



<p>Description This activity is meant to extend your students’ knowledge of the topics covered in our DNA and Genetics lab. Through this activity, your students will be able to test their family for the PTC taster gene and compare to themselves.</p>		
<p>Grade Level 7-12</p>	<p>Student Outcomes Students will:</p> <ul style="list-style-type: none"> Engage in a critical discussion on their opinions regarding donating their bodies to a future Body Worlds exhibition. 	<p>Common Core ELA Standards</p> <ul style="list-style-type: none"> Grades 6-12: Writing W.7; Speaking and Listening SL.1b-e <p>Next Generation Science Standards</p> <ul style="list-style-type: none"> Disciplinary Core Idea Grades 6-8: LS3.A Inheritance of Traits
<p>Duration Two 60-minute sessions</p>		

Materials

- PTC paper strips and worksheet (provided by The Tech Interactive)

Vocabulary

Familiarity with these terms and concepts will enhance students’ experience in the activity.

- DNA (deoxyribonucleic acid):** The genetic material of living organisms, located in the chromosomes of each cell; the “blueprint” or “recipe” for life.
- Gene:** The basic physical unit of heredity.
- PTC (Phenylthiocarbamide):** A chemical compound that tastes either very bitter or no taste depending on the genetic makeup of the individual.
- Trait:** A genetically determined characteristic or condition, like hair-color, dimples, or sex.

Procedure

This activity is meant to be performed individually by the student with his or her family. Results should be brought back to the classroom for further analysis.

- Cut the PTC strip into small pieces; enough for each family member being tested.
- Have each family member put the piece of PTC paper on their tongue for 5 seconds. Family members should record their reaction on the form provided.
- Based on family member’s responses and personal response, students should be able to determine what their PTC gene combination is as well as their family members’.
 - Taste for PTC is a dominant gene.
 - No taste for PTC is a recessive gene.



Extended Learning

Are you a Super Taster? Super tasters are people who have more taste buds on their tongue than most, which means that food flavors are significantly stronger for Super Tasters. Does broccoli taste so bitter it makes you cringe? Is ice cream so sweet it's like eating a spoonful of pure sugar? Then you might be a Super Taster. Take the following test to find out!

What you need

- Cotton swab
- Blue food coloring
- [Plastic reinforcement ring sticker](#)
- Mirror

What to do

- Dab blue food coloring on the tip of your tongue with the cotton swab.
- Place the plastic reinforcement ring on the tip of your tongue.
- Look in the mirror. Count the number of pink bumps you see inside the ring. The bumps are the fungiform papillae. Each one contains hundreds of taste buds! If you count more than 25 bumps inside the ring, you're a supertaster!