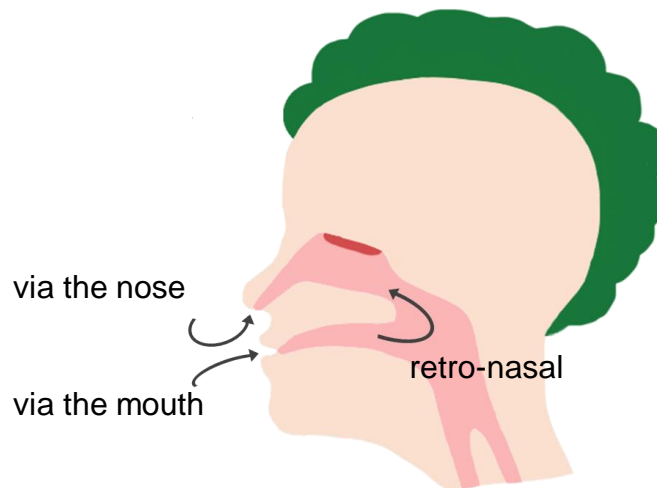


1 The sense of smell

The signals from the sense of smell in the nose make up a large part of what we normally perceive as taste. When we eat, **food odors** (small molecules) **enter the nose**, both from **outside via the nose** and from **inside through the mouth (retro-nasal)** as we chew it.



The sense of smell can distinguish **a trillion** (1,000,000,000,000) of **different odors!!** Therefore, it offers a much more varied taste experience compared to the information solely coming from the sense of taste (sweet, salty, bitter, sour and umami).

When we **have a cold**, our **smell receptors are covered by mucus** that prevents food molecules to reach the nose receptors...



The Smell Detection Game

In this activity, you will use the unique skills of your nose. You have to detect the odors that come from different foods. Some odors may be very familiar and easy to detect, while others may be more difficult to detect.

What you need

- ❖ Small equal cups with lids
- ❖ aluminum foil
- ❖ Foods with diverse odors (e.g. lemon peel, dried herbs, spices etc.)

Preparation

- ❖ Put one food into each cup and cover the cup with aluminum foil so you can't see what's in it.
- ❖ Close the lid.
- ❖ Label each cup with a number.
- ❖ Mix all cups so you cannot identify which is which.

How it works

1. Start with one cup and open the lid. Take two short sniffs and try to guess the smell. Write down the odor you guessed in the field below.
2. After sniffing, close the lid, so the food doesn't lose its smell.
3. Repeat the procedure with all the odors.
4. Check if you correctly guessed all the odors!

Ooh no!
I mixed up the cups. Can you help me to detect the odors?



Correct answers:

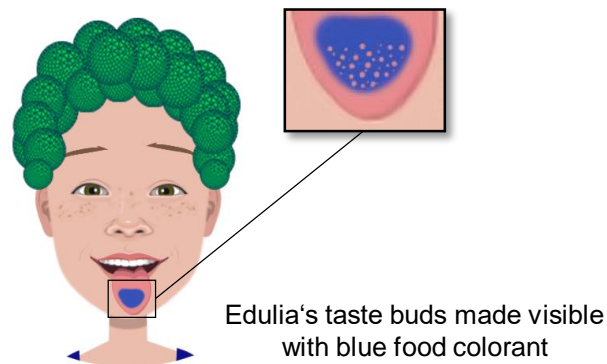
_____ of _____

1
2
3
4
5

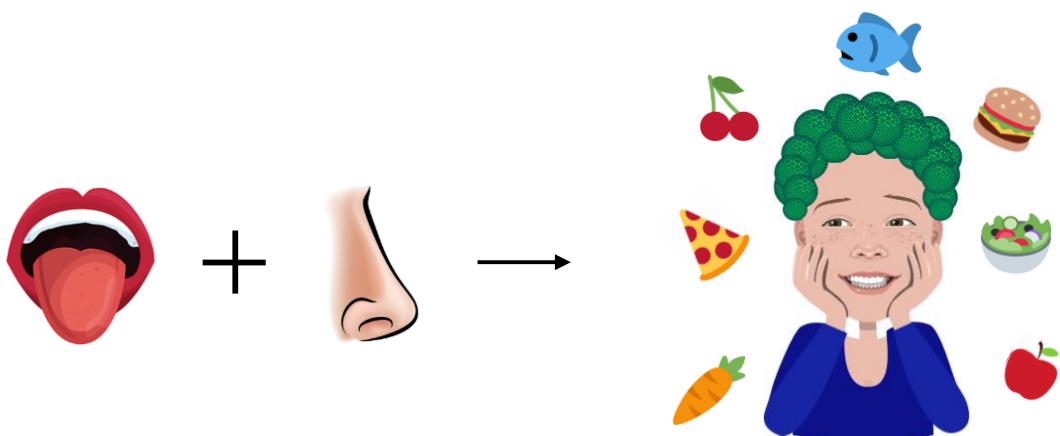
6
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10

2 Flavor vs Taste

- ❖ Most of us use the terms "**flavor**" and "**taste**" interchangeably, but these are in fact two different things.
- ❖ Our sense of taste comes from the tongue, where we perceive the **5 basic tastes of sweet, salty, sour, bitter, and umami** with our taste buds (recent research suggests that the tongue might be able to perceive even more tastes like fat, carbonation and metallic).



- ❖ When we eat food, the **food odors** (small molecules) **reach our nose** e.g. by breathing in through the nose. But also while chewing, the food molecules pass through the air to the **back of our mouth**, on its way to the nose. This is called "**retro-nasal smell**".
- ❖ The sense of **taste and smell work together** to create something called "**flavor**", which we normally identify as something that tastes like specific foods such as "cherries", "chocolate", "cheese", etc.



Flavor vs Taste Experiment



In this activity,
you will learn that our tongue and
nose are excellent team players.
You will be surprised by this
interaction!



What you need

- ❖ Apples cut into bite-sized pieces

How it works

1. Take a slice of apple. **Attention!** Do not smell or taste the apple at this point.
2. Pinch your nose with your fingers.
3. Take the apple and chew it but keep pinching your nose! Can you recognize the taste? Write down your answer in the box below.

Taste
(closed nose)

Tip: at this stage you should only be able to taste a **basic taste**.

4. Now stop pinching your nose and continue to chew. What can you taste now? You should taste a difference now. Write down your answer in the box below.

Flavor
(opened nose)

If you didn't taste a difference, it's probably because you didn't pinch your nose tight enough - just repeat the procedure.