

Think Like a Scientist

“Science at Home” Experiment

JELLYBEAN TASTE TEST

The Science Behind the Experiment

<https://www.scientificamerican.com/article/bring-science-home-jelly-bean-taste-smell/>

Every time you take a bite of food, parts of your tongue called **taste buds** pick up the taste of the food you are eating. These receptors can taste five basic flavors: salt, sweet, bitter, sour and umami (a savory flavor). But right above your mouth is **your nose**, which also plays a part in how you taste food. Your nose contains millions of little things called receptors that grab odor molecules.

You **smell food** by sniffing the air through your nose while you chew. You smell food while you chew because the back of your throat connects your nose and mouth. In order for you to smell food while you chew, air needs to be flowing from your mouth, up your throat and into your nose.

This explains why pinching your nose stops you from smelling food. This also explains why you have a hard time tasting food when you have a stuffy nose from allergies or a virus that causes you to have a cold ☹️ The odor molecules from the food in your mouth travel to your nose to be smelled.

While you are eating, your brain receives signals from both your mouth and nose, helping you to recognize whatever tasty treat you happen to be chewing. **In this activity you'll separate the sensations of taste and smell** to learn how much they work together for you to taste your food.



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Materials Needed



- Jellybeans and the flavor key (back of the package)
- A blind fold
- A nose
- A mouth
- A partner (to help you with the experiment)

EXCITING IDEA: If you want to be just like a scientist, use the tables on the last page of this handout to record your data as you go!

The Steps of the Experiment



1

Put on your blindfold

Select a jellybean and show it to your partner



2

Place the jellybean in your mouth, chew the jellybean and do your best to figure out the flavor of the jellybean

Tell your partner which flavor jellybean you think you ate and ask if you were correct





3

Put your blindfold back on

Select a second jellybean and show it to your partner



4

Plug your nose!

Place the jellybean in your mouth, chew the jellybean and do your best to figure out the flavor of the jellybean

Tell your partner which flavor jellybean you think you ate and ask if you were correct



5

Put your blindfold back on

Select a third jellybean and show it to your partner



6

Plug your nose!

Place the jellybean in your mouth, chew the jellybean and do your best to figure out the flavor of the jellybean

Half way through eating the jellybean, release your nose and keep chewing! Do your best to figure out the flavor of the jellybean

Tell your partner which flavor jellybean you think you ate and ask if you were correct



What Do You Taste?

You should notice that figuring out the flavor of the jellybean is much easier when you can use both your mouth AND your nose together!

Why?

Because your mouth has taste buds and your nose has lots of things called 'receptors' that grab odor molecules that send information to your brain to help you figure out what you are eating



7

Clean up your experiment

Put away the blind fold and store all of the uneaten jellybeans in a safe place until next time

You might also want to brush your teeth 😊

Repeat the Experiment

To do a true repeat of the experiment you need to do it the exact same way again and compare the results of your first experiment with your second experiment.

Repeat the Experiment – But with a Twist!

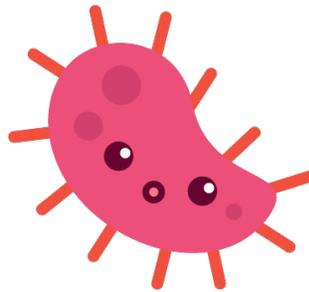
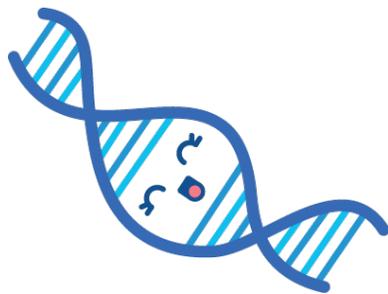
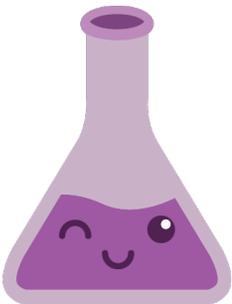
To answer even more questions, how could you do the experiment differently?

- Use different kinds of jellybeans
- Try this with a friend – you can be the partner and ask your friend to do the experiment
- Try it with people of different ages – does age change the experiment?
- What would happen if you use foods that have the same texture but different tastes? You cut a potato into cubes and an apple into cubes – what happens?



Taste Test 1	Correct Flavor	Guessed Flavor	Total Correct
Closed Eyes Taste			
Closed Eyes and Plugged Nose Taste			
Closed Eyes Smell			

Taste Test 2	Correct Flavor	Guessed Flavor	Total Correct
Closed Eyes Taste			
Closed Eyes and Plugged Nose Taste			
Closed Eyes Smell			



Great Work!

