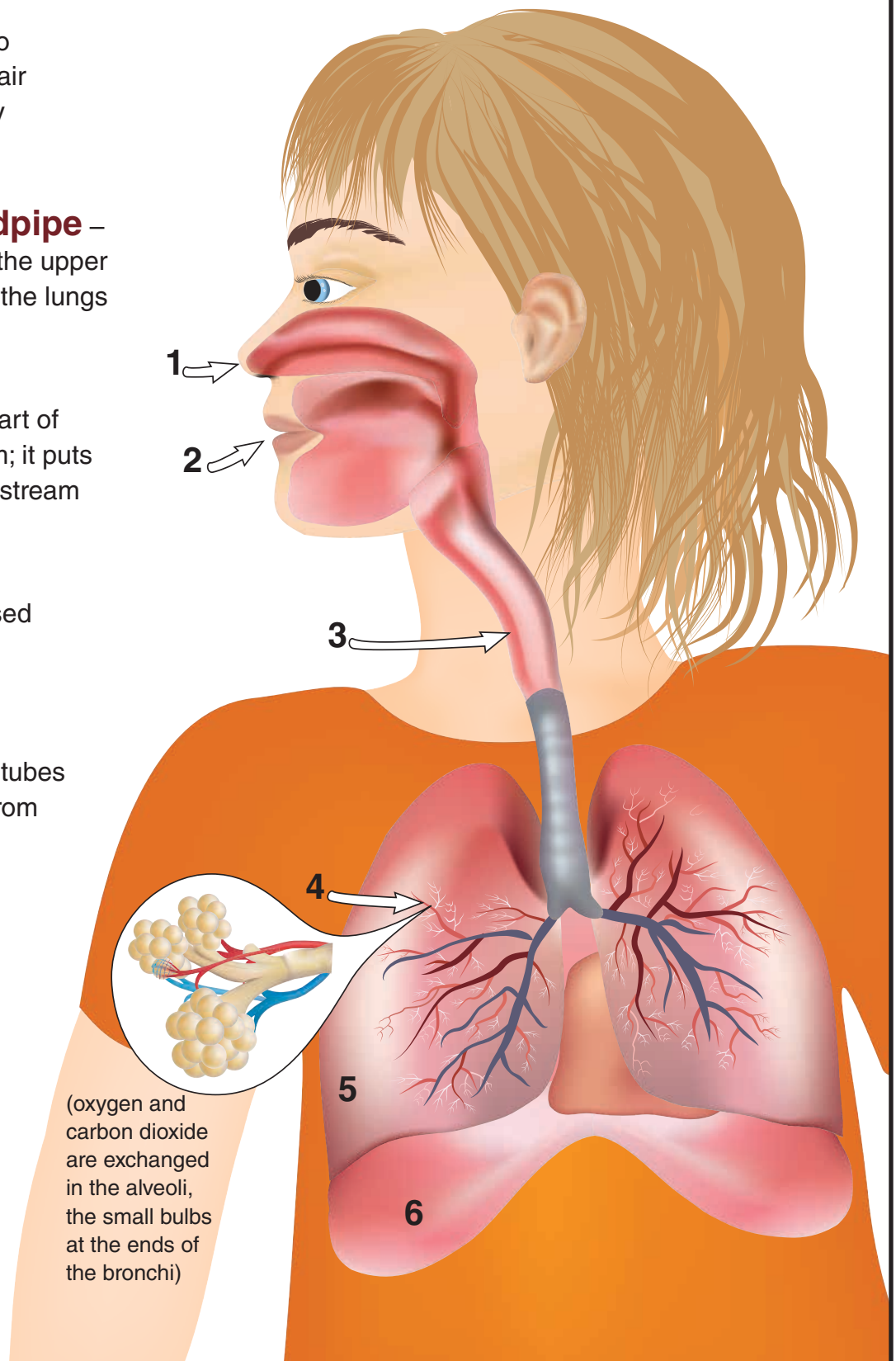
**answer:** \_\_\_\_\_

**bronchi** – smaller tubes that bring air to and from the lungs

**answer:** \_\_\_\_\_

**diaphragm** – muscle that moves up and down to help expand your lungs

**answer:** \_\_\_\_\_



# Your Respiratory System

**Directions:** Look at the diagram. Read about what each part of the respiratory system does. Label each part of the respiratory system on the diagram.

**nose** – contains two nostrils which brings air in and out of the body

answer: 1

**trachea or windpipe** – a tube that connects the upper respiratory system to the lungs

answer: 3

**lungs** – the main part of the respiratory system; it puts oxygen into the bloodstream

answer: 5

**mouth** – can be used to suck in or expel air

answer: 2

**bronchi** – smaller tubes that bring air to and from the lungs

answer: 4

**diaphragm** – muscle that moves up and down to help expand your lungs

answer: 6

(oxygen and carbon dioxide are exchanged in the alveoli, the small bulbs at the ends of the bronchi)

