

Topic	Health
Phenomenon	Senses (smell)
Experiment	Distinguishing and recognizing odors
Available material	cotton 10 film canisters
Additional material	strong and characteristically-smelling foods or materials (for example, onions, coffee, cinnamon, lemon, herbs, fresh woods) knife
Preparation for experiment	With the children, collect things that have a particularly strong, characteristic smell, such as fruits, herbs, spices, and fresh wood – or bring a selection to class with you. Do not use things with a very harsh smell like vinegar, or dangerous substances like gasoline. Make sure that the children do not swallow any of the items collected.

Research question

Can our nose distinguish various smells from each other? Can we recognize something from the smell alone?

Description

This experiment should not be conducted in small groups, but together with the entire group of children.

Encourage the children to go through and describe the materials you have collected: What do they look like? How do they feel? Can you make noises with them? How do they smell on the outside and (if cut into pieces) on the inside? With the children, sort out the names of the objects.

Set up pairs of odor samples by inserting a small quantity of each item into two film canisters and covering them with wads of cotton. To make comparative smelling easier, replace the lids loosely. Ask the children to sort the film canisters into pairs with the same smell using only their sense of smell. Check the results together – do all the children agree? Come up with descriptions of the smells with the children.

Explanation

Smells are transported through the air. They generally reach the olfactory cells in the upper part of the nasal cavity by being breathed in through the nose. Each olfactory cell specializes in a particular scent. When a scent attaches to the corresponding sensory hair on the olfactory cell, an electric stimulus is triggered which, after being amplified several times, is forwarded directly to the brain and processed there. Smells and fragrances can trigger emotions and feelings incredibly quickly – joy, fear, nausea, or well-being, depending on the smell. Very intense smells also penetrate our consciousness, which means that a living being or an object can be recognized by a smell and this smell can be assigned to it. This ability is not inborn; it is learned and can be practiced. The sense of taste and the sense of smell are closely linked with each other.