



## Science Instructional Activity – page 1 of 2

<b>Target Level:</b> Use a model to illustrate the organization and interaction of major organs into systems (e.g., circulatory, respiratory, digestive, sensory) in the body to provide specific functions	<b>Precursor Level:</b> Identify which organs work for a specific function	<b>Initial Level:</b> Recognize that different organs have different functions	<b>Accessibility Considerations for Practice</b> <ul style="list-style-type: none"> <li>Information may be accessed through concrete pictures, physical scale models (e.g., tactile displays), and/or computer generated models</li> <li>Represent relationships with diagrams representing only the most relevant information</li> </ul>
<b>Activity Title:</b> Respiratory System	<b>Estimated Classroom Time Needed:</b> One session	<b>Essential Questions:</b> <ul style="list-style-type: none"> <li>Does the student understand that the lungs, diaphragm, trachea, and nose work together as the respiratory system?</li> <li>Can the student show how the parts of the respiratory system work together using a model?</li> </ul>	
<b>Suggested Materials</b> DIY Human Body iPad app Empty plastic soda bottle or water bottle, approximately ½ liter Scissors Balloon, 15-30 cm diameter when inflated Disposable glove Rubber band, Clear tape Push pin, thumbtack, or safety pin  (Simpler) How Do Lungs Work video - <a href="https://www.youtube.com/watch?v=EKhZgBDQCjk">https://www.youtube.com/watch?v=EKhZgBDQCjk</a>  (More complex) TED Ed video – How do the lungs work? <a href="https://www.youtube.com/watch?v=8NUxvJS_0k">https://www.youtube.com/watch?v=8NUxvJS_0k</a>		<b>Engage Students in the Activity</b>  Begin with a physical activity: Throwing a ball, running, or breathing deeply. Or for students with mobility concerns, ask about breathing.  Ask “How is your body able to do this activity?”  Ask “What if you didn’t have lungs?”  Allow for discussion.	
<b>Activity Description</b> Show a video about how the respiratory system works (choose the video that is most appropriate for your student from the materials list). Or, use another method of presentation that describes respiratory system major components (lungs, diaphragm, trachea, and nose), how they are connected, and function.  Help students assemble the model as shown in the iPad app or present the model already assembled. Show students pictures of each organ that is in the respiratory system (diaphragm, lungs, trachea, and nose). Ask students which parts of the model represent those organs. Discuss what each organ does and how it contributes to the respiratory system. Allow students to become familiar with the model. Allow students to make the lung model "breathe".			



Science Instructional Activity – page 2 of 2

Ideas for differentiating the activity		
<b>At the target level:</b>	<b>At the precursor level:</b>	<b>At the initial level, students will:</b>
Students will use a model to show how the diaphragm, lung, and trachea work together to help people breathe. Students will identify the organs that are represented in the model and describe their functions.	Students will match the organs of the respiratory system to their functions.	Students will examine the different organs in the model and their functions.
Checks for Understanding		
<b>At the target level, students will:</b>	<b>At the precursor level, students will:</b>	<b>At the initial level, students will:</b>
Demonstrate understanding by correctly labeling the organs in the respiratory system that are represented in the model (e.g. diaphragm, lung, trachea). Demonstrate understanding of how the organs work together to help people breathe (e.g. diaphragm moves down and gives lungs room to expand, lungs fill with air, trachea connects nose to lungs, etc.).	Match picture cards of organs in the respiratory system to their correct functions and representation in the model independently.	When asked if two organs that belong to the respiratory system have the same or different function student will respond correctly (e.g., yes or no). For example, say to the student "The balloon is a model of the lung. The balloon fills with air like your lungs do. The rubber on the bottom of the bottle is a model of the diaphragm. Does the diaphragm have the same function as the lung?"