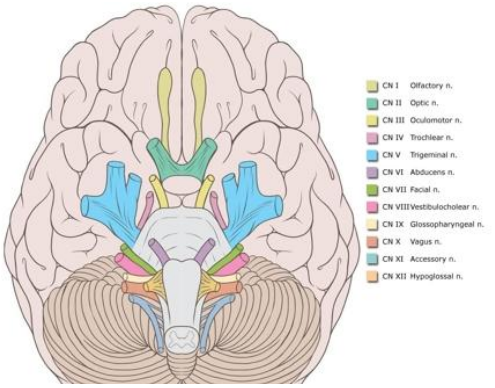
Name That Sense!

Smell (AKA "Olfaction") and Taste (AKA "Gustation")

Authors: Beth Bryant-Lisk, Betsy Wright, Lauren Harber, Dr Helena Carvalho

Exercise #1: Student will compare taste with and without sight and smell.
Students will guess beforehand how many seconds it takes them to taste the food.

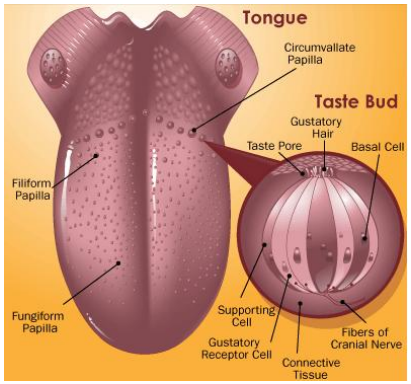
- Student clips nose and covers eyes with a blindfold.
- The student will eat the food item.
- After they have chewed the food for a few seconds, their nose will be unclipped.
- Students will be timed how long it takes them to identify the taste of the food, both with their nose clipped, and with their nose unclipped.
- They can compare the times and see the difference!



http://radiopaedia.org/articles/cranial_nerves

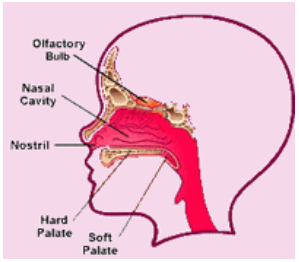
Exercise #2: Student will eat salt or sugar with a dry tongue
and compare the flavor with a "wet" tongue.

- Student dries his/her own tongue with a napkin.
- They will have either sugar or salt put on their dry tongue (keeping their mouth open).
- They will close mouth to allow saliva to wet their tongue.
- The students will compare the taste they experienced with a dry and wet tongue.



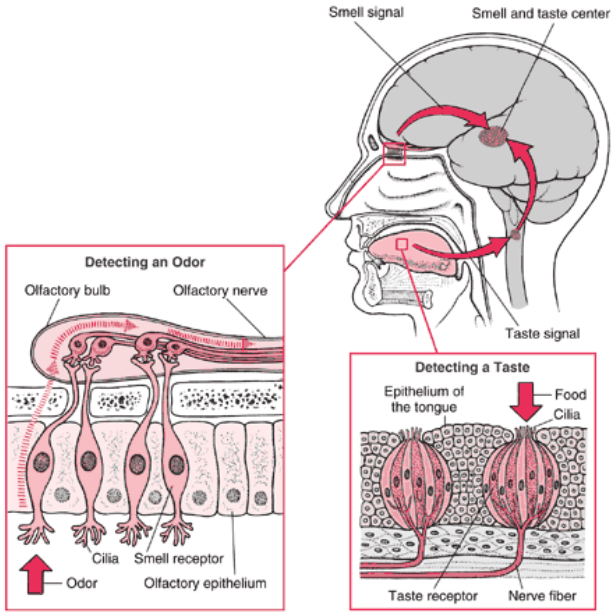
Exercise #3: Students will smell scented oil that is put on a Q-tip.
Can they identify the smell?

- Each student smells a Q-tip that has been soaked in an unknown scent of essential oil.
- They will identify the smell they experience.
- The students will learn the role that memory plays in the brain of identifying certain smells.



Smell and taste are closely linked. The taste buds of the tongue are what allow you to taste the food you eat. There are also nerves in the nose that allow you to smell. The information from your taste buds and nerves in your nose are sent to the brain. The brain processes this information and allows you to experience a taste, such as lemon juice, or to smell a certain smell, like a rose. Some tastes—such as salty, bitter, sweet, and sour—can be recognized without the sense of smell. However, more complex flavors (raspberry, for example) require both taste and smell sensations to be recognized.

A receptor is a protein that another molecule can bind, or connect to, in order to make the body do something, such as taste. Taste receptors are found within taste buds located not only on the tongue but also on the inside of the cheeks, throat, and the first part of the esophagus, which is where the food travels to get to the stomach. Taste buds are continually covered in saliva from salivary glands. If too little saliva covers the taste buds, the sense of taste is distorted, or changed.



http://www.pakmed.net/academic/zent/smell/smell016.htm

Taste and smell should be considered together because they are so related in our experience that most people are unaware that most of what they call “taste” is really an olfactory (“smell”) experience. When something is put in the mouth, the body does more than just “tastes” it. Much more is involved here. For example, a mouthful of orange soda pop gives a taste that is a combination of sour and sweet; it is cold; it may sting or tingle a bit if it is carbonated; it causes a complex touch sensation in the mouth, and it smells fruity or fragrant. The only part of this complex of sensations that has to do with “taste” is the sensation of sweetness or sourness. Anyone who has ever had a head cold can attest to the flatness or blandness of their diet during that time. This is caused by a lot of mucus that is covering the receptors in the nose. This large amount of mucus blocks the odor molecules from getting to the receptors. We have learned that because the sense of smell is affected, the sense of taste is also affected.

http://www.unmc.edu/physiology/Mann/mann10.html