

The bottle that breathes

1

Overall aims:

- Recognize air as an element;
- Interiorize the importance of air;
- Make observations and predictions;
- Make and taste hypotheses
- Verbalize concepts and ideas;
- Understanding how the breathing process works.

2

Vocabulary - keywords

Air, Breathing, Play-based learning.

3

Sustainable abilities developed

Systematic thinking
Anticipatory competency
Critical thinking competency

4

Pillars of sustainability included

Environmental sustainability

5

STEAM domains

Science, Art

6

Teaching methodologies/activity outline

Before the activity:

Teacher explains to pupils that people need to breathe, and so do lots of other animals— and plants. Breathing is part of a process called respiration. During respiration, a living thing takes in oxygen from the air and gives out carbon dioxide. This process gives animals and plants the energy to eat, grow, and live life.



	<p>The activity:</p> <p>Take an empty plastic bottle and squeeze the second half of it with hands, then introduce a deflated balloon inside and attach it to the mouthpiece of the bottle.</p> <p>Release the bottle by not squeezing it anymore; thus, it resumes its original form and the balloon inflates. This is what happens to our lungs during inspiration: the rib cage expands and the lung swells with air.</p> <p>Every time we squeeze the bottle, the balloon deflates: that's what happens to our lungs during exhalation: the rib cage contracts and the lung empties, emitting the air</p>
7	<p>Expected learning outcomes</p> <p>The child will be able to</p> <ul style="list-style-type: none"> • Follow instructions; • Develop the senses; • Act like a little scientist; • Explain the process of breathing.
8	<p>Assessment</p> <ul style="list-style-type: none"> • Initial evaluation: ask children what they already know about air; • Formative evaluation: develop and use an observational template to assess the engagement of children during the activities; • Final evaluation: ask children to explain what they have understood about air (with the aid of paintings and collages).
9	<p>Equipment and materials to be used in learning unit (tools, ingredients etc)</p> <p>Empty plastic water (possibly a recycled one)</p>
10	<p>Kind of setting - lab, kitchen, outdoor etc.</p> <p>Indoor</p>
11	<p>References - source:</p> <p>http://www.didatticaduepuntozero.it/wp20/wpcontent/uploads/2018/02/Aria.pdf</p>

