

Name: _____

Activity 1: Odor Recognition/Aroma Testing Lab

Purpose:

The purpose of this lab is to challenge your sense of smell. You will examine how accurately you can identify common aromas by only their smell. This lab will also train you on how to compete in the aroma portion of the National FFA Food Science and Technology CDE.

- Do not taste samples.
- Do not inhale aromas. “Wave” the scent to your nose using your hand.

Directions:

When given permission, you will smell aromas to determine what they may be. Record your answers below. When finished, answer the post-lab questions.

Sample No.	Your Response/Guess	Identified Correctly? Yes or No	Actual Aroma

Post-Lab Questions:

- Which aromas did you find the most challenging to identify? Why?
- Which aroma was most often identified incorrectly? (Consider your classmates responses.)
- Is taste or aroma more important in food identification? Explain your answer:
- What role does aroma and flavor have in how consumer purchase different food products?
- How do you think food production companies leverage flavor and aroma preferences to increase consumer purchasing decisions?

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Activity 2: Taste Recognition/Triangle Testing Lab

Purpose: The purpose of this lab is to challenge your sense of taste. This lab will also train you on how to compete in the triangle testing portion of the National FFA Food Science and Technology CDE.

You will evaluate 5 different samples. Each of the five samples have 3 samples to try. Of the three samples, determine which one is different from the other two.

Directions: 5 different triangle tests are provided. Obtain 1 sample of each item provided. Be sure to set up your sample plate as directed by your teacher. Return to your seat. Identify the different samples through flavor, aroma, visual cues and/or textural differences.

For each test, you are to identify the one sample that is DIFFERENT from the other two.

Circle the correct number that represents the *different* sample.

TEST 1:

- a. 647
- b. 992
- c. 381

TEST 2:

- a. 716
- b. 433
- c. 250

TEST 3:

- a. 521
- b. 688
- c. 954

TEST 4:

- a. 182
- b. 825
- c. 293

TEST 5:

- a. 341
- b. 976
- c. 258

Post-Lab Questions:

- Which test did you find the most challenging to identify? Why?
- Which product was most often identified incorrectly? (Consider your classmates responses.)
- How do you think flavor and aroma impact each other in overall food product selection?

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Activity 3: Imitation Apple Pie

Purpose: This lab will test the theory that human senses can be fooled. Food chemists create food products that look and taste just like the real thing but are imitations! Did you know, the first frozen lemon pies did not contain lemon nor eggs! This lab will compare the taste of a real apple pie to the taste of an imitation apple pie.

Supplies Needed:

- Oven (a way to bake two full-sized pies)
- 2-quart saucepan, 1 per group
- Stove or hotplates
- Disposable forks
- Mixing spoon and spatula/wooden spoon
- Paper plates
- 2 mixing bowls per group
- 1 frozen apple pie — crumb-topping kind only (the real apple pie)

Imitation Pie:

- 500 ml water
- 375 ml sugar
- 7 ml cream of tartar
- 36 round snack crackers (Ritz work best)
- 1 pie crust + pie pan
- 5 ml cinnamon
- 1 ml nutmeg
- 30 ml margarine/butter

Crumb Topping:

- 125 ml flour
- 125 ml brown sugar
- 2 ml cinnamon
- 45 ml margarine/butter

Procedure:

1. Heat water to boiling in a 2-quart saucepan.
2. Mix sugar with cream of tartar.
3. Add this mixture to the boiling water. Turn heat down to low.
4. Add round snack crackers to the mixture, one at a time.
5. Simmer gently for 3 minutes. Do not stir!
6. Pour this mixture into a pastry-lined pie pan.
7. Sprinkle with cinnamon and nutmeg.
8. Dot lightly with slices of margarine or butter.
9. Cover with the crumb topping.
10. Bake at 400°F for 30 minutes or until the filling is bubbly.

*NOTE: Bake REAL apple pie at the same time (notice potential different baking times).

Crumb Topping:

1. Use a fork or pastry blender to combine flour, brown sugar and cinnamon in a mixing bowl.
2. Cut in margarine or butter. Mixture should resemble coarse crumbs.
3. Sprinkle evenly over the top of the pie filling.

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Carefully examine a sample of each pie. Record your observations in the table below:

Observations	Real Apple Pie	Imitation Apple Pie
Flavor		
Texture		
Aroma		
Color		

Post-Lab Questions:

1. Convert the metric measurements in this experiment to English using the following equivalents: 250 ml = 1 cup; 5 ml = 1 teaspoon.
500 ml water
375 ml sugar
7 ml cream of tartar
5 ml cinnamon
1 ml nutmeg
30 ml margarine/butter
125 ml flour
125 ml brown sugar
2 ml cinnamon
45 ml margarine/butter
2. How did the two pies compare in terms of color, aroma and texture? Be specific:
3. What flavors could you detect in the imitation apple pie?
4. Which pie was your favorite and why?

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Exit Ticket: Sensory Preferences

Purpose:

This worksheet will help you analyze factors that affect your food preferences. You will complete the first 2 columns regarding your food preferences (Example: your favorite beverage, your least favorite beverage). You will then interview 2 other people you live with, or are related to, for the 2 far-right columns. Once you have completed the chart, answer the questions below.

Food Category	My Most Favorite	My Least Favorite	Most Favorite of Family Member/Roommate/Other Person in My Home	Least Favorite of Family Member/Roommate/Other Person in My Home
Beverage				
Vegetable				
Cake				
Candy				
Cookie				
Fruit				
Ice Cream				
Meat				
Pie				
Snack Food				
Soft Drink				

1. What similarities and differences did you discover between your most and least favorites and the people you interviewed? Where any of them the same? Any explanation as to why they may have been the same?

2. In what ways do you think your family affects your food preferences, and why?