

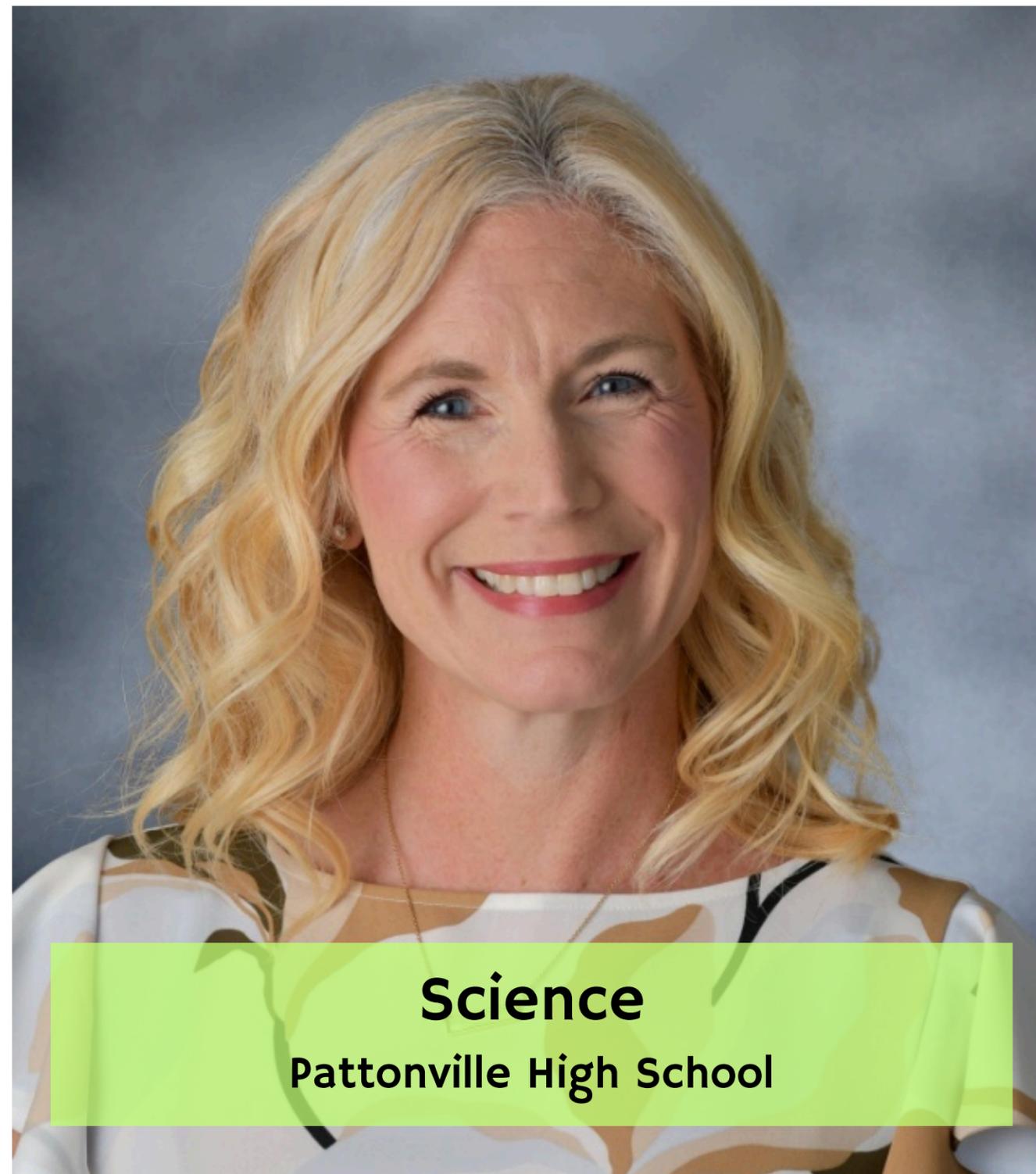
33rd Annual Missouri Coordinated School
Health Coalition Conference

Where Taste Meets Technique:

**A CULINARY ARTS AND
APPLIED SCIENCES
COLLABORATION**

Amy Schwendemann and Madison Avery
Pattonville High School
St. Louis, MO

introducing
AMY
SCHWENDEMANN



Science
Pattonville High School

introducing
**MADISON
AVERY**



Family Consumer Sciences
Pattonville High School

PATTONVILLE HIGH SCHOOL



- Maryland Heights, MO
- Student population ~2,000
- Most diverse high school in Missouri
- ~50% Free and Reduced Lunch
- Lambert International Airport, Hollywood Casino and Amphitheater, World Wide Technology Main Campus in taxable area
- One to one Apple Education

HOW ARE WE HERE TOGETHER?

- E Wing
- Missouri Healthy Schools Grant
- Fall 2024: presented with a challenge to address changes in nutritional guidelines in school cafaterias
- Generated idea to create and implement a spice blend for students to improve flavor while complying with updated nutrition standards
- Opportunity to strengthen our backpack program as demands increase

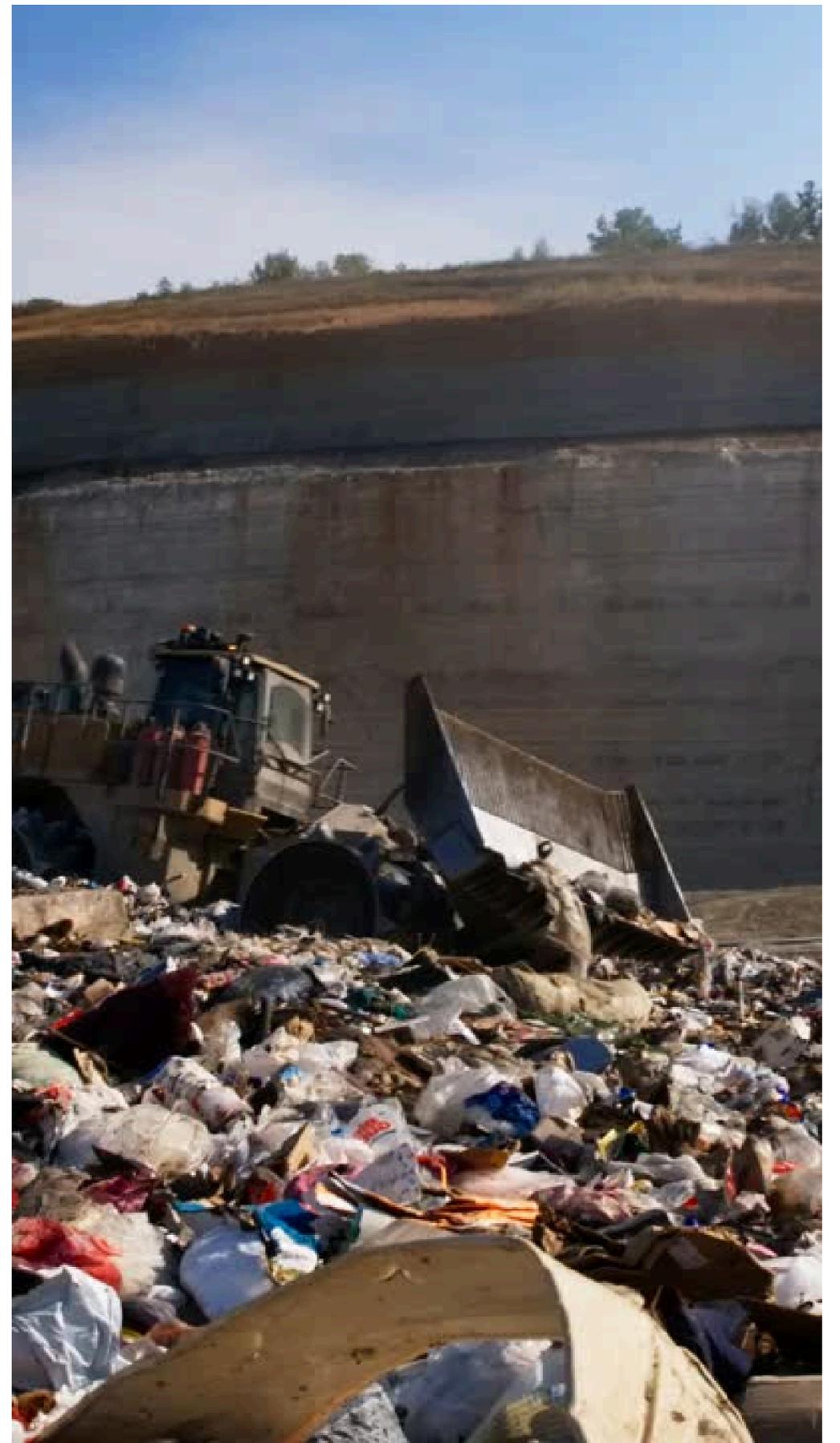


MARYLAND HEIGHTS & WASTE CONNECTIONS SUSTAINABILITY CAMPUS

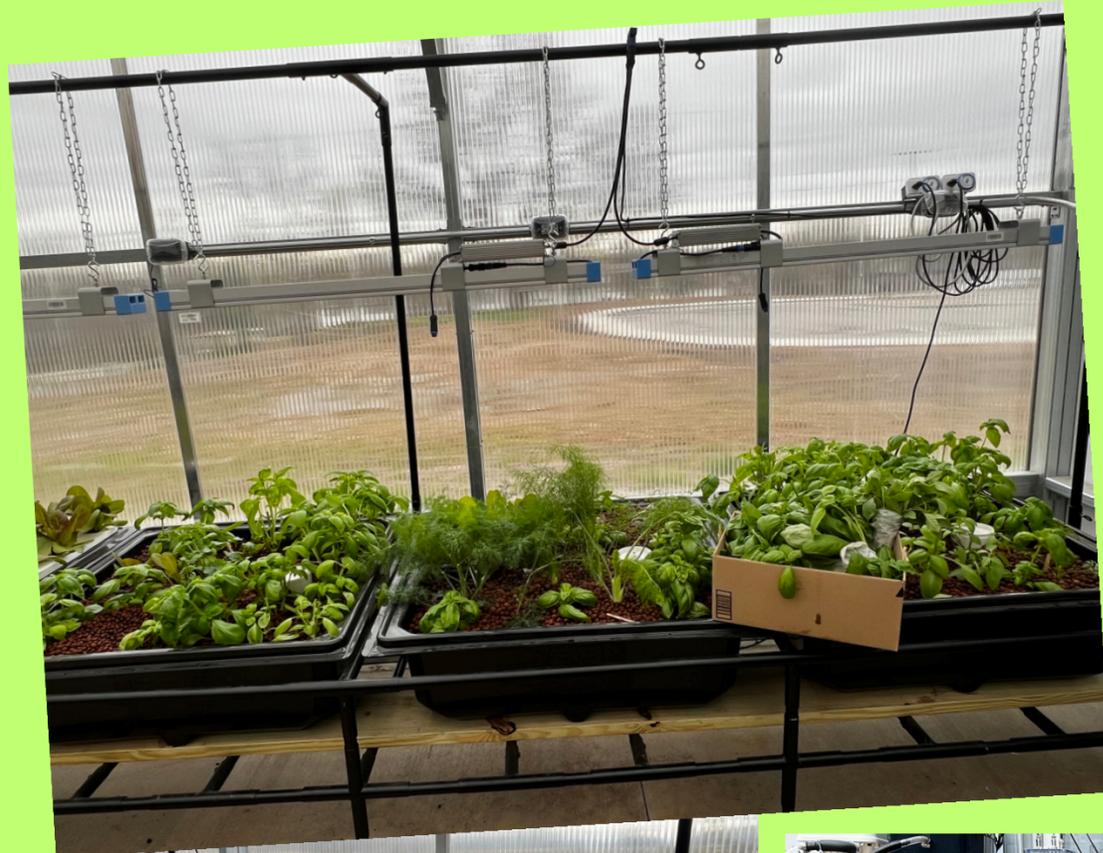
- Opened Fall 2023
- 2 minute walk from Pattonville High School campus
- Community educational partnership



MARYLAND HEIGHTS & WASTE CONNECTIONS SUSTAINABILITY CAMPUS



AQUAPONICS & HYDROPONICS



Aquaponics

- Located in the greenhouse
- Alternative growing method that does not require soil.
- Uses fish to provide the nutrients for the plants

Hydroponics

- Located in the E wing hallway
- Alternative growing method that does not require soil
- Must add nutrients for the plants

THE SCIENCE BEHIND FREEZE DRYING VS DEHYDRATING



Taste time! As you try your bananas, consider **intensity of flavor**

Freeze Dryers

- Science of Freeze Drying vs Dehydrating
- Maintains about 90% nutritional value
- Maintains the shape of the food
- Provides longer shelf life
- Can freeze dry almost anything

Dehydrators

- Best for herbs
- Does not hold original shape
- Maintains about 60-70% nutritional value

Pattonville's **CULINARY ARTS PROGRAM**

- Largest public school FCS Department in the state
- Industry Recognized Credentials



The **SPICE UNIT**

Objective

- Design a custom spice blend to mix into a dip base, demonstrating the ability to balance flavors, evaluate taste through structured peer feedback, and understand the differences in flavor intensity and application between dried and fresh spices and herbs.

1 Seasoning gallery walk

2 Greenhouse grown spice processing

3 Custom blend creation

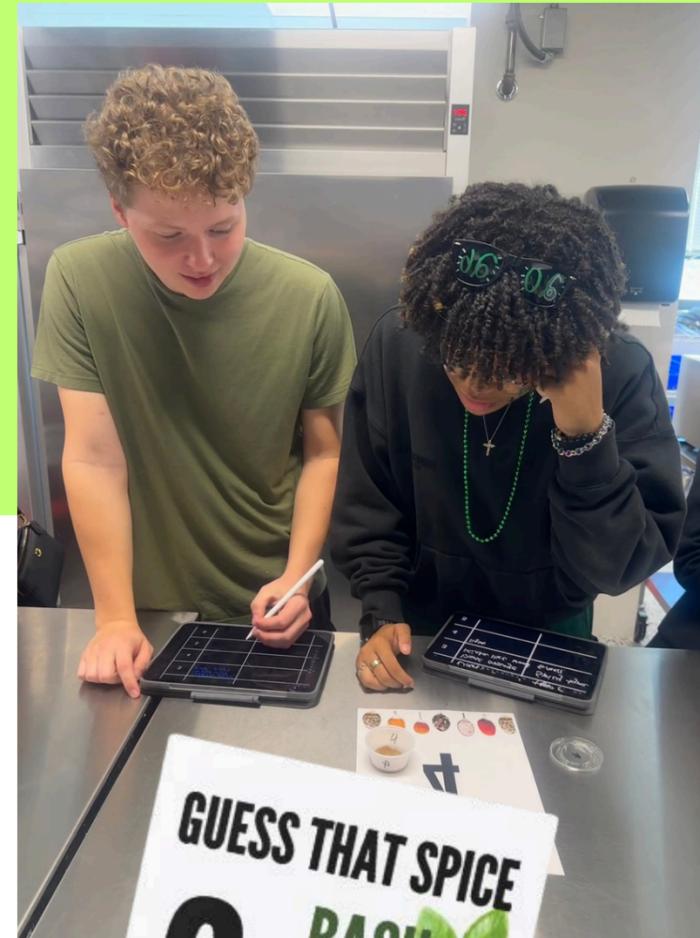
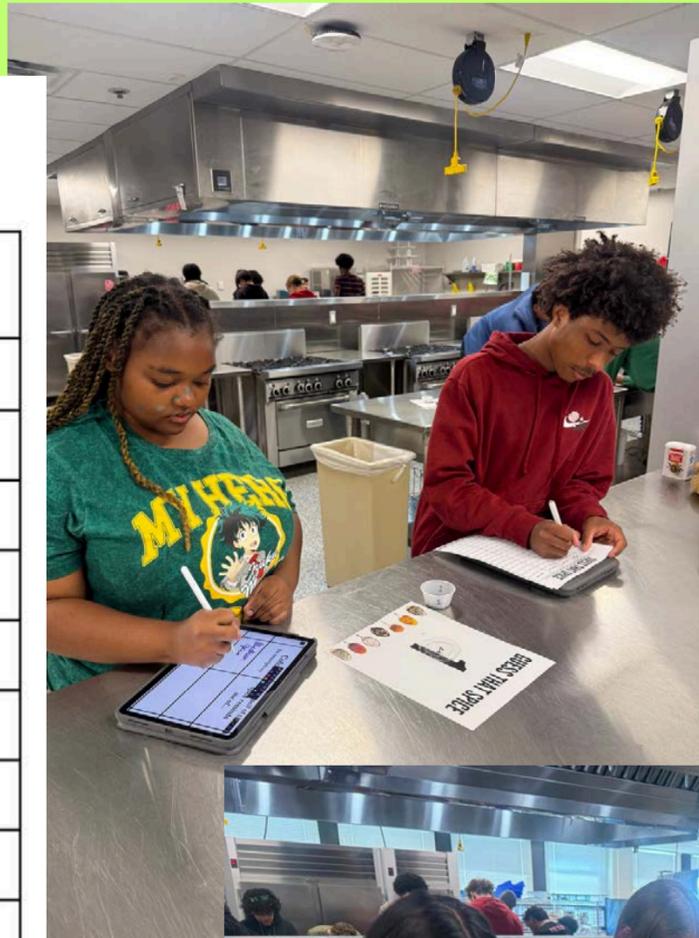
4 Peer evaluate

SPICE GALLERY WALK

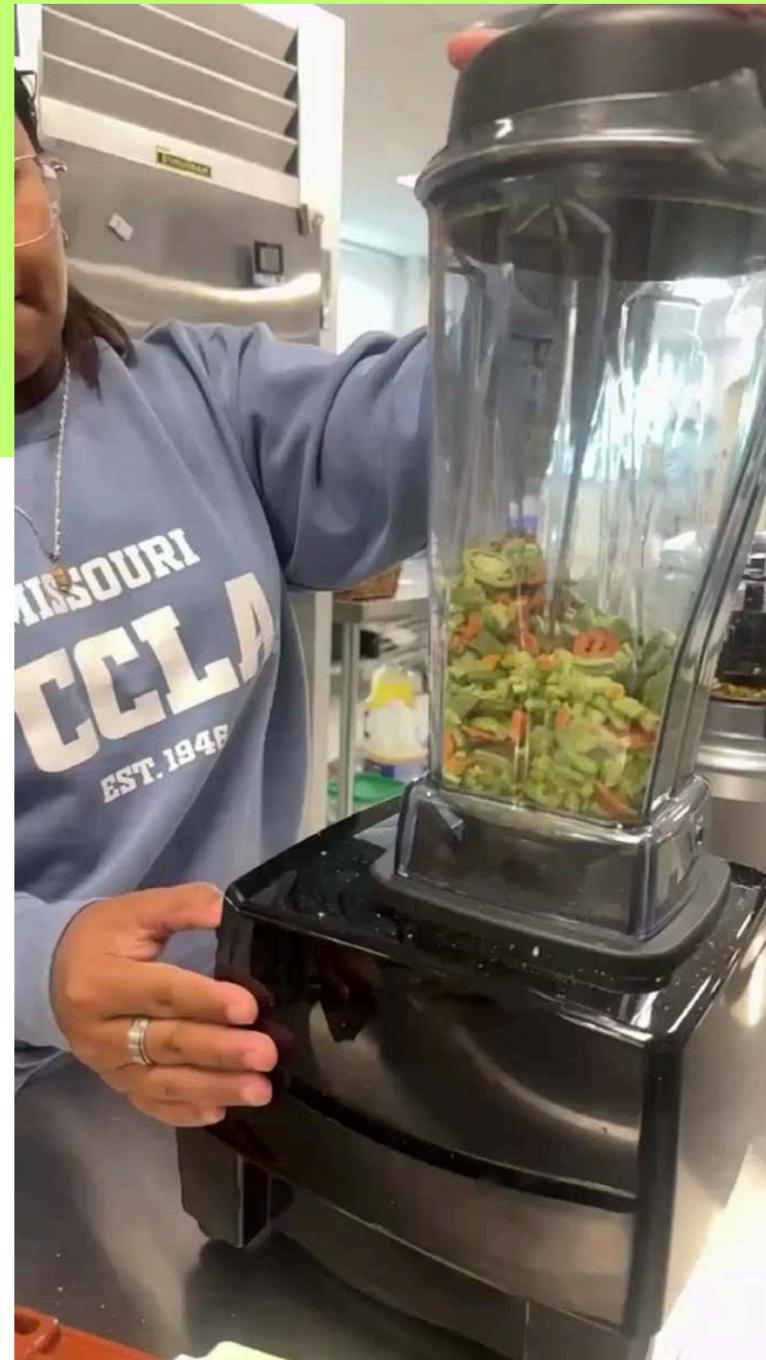
GUESS THAT SPICE

Using scent and sight only, guess what spice you think each sample might be.

	Color (be descriptive)	The smell of this spice reminds me of...	My guess	Correct answer	Flavor notes
1	green, brown, purple	The grass in the cups I collected	thyme	THYME	• Slightly minty • Umami • Peppery
2	The same as above, smaller	The same but spicier and citrus	No idea	BASIL	• Sweet • Fresh • Bright
3	orange like crushed hot mustard	Brown sugar but spicy	tajime	CAJENNE	• Fiery heat • Sharp • Slightly smoky
4	Sandy	Crushed pop corn kernels	popcorn	CELERY SEED	• Concentrated Celery Flavor
5	Chili Powder	Taco Seasoning	Tacos Seasoning	CHILI POWDER	• Mild heat • Smoky
6	Sage	Dead trees	Basil leaf	CILANTRO	• Citrusy • Slightly bitter
7	Autumn Grass	Earth, my great Aunt's farm	NO GUESS	OREGANO	• Herbal • Warm • Adds depth
8	Red ants	Chicken	Peperka	PAPRIKA	• Smoky • Sweet • Mild
9	light & dark brown	Nana's house on Sunday	no guess	NUMEG	• Nutty • Hint of Clove & Cinnamon
10	TAN	Lemon	ginger	GINGER	• Zesty • Warm • Citrusy undertones
11	brown	Cinnamon, warm	Cinnamon	CINNAMON	• Sweet • Warm • Woody
12	Yellow	Lemon pepper wings	Lemon Pepper	CORRIANDER	• Citrusy • Slightly Sweet • Earthy
13	Hay dust	The fajitas we made	Fajita Seasoning	CUMIN	• Smoky • Slightly spicy • Nutty
14	Earth green	Butter popcorn	ILK	DILL	• Tangy • Greasy • Slightly sweet
15	Bright yellow	NO CLUE	TURMERIC	TURMERIC	• Mild pepper • Warm • earthy



GREENHOUSE GROWN PROCESSING



SPICE BLEND CREATION

SPICE BLEND LAB PLAN Name _____ Hour 1st Kitchen# 1

Objective: Design a custom spice blend to mix into a dip base, demonstrating your ability to balance flavors and evaluate taste through peer feedback

Start with the end in mind: what are your flavor goals for your spice blend?
Creamy, herby, garlic, mild enough for everyone to enjoy/Still good

Desired flavor balance on a scale of 1-5 (5 = intense flavor) 20

Salty 3 Sweet 1 Spicy 1 Bitter 1 Sour/Tangy 2 Umami 4

The spice blend we created is called
Zesty Lester Sauce

Draft Spice Blend Spice Name	Amount	Flavor Contribution (spicy, sweet, earthy, etc.)	Total amount this blend makes:
<i>Garlic Powder</i>	<i>1 tsp</i>	<i>Savory, rich flavor</i>	<i>3 1/2 teaspoons</i> <small>(cannot exceed 2 tablespoons)</small>
<i>Onion Powder</i>	<i>2 tsp</i>	<i>Mild, sweet herb and depth</i>	
<i>Dried Parsley</i>	<i>1 tsp</i>	<i>Fresh, herby note</i>	
<i>Dried Basil</i>	<i>2 tsp</i>	<i>Bright, tangy herb flavor</i>	
<i>Salt</i>	<i>1/2 tsp</i>	<i>Enhanced overall taste</i>	
<i>Black Pepper</i>	<i>2 tsp</i>	<i>Mild spice and cream</i>	
<i>Ground Cumin</i>	<i>1 tsp</i>	<i>Earthy</i>	

Short Description (1-2 sentences, like you'd see on a spice jar) Example: "A smoky-sweet blend with a kick"
A Savory Garlic Herb Blend

Ingredients

- 2* amount *tsp* unit of measure of *Savory Garlic Herb Blend* title of spice blend
- 1 cup sour cream
- 1 cup mayonnaise

Preparation
 Combine all ingredients in a mixing bowl, refrigerate overnight and serve chilled. Enjoy with crackers!

Preparation Equipment	Mixing Equipment
<i>Mixing Spoons</i> <i>Small bowl</i> <i>Spoon or whisk</i>	<i>Mixing Bowl</i> <i>Rubber Spatula</i>



PEER EVALUATION



1ST HOUR Spice Blend Lab Peer Evaluation

You will fill this form out a total of 6 times, one time for each dip.

Your email will be recorded when you submit this form.

* indicates required question

Which kitchen are you evaluating? *

Choose

- K1
- K2
- K3
- K4
- K5
- K6



2ND HOUR Spice Blend Lab Peer Evaluation

You will fill this form out a total of 6 times, one time for each dip.

Your email will be recorded when you submit this form.

* indicates required question

Which kitchen are you evaluating? *

Choose

- K1
- K2
- K3
- K4
- K5
- K6



7TH HOUR Spice Blend Lab Peer Evaluation

You will fill this form out a total of 6 times, one time for each dip.

Your email will be recorded when you submit this form.

* indicates required question

Which kitchen are you evaluating? *

Choose

- K1
- K2
- K3
- K4
- K5
- K6

The **WINNING
SPICE
BLEND**

SHIPWRECK SPICE

- 2 tablespoons chili powder 
- 2 teaspoons ground cumin 
- 1 teaspoon garlic powder
- 1 teaspoon onion powder
- 1 teaspoon smoked paprika
- $\frac{1}{4}$ teaspoon cayenne pepper 

Strengthening
**PATTONVILLE'S
BACKPACK
PROGRAM**



Beyond COLLABORATION



Because teens eat dinner before dinner

- 1 In a microwave safe container, heat 1 cup water for 2 minutes.
- 2 Pour hot water over soup and place lid on the container, Wait 5 minutes.
- 3 Stir soup for 60 seconds and enjoy!

Nutrition Facts	Amount/serving		% Daily Value*	
1 servings per container	Total Fat 11g	14%	Total Carbohydrate 31g	11%
Serving size 1 Container	Saturated Fat 6g	30%	Dietary Fiber 3g	11%
Calories per serving 250	Trans Fat 0g		Total Sugars 5g	
	Cholesterol 40mg	13%	Includes 0g Added Sugars	0%
	Sodium 830mg	36%	Protein 10g	20%
	Vitamin D 0mcg	0%	Calcium 104mg	8%
	Potassium 517mg	10%	Iron 1.26mg	8%

Ingredients: Vegetable broth, russet potatoes, carrots, celery, onion, milk, heavy cream, cheddar cheese, flour, parsley, cajun spice blend (paprika, cayenne pepper, garlic powder, onion powder) salt, pepper. Allergen warning: contains milk

FIRST DINNER QUICK CUP
Potato Soup
 12 oz

Because teens eat dinner before dinner

- 1 In a microwave safe container, heat 1 cup water for 2 minutes.
- 2 Pour hot water over soup and place lid on the container, Wait 5 minutes.
- 3 Stir soup for 60 seconds and enjoy!

Nutrition Facts	Amount/serving		% Daily Value*	
1 servings per container	Total Fat 11g	14%	Total Carbohydrate 31g	11%
Serving size 1 Container	Saturated Fat 6g	30%	Dietary Fiber 3g	11%
Calories per serving 250	Trans Fat 0g		Total Sugars 5g	
	Cholesterol 40mg	13%	Includes 0g Added Sugars	0%
	Sodium 830mg	36%	Protein 10g	20%
	Vitamin D 0mcg	0%	Calcium 104mg	8%
	Potassium 517mg	10%	Iron 1.26mg	8%

Ingredients: Vegetable broth, russet potatoes, broccoli, carrots, celery, onion, milk, heavy cream, cheddar cheese, flour, parsley, cajun spice blend (paprika, cayenne pepper, garlic powder, onion powder) salt, pepper. Allergen warning: contains milk

FIRST DINNER QUICK CUP
Broccoli Cheddar
 12 oz

Sounds fun, right?

YOUR TURN!

ALLERGEN WARNING

Wheat

Soy

Milk

Egg

SHIPWRECK SPICE

2 tablespoons chili powder 🌶️

2 teaspoons ground cumin 🌶️

1 teaspoon garlic powder

1 teaspoon onion powder

1 teaspoon smoked paprika

¼ teaspoon cayenne pepper 🌶️🌶️🌶️

In your bag: dip base (mayonase and sour cream), Shipwreck Spice blend, spoon, crackers.

Spice blends: knowing what you know about the intensity of flavor, how bold do you want your dip to be?

Before you add: actually consider the intensity of flavor you'd like your final product to have and see if you can acheive it! Adjust as necessary.

Enjoy!

Thank You!
QUESTIONS



@pattonvillefcs



@pattonvillesd



@wcsustainabilitycampus