

## ACTIVITY 1: AIR IS A SUBSTANCE

**Objective**    1 plastic bottle for the teacher

	<ul style="list-style-type: none"> <li>• Paper</li> </ul> <p><i>Part 2:</i></p> <ul style="list-style-type: none"> <li>• 2 plastic cups per student</li> <li>• 1 straw per student</li> <li>• Water</li> </ul>
<p><b>Procedure – Part 1</b> (performed by the teacher)</p>	<ol style="list-style-type: none"> <li>1. Form small balls of paper.</li> <li>2. Place the plastic bottle horizontally in front of the face.</li> <li>3. Put a small piece of paper in the mouth of the bottle.</li> <li>4. Blow to introduce the paper ball into the bottle.</li> </ol>
<p><b>Questions – Part 1</b></p>	<p>Will I be able to put the paper ball inside the bottle with one blow? Why doesn't the paper ball go into the bottle?</p> <p>The Greek physicist Empedocles demonstrated in 440 BC that air is a substance, so the bottle in the previous demonstration is not empty, but rather full of air. Now, each student will be able to repeat, with small changes, the experiment carried out by Empedocles to verify that air is a substance.</p>
<p><b>Procedure – Part 2</b> (performed by students)</p>	<ol style="list-style-type: none"> <li>1. Fill one of the glasses with water.</li> <li>2. Place your finger over one of the openings in the straw and place the other end in the water.</li> <li>3. Remove your finger from the opening and insert the straw again.</li> </ol>

## **Complementary material**

UNED. (2010, February 26). *19-02-2010. Ciencia en Acción XXXI - El experimento de Empédocles. El péndulo de Wiberforce* [Video]. YouTube. Retrieved February 6, 2023, from <https://www.youtube.com/watch?v=NGbw60ACXwk>.

	Students now have a general understanding of what it feels like to work hard to get enough air into their lungs. Upon completing this activity, students will begin to gain content knowledge about asthma and other respiratory diseases such as pneumoconiosis.
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### **Complementary material**

AirNow.gov, U.S. EPA. (n.d.). *Easy breathers. Air Quality Workshop for Teachers: A Toolkit for Facilitators*. Retrieved February 6, 2023, from [https://www.airnow.gov/sites/default/files/2020-10/easy\\_breathers.pdf](https://www.airnow.gov/sites/default/files/2020-10/easy_breathers.pdf)

Curiosidades con Mike. (2017, May 31). *¿Fumas? Experimento Casero muestra Efecto en Pulmones* [Video]. Retrieved February 6, 2023, from <https://www.youtube.com/watch?v=DS8-dnc4-4M>.