

<b>Topic</b>	Environment
<b>Phenomenon</b>	Existence of air
<b>Experiment</b>	Feeling air
<b>Material to be provided</b>	1 balloon 1 plastic bottle
<b>Additional Material</b>	none
<b>Preparation for experiment</b>	none

### **Researcher question**

Are empty bottles really empty?

### **Description of experiment**

Ask the children what is in the empty, closed plastic bottle. Collect the answers and ideas that they give and suggest to the children that you examine these answers together.

Give each group of children a well-sealed plastic bottle. Tell the children to try to squash their plastic bottle by pressing them firmly with both hands. What happens? Can they squash the plastic bottles?

Ask the children to suggest ideas as to how it might be possible to squash the plastic bottles. Have them open the plastic bottle cap and then repeat the experiment. Why does it work this time? Do the children have any ideas about this? Do the children feel anything at the mouth of the plastic bottle?

### **Explanation**

We cannot see, smell, or taste the air all around us but we can feel it. An apparently empty plastic bottle also contains air. If the plastic bottle is closed with a cap, the air in the plastic bottle cannot escape nor can the ambient air enter the plastic bottle. If you try to squash a plastic bottle, you won't have a lot of success as long as the plastic bottle remains closed. The air stays put in the plastic bottle and cannot be displaced. If we open the cap we can "squeeze" the air out of the plastic bottle by pressing it with our hands, and then we can squash the plastic bottle. We can feel the air as it escapes from the plastic bottle.

### **Further ideas**

Blow up some balloons together with the children. Ask them what is in the filled balloon and ask them to think of ways in which their suggestions can be tested. Try out the various ideas together with the children. Perhaps one of them knows that you can make a squeaky noise with a balloon if you stretch the mouthpiece while the air is escaping. Can air also be made audible in this way? What ideas do the children have about this?