

Post-trip Lesson for Inside Out: Your Brain Tricked By Color

Advanced Prep

Get four different flavored sodas (fruity ones such as lemon, grape, cherry, etc.). These sodas should also be different colors. Also get one unflavored, clear soda (such as, club soda or seltzer water). Add a few drops of food coloring to the unflavored, clear soda (orange works well). This will make it LOOK like orange soda, but of course, it will NOT have any taste. Pour the five drinks into different cups for taste testers. Label the cups in a way that you will know what they are but students will not, for example A, B, C, D etc.

Engagement

Ask the students if they remember the apple experiment in the Discovery lab. Pose the question to students: "Does what you see influence what you taste?" Collect their guesses on the board.

Exploration

1. Have students taste the soda samples and record what flavor they think they are.
2. Ask people to tell you what each drink tastes like.

Explanation

How many people said your unflavored drink was "Orange"?

Food companies add color to food to influence what it tastes like. People like to see foods in colors that they expect. This shows that the input from our taste receptors is not as straightforward as we might think.

The actual organ of taste is called the "taste bud." Each taste bud (and there are approximately 10,000 taste buds in humans) is made up of many (between 50-150) receptor cells. Receptor cells live for only 1 to 2 weeks and then are replaced by new receptor cells. Each receptor in a taste bud responds best to one of the basic tastes. A receptor can respond to the other tastes, but it responds strongest to a particular taste.

Extension

Have students design their own taste experiments either in class or at home. Have them write about their findings.

Other Resources

Other resources: Neuroscience For Kids -
<http://faculty.washington.edu/chudler/neurok.html>

Nevada Academic Content Standards in Science (NGSS): MS-LS1-3.

Common Core: SL.(6-8).1, SL.(6-8).6

What You Will Need:

- 4 different flavored sodas, 1 unflavored, clear soda
- Small cups

