



## Systems of the Human Body Concept: The Respiratory System

- List the major components of the respiratory system and describe their functions.

### Key Vocabulary

- breathe
- diaphragm
- lungs
- oxygen
- trachea

### Lesson Options: Select lesson elements to create a single-day or multiday lesson.

#### Lesson Elements

**Digital Playlist:** Generally, children will complete the Digital Playlist first, then follow up with some or all of the activities described below. As you select and do those activities with your child, you may wish to reassign some or all of the digital activities for additional practice.

**Explore Activity:** This follow-up is designed to be used closely with the Digital Playlist to help your child understand the topic.

**Dig Deeper Activity:** This offline activity provides an additional learning experience with the same topic.

**Extend Activity:** This offline activity extends the child's understanding and application of the same topic.

## Explore Activity

1. Gather a balloon and blow it up while your child watches.
2. Ask your child what happened to the balloon as you *breathed* into it.

**Sample answer:** "The balloon got larger."

3. Have your child watch the video *Professor Hester: Respiration*.
4. Ask your child what part of their body the balloon was modeling.

**Sample answer:** "The *lungs*."

5. Have your child take five deep breaths, concentrating on how their chest rises and falls. Have them compare the movement of their chest to the movement of the balloon. Then, have them name things they use their breath to do (sing, play a wind instrument, spin a pinwheel, etc.)

### Materials

- Ruler



## Dig Deeper Activity

### Set Up

1. Gather the materials on the list.

### Procedure

1. Discuss how the *lungs* are connected to a tube that allows air to go in and out. This tube is called the *trachea*.
2. Tell your child that they will create a model that shows how the *lungs* work.
3. Have your child draw several squiggly lines on each of the paper bags. Tell them these bags represent the *lungs*.
4. Slide one of the straws into one of the paper bags. Use the masking tape to seal up the bag around the straw. Make sure there are no air pockets around the seal.
5. Repeat step 4 with the other straw and paper bag. Have your child *breathe* into and out of both straws at the same time. Observe what happens.
6. Ask your child: *What happens when you breathe into the straws?*  
**Sample answer:** “The paper bags increase and decrease in size.”
7. Ask your child: *What do you think would happen if you were to run in place for a few minutes and then breathe into the bags?*  
**Sample answer:** “The bags would increase and decrease in size at a faster rate.”
8. In this activity, you moved air into and out of the paper bag “*lungs*” when you *breathed* into the straws. The muscle that moves to pull air into the *lungs* and push it out is called the *diaphragm*.
9. The straws represent the tube-like area that connects the mouth to the *lungs*. It is called the *trachea*, or *windpipe*.
10. Ask: *How did the bags move? Is that similar or different than how lungs move?*

### Materials

- Two straws
- Two small paper bags (lunch size)
- Markers
- Masking tape

## Extend Activity

1. Push thinking forward. Encourage your child to draw a picture of the respiratory system. Children can use online visuals as support. Optionally, encourage your child to use different color markers or crayons to draw arrows showing where the air enters and exits the *lungs*.
2. Help your child diagram the image. Have them point to the *lungs*, *diaphragm*, and *trachea*. Draw lines from those points and then write their names at those line endpoints.
3. Share your learning. Have your child complete a physical activity such as running, walking, or jumping jacks. Have them describe the speed of their breathing before and after each exercise.



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## MODIFICATIONS

Beginning Learner	Advanced Learner
Your child will benefit from seeing simple diagrams of the respiratory system to get a better understanding of the organs of the system. The diagram should show the <i>trachea</i> , the <i>lungs</i> , and the <i>diaphragm</i> and should include labels.	Your child will be able to incorporate the vocabulary terms into their descriptions of the respiratory system. They will know where each part is located and what the functions of them are. They may also be interested in learning about how breathing deeply can help the blood flow more smoothly throughout the body.

### Signs of Success and Needs

One sign that your child understands the respiratory system is if they can describe the main structures and functions of the system.

Some children will mistakenly believe that their stomach is part of the respiratory system because it appears to move up and down when they *breathe*. Remind your child that it is the *diaphragm* that is moving up and down. This causes their abdomen to move.