READY, SET, GROW! GARDEN JOURNAL

6-8

BIG GREEN
REAL FOOD GROWS HERE

Essential Question

WHAT CAN I LEARN ABOUT PLANTS IN THE GARDEN?

- I can explain how plants are part of a healthy diet.
- I can explain how a garden can provide a wide variety of healthy foods.
- I can gather evidence to support a claim.
- I can analyze evidence and explain how the evidence supports a claim.

Vocabulary	Illustration/Example	Definition
CLAIM		A conclusion about a problem. Answers: What do you know?
EVIDENCE		Data that is sufficient and appropriate to support the claim. Answers: How do you know it?
REASONING		A justification that shows why your evidence supports the claim. Answers: Why can this evidence be used in support of the claim?
SAMPLE CLAIM	Select one: • Plants are an essential part of a healthy diet. • Plants are used by people from all cultures, including my own, to maintain a healthy diet. • Eating a variety of plants and plant parts is necessary to get the most nutritional benefits.	
SAMPLE EVIDENCE		
SAMPLE REASONING		

INVESTIGATION: Plants from the garden can provide much of what I need in a healthy diet.

What evidence is provided about my claim in the article?	
What evidence is provided about my claim in the nutrition labels?	
SUMMARY: Write a summary statement or statements that explain how the evidence you gathered supports the claim for this investigation.	

Essential Question

WHAT CAN I LEARN ABOUT SEEDS IN THE GARDEN?

- I can explain the role seeds play in the life cycle of a plant.
- I can classify seeds into monocot and dicot based on evidence I observe.

What do you already know about seeds?

Vocabulary	Illustration/Example	Definition
SEEDS		The part of a plant that contains all of the necessary materials and information for plant life.
COTYLEDON		One or more leaves contained in a seed.
DICOT DI-COT		A seed that has two cotyledons and produc-es other unique plant features.
MONOCOT MON-O-COT		A seed that has one cotyledon and produces other unique plant features.
SEED COAT		Protects the seed from insects, disease, and moisture.
What structures do seeds have that support the beginning of a plant?		
What parts of the plant can be used to predict whether a plant's seed was dicot or monocot?		
How can seeds be used to support a healthy diet?		

What evidence can I gather in the garden to classify a plant as a monocot or dicot?

Plant 1:

Roots	Stems	Leaves	Flowers

Classification:

Plant 2:

Roots	Stems	Leaves	Flowers

Classification:

Plant 3:

Roots	Stems	Leaves	Flowers

Classification:

Plant 4:

Roots	Stems	Leaves	Flowers

Classification:

SUMMARY: Write a summary statement or statements that explain how the evidence you gathered supports the claim for this investigation.

Essential Question

WHAT CAN I LEARN ABOUT SEEDS IN THE GARDEN?

Vocabulary	Illustration/Example	Definition
SEED		
DISPERSAL		
What ways can seeds be dispersed?		
What do seeds need to survive?		

PROCEDURE:

1. Look at all the seeds available at your lab station.
2. Select each seed and observe it. Create an illustration of each seed.
3. Attempt three tests on each seed:
    a. Use air: Blow on the seed to see if and how far it will travel.
    b. Use water: Place the seed in a beaker of water to see if it will float.
    c. Use fur: Place the seed on the fur to determine if it sticks.
4. If none of the methods above seem correct, examine the seed structure further to make a
5. hypothesis about how else the seed may be dispersed.
6. Record evidence for any claims for seed dispersion.
7. Clean lab station as directed by the teacher.

Seed 1. Record the name of the plant if possible:

Description/Illustration	Type of Seed Dispersion	Evidence for Claim

Seed 2. Record the name of the plant if possible:

Description/Illustration	Type of Seed Dispersion	Evidence for Claim

Essential Question

WHAT CAN I LEARN ABOUT SEEDS IN THE GARDEN?

Seed 3: Record the name of the plant if possible:		
Description/Illustration	Type of Seed Dispersion	Evidence for Claim
Seed 4: Record the name of the plant if possible:		
Description/Illustration	Type of Seed Dispersion	Evidence for Claim
Seed 5: Record the name of the plant if possible:		
Description/Illustration	Type of Seed Dispersion	Evidence for Claim

SUMMARY: CER - Use complete sentences.
Write a claim about how plants use seed structures to ensure reproduction is successful.

Evidence 1:

Evidence 2:

Evidence 3:

Reasoning: Provide a reason that shows the evidence provided supports the claim.

Essential Question

HOW CAN SEEDS HELP ME BE HEALTHY?

Day 1:

1. Review the mentor recipe if provided.
2. Review the Cost Calculator Chart in The Garden Journal.
3. Determine five to seven ingredients you will use for your recipe. You must have:
    a. At least one seed
    b. At least one grain (oat or rice)
    c. One sweetening agent
    d. One binding ingredient
4. (Spices do not count as ingredients.)
5. Complete the additional nutrition information section using the resources provided on the Cost Calculator Chart.
5. With your group, determine the proportions of each ingredient you will need to create four servings (you will offer eight half-sized portions). This is your recipe!
6. Record recipe in the space below.
7. Calculate the cost and nutritional value of your recipe and record them.

Day 2:

1. Create 8 half-size portions. Four portions are for your group; four portions may be sampled by other students.
2. Select two to four other stations to sample from and complete a tasting rubric for each.
3. Clean the station with your group members.
4. Complete the reflection/summary in your Garden Journal.

Recipe:	
Cost per serving:	Estimate the cost per serving of each ingredient by using the following formula: Number of servings for each ingredient in the recipe X the cost of each serving = Ex: 2 servings of almonds (½ cup) X $0.40/serving = $0.80 for the recipe

Nutrition per serving	Estimate the nutritional value of your recipe per serving Number of servings of each ingredient used X value per serving listed on the nutrition label = nutritional value Ex: 2 servings of almonds X 163 calories = 326 calories/recipe Calories per serving: Total calories for the recipe ÷ 4 = _____ List any other nutritional considerations (you do not have to calculate values for each one). Ex: Almonds contain 9 grams of monounsaturated fat, 6 grams of protein, and are a good source of vitamin E, magnesium, and manganese.

SUMMARY: What did you learn about seeds as part of a healthy diet? What was challenging in this activity and/or for people to be able to use seeds in their diets? Were there any barriers to this lab for some members of the class? How does that play out in real life or with others you know?

Essential Question

HOW CAN SEEDS HELP ME BE HEALTHY?

Product	Serving Size *estimated	Calories per Serving	Other Nutrients per Serving	Cost per Serving
Walnuts	1/4 cup	183		$0.45
Pistachio	1/4 cup	156		$0.39
Peanuts	1/4 cup	166		$0.10
Almonds	1/4 cup	163		$0.40
Chia Seeds	2 3/4 cup	137		$0.28
Flax Seeds	1 Tbsp	55		$0.15
Rolled Oats	1/2 cup	80		$0.12
Puffed Rice	1 cup	56		$0.15
Peanut Butter	2 Tbsp	193		$0.15
Sunflower Butter	2 Tbsp	200		$0.38
Raisins	1/4 cup	85		$0.16
Chocolate Chips	1/8 cup	70		$0.51

- For ingredients not included here try searching on:
- Walmart for cost per ounce.
- USDA - FoodData Central for nutrition information including calories, vitamins, minerals, sugar, and fat.

TASTING RUBRIC

Criteria	Beginning (1)	Acceptable (2)	Recommended (3)	Award-Winning (4)
NUTRITION VALUE	Recipe has some elements of the chef's plate but also has some ingredients that are less healthy choices.	Recipe uses mostly healthy foods but does not include all elements of the chef's plate or they are not in the recommend-ed portions.	Recipe uses ingredients that are healthy and it contains foods from the chef's plate in correct portions.	Recipe uses all healthy ingredients and the proportions are nearly the same as what is recom-mended on the chef's plate.
TASTE AND PRESENTATION	The recipe is good to try but not something I would choose again.	The recipe is good. I would eat it again, but it could be improved.	This recipe is something I would select again.	The recipe is delicious and presented well. I would recommend or make it for others.
TOTALS				

Essential Question

WHAT CAN I SHARE WITH OTHERS ABOUT THE IMPACT OF AND BARRIERS TO HEALTHY EATING?

Cost: Something given up to gain something else. Ex: The cost of a head of kale is $2.	Benefit: Something gained through a decision. Ex: Kale is among the most nutrient-dense foods available, providing many vitamins and minerals for very few calories.

Use the texts to find reasons supporting both sides of this discussion.

Healthy eating is too expensive.	**Healthy eating is not too expensive.**

SUMMARY: Who in my family or neighborhood can I share this information with this week? What are the most important ideas for me to tell them? How does what I learned about seeds connect with the discussion about access to healthy food choices?

Essential Question

WHAT CAN I LEARN ABOUT ROOTS IN THE GARDEN?

- I can explain the role roots play in the life cycle of a plant.
- I can use observations to make predictions about what types of roots plants in the garden have.
- I can make predictions about how root structures are related to the needs of plants.

What do you already know about roots?

Vocabulary	Illustration/Example	Definition
ROOTS		The part of the plant that provides an anchor and takes up water and nutrients that the plant needs to grow.
TAPROOTS TAP-ROOTS		A roots system where there is one larger root and many other smaller roots.
FIBROUS ROOTS FIB-ROUS		A root system where there are many roots that are the same or similar size.
OSMOSIS OS-MO-SIS		The process by which molecules of a solvent pass through a semiper-meable membrane (some cells can pass through; others cannot) from an area of higher concentration to lower concentration.
What structures do roots have that help them support the **growth** of a plant?		
What roots can be eaten as part of a healthy diet?		

Essential Question

WHAT CAN I LEARN ABOUT ROOTS IN THE GARDEN?

What evidence can I gather in the garden to determine if a plant has a taproot or fibrous root system?

Plant 1:

Type of seed:

Other evidence that would help determine the root structure:

Classification prediction:

Plant 2:

Type of seed:

Other evidence that would help determine the root structure:

Classification prediction:

Plant 3:

Type of seed:

Other evidence that would help determine the root structure:

Classification prediction:

Plant 4:

Type of seed:

Other evidence that would help determine the root structure:

Classification prediction:

SUMMARY: How do the root structures of plants relate to other parts of the plant?

Essential Question

WHAT CAN I LEARN ABOUT ROOTS IN THE GARDEN?

PROCEDURE:

1. Pour 100 ml water into each beaker.
2. Add 1 Tbsp Of salt to one beaker and 3 Tbsp of salt into another beaker. One beaker contains no added salt.
3. Slice potatoes into three even slices. Cut each slice into squares that are all the same dimensions. Cut squares in half. (If using a cork borer, do the same procedure to make two equal-sized tubes for each beaker.)
4. Add both halves of each slice to each beaker. Each beaker will have two equal-sized potato parts.
5. All potatoes sit in solution for 20 minutes.
6. Record data for each potato in the data chart below.
7. After data is recorded, discard potatoes and solution.

Data:

Beaker 1: No Salt	Beaker 2: 1 Tbsp Salt	Beaker 3: 3 Tbsp Salt
Color:	Color:	Color:
Measurements Length: Width: Weight:	Measurements Length: Width: Weight:	Measurements Length: Width: Weight:
Description: Turgid (stiff/crisp) Flaccid (puffy/soft)	Description: Turgid (stiff/crisp) Flaccid (puffy/soft)	Description: Turgid (stiff/crisp) Flaccid (puffy/soft)
Other Observations:	Other Observations:	Other Observations:

In the space provided, or on separate paper create a data table to record the results of the experiment:

Essential Question

WHAT CAN I LEARN ABOUT ROOTS IN THE GARDEN?

How does your data demonstrate the concept of osmosis?	
How does the osmosis process help plants get what they need?	

Making Predictions: Based on what you know about how roots function, explain what humans might gain from eating roots and what we might need to be cautious about when eating roots.

SUMMARY: How do the root structures of plants relate to other parts of the plant? Use the CER format to support a claim based on the data collected above and other observations you have made.

Claim:

Evidence 1:

Evidence 2:

Evidence 3:

Reasoning:

Essential Question

HOW CAN ROOTS HELP ME BE HEALTHY?

KITCHEN INVESTIGATION

Preparing roots I like to eat.

RECIPE:

4 cups of root vegetable straws (sliced evenly)
1-2 tablespoons of olive oil
Pinch of salt/pepper
Other seasonings of your choosing (rosemary, basil, garlic, onion, thyme, chili pepper, oregano)

PROCEDURE:

1. Wash hands and ensure cooking area is clean.
2. Preheat oven to 425 degrees.
3. Line a baking sheet with foil or parchment.
4. Peel the root vegetable with a vegetable peeler or knife.
5. Slice vegetable into half-inch square sticks.
6. Use a paper towel to blot moisture off of vegetables.
7. Place vegetable straws in a bowl and toss with 1 Tbsp of olive oil.
8. Add salt, pepper, and other seasonings as available and toss again.
9. Spread vegetable straws onto baking sheet so there is only one layer.
10. Bake for 20-25 minutes at 425 degrees.
11. Remove from oven.
12. Using a spatula and oven mitt, transfer vegetable sticks to a plate lined with paper towels.
13. Blot off excess oil.
14. Serve topped with chives or other herbs.
15. Prepare tasting samples for the class (four for the group, four for others).
16. Place Nutrition Card for ingredients out with sample as available.
17. Using the cooking rubric, sample one or two recipes offered by other groups and rate the recipe for the team.
18. Clean the prep area and cooking materials.

SUMMARY: What can I share with someone I care about to help them make root vegetables a part of their healthy diet?

TASTING RUBRIC:

Criteria	Beginning (1)	Acceptable (2)	Recommended (3)	Award-Winning (4)
NUTRITION VALUE	Recipe has some elements of the chef's plate but also has some ingredients that are less healthy choices.	Recipe uses mostly healthy foods but does not include all elements of the chef's plate or they are not in the recommend-ed portions.	Recipe uses ingredients that are healthy and it contains foods from the chef's plate in correct portions.	Recipe uses all healthy ingredients and the proportions are nearly the same as what is recom-mended on the chef's plate.
TASTE AND PRESENTATION	The recipe was good to try but not something I would choose again.	The recipe is good. I would eat it again, but it could be improved.	This recipe is something I would select again.	The recipe is delicious and presented well. I would recommend or make it for others.
TOTALS				

Essential Question

WHAT CAN I SHARE ABOUT ROOTS IN THE GARDEN?

Region 1: What roots are eaten as a part of the diet?	
Region 2: What roots are eaten as a part of the diet?	
Region 3: What roots are eaten as a part of the diet?	
How can those roots be used to make food? Select one or two roots and locate a recipe from an online search or database. Provide a link or print the recipe.	

SUMMARY: What can I share with someone I care about to help them make root vegetables a part of their healthy diet?

Essential Question

WHAT CAN I LEARN ABOUT STEMS IN THE GARDEN?

- What do you already know about stems?

Vocabulary	Illustration/Example	Definition
STEM		The part of a plant that transports water, nutrients, and food to the entire plant.
XYLEM (XY-LEM)		Plant tissue that moves water and nutrients from the roots to the leaves.
PHLOEM (PHLO-EM)		Plant tissue that moves food from the leaves to the rest of the plant.
CAMBIUM		Cells that make new xylem/phloem as the plant grows.
EPIDERMIS		Exterior of the stem that provides protection and minimizes water loss.
AERIAL STEMS		Stems that grow above the ground.
SUBAERIAL STEMS		Stems that grow across or parallel to the ground (runners and suckers).
UNDERGROUND STEMS • Rhizomes • Tubers • Bulbs		Stems that grow below the surface and can sometimes be confused with roots.

What structures do stems have that help them support the growth of a plant?

What stems can be eaten as part of a healthy diet?	
GARDEN INVESTIGATION	What evidence can I find to show that all stems have some similar structures, but also have unique structures that support growth?
Plant 1:	Observation: Describe or illustrate the stem system in this plant. Classification: What type of stem system does this plant have?
Plant 2:	Observation: Describe or illustrate the stem system in this plant. Classification: What type of stem system does this plant have?

Plant 3:	Observation: Describe or illustrate the stem system in this plant. Classification: What type of stem system does this plant have?
Additional Evidence:	

SUMMARY: How do the stem structures of plants promote their growth? How can stems become part of a healthy diet?

Essential Question

WHAT CAN I LEARN ABOUT STEMS IN THE GARDEN?

INVESTIGATION VOCABULARY:

Stem
Vascular bundle (xylem/phloem)
Cambium
Epidermis
Stem modifications (runners, suckers, rhizomes, tubers, bulbs, thorns)

PROCEDURE:

Phase 1 (10 minutes)

Select two plants growing in or near the garden as samples for the investigation.
Four-person lab groups will work in pairs to start.
Make observations about the stem's exterior parts and modifications.
Make a cross section of the stem to view its interior structures.
Use a microscope or magnifying glass to further investigate the interior structures in the stem.
Access an illustration or diagram of that plant online to ensure proper identification of stem parts.
Create a diagram of the stem parts and modifications with labels.

PROCEDURE:

Phase 2 (20 minutes)

Select two plants growing in or near the garden as samples for the investigation.
Four-person lab groups will work in pairs to start.
Make observations about the stem's exterior parts and modifications.
Make a cross section of the stem to view its interior structures.
Use a microscope or magnifying glass to further investigate the interior structures in the stem.
Access an illustration or diagram of that plant online to ensure proper identification of stem parts.
Create a diagram of the stem parts and modifications with labels.

Diagram of Stem Sample with Labels: Xylem, phloem, cambium, epidermis, stem modifications, other observed elements	**Exterior:** **Interior:**

Diagram of Stem Sample with Labels: Xylem, phloem, cambium, epidermis, stem modifications, other observed elements	**Exterior:**	**Interior:**
Affirmation/ Extension 1	Affirmation	Extension
Affirmation/ Extension 2	Affirmation	Extension
SUMMARY/ANALYSIS: Explain various ways that stems work to support the growth and reproduction of a plant.		

Essential Question

HOW CAN STEMS HELP ME BE HEALTHY?

PROCEDURE:

- Wash hands and prep area as instructed for safe food handling. Select
- ingredients based on the recipe and Nutrition Cards for as many ingredients as possible.
- You will have 20-30 minutes to prepare the recipe as directed.
- Prepare eight tasting samples for the class if appropriate. Four will be sampled by the group and four are for other classmates.
- Use the tasting rubric to rate all items sampled.
- Clean prep area and cooking materials.

What are the key ingredients of the recipe we chose?	
What health benefits are part of this recipe? *Nutrition Cards	
What do I like about this recipe?	
What could be improved in this recipe?	
What did I learn from the other kitchen groups?	
How are the recipes I tried similar or different from those I eat at home?	

SUMMARY: Using your experience in the lab and/or kitchen, describe ways that you can eat stems to promote health for you and/or your family.

TASTING RUBRIC

Criteria	Beginning (1)	Acceptable (2)	Recommended (3)	Award-Winning (4)
NUTRITION VALUE	Recipe has some elements of the chef's plate but also has some ingredients that are less healthy choices.	Recipe uses mostly healthy foods but does not include all elements of the chef's plate or they are not in the recommend-ed portions.	Recipe uses ingredients that are healthy and it contains foods from the chef's plate in correct portions.	Recipe uses all healthy ingredients and the proportions are nearly the same as what is recom-mended on the chef's plate.
TASTE AND PRESENTATION	The recipe was good to try but not something I would choose again.	The recipe is good. I would eat it again, but it could be improved.	This recipe is something I would select again.	The recipe is delicious and presented well. I would recommend or make it for others.
TOTALS				

Essential Question

HOW CAN I SHARE WHAT I LEARNED ABOUT STEMS?

What are the structures that support Plant A?

What are the structures that support Plant B?

Topic Sentence or Thesis

Concluding Sentence

What vocabulary must be defined for the reader? Is there a way to visually support them?

Categories and Headings that will make this piece most clear and concise.

SUMMARY/ANALYSIS: What do you want people to do after learning about the function of stems for plants and people?

WRITER'S CHECKLIST: INFORMATIONAL WRITING

My Writing:

- ☐ Compares and contrasts structures, functions, and modifications of two plants in the garden
- ☐ Includes various edible stems and describes how they can be consumed
- ☐ Is organized into categories or sections that include transitions
- ☐ Provides headings, illustrations, or other strategies to make it easy and fun to read
- ☐ Uses facts, quotes, definitions, and details
- ☐ Is concise, clear, and formal in tone
- ☐ Has a conclusion for my piece that provides the reader with a next step or action
- ☐ I can create a piece that meets publication criteria, including a bibliography

My writing is ready for submission for publishing in Our Food Chronicles when it:

- ☐ Uses proper punctuation including:
- ☐ Uses complete and high-quality sentences which have:
- ☐ Uses correct vocabulary and definitions.
- ☐ Other criteria our class established including:

Essential Question

WHAT CAN I LEARN ABOUT LEAVES IN THE GARDEN?

What do you already know about leaves**?**

Vocabulary	Illustration/Example	Definition
LEAF	The part of the leaf that makes food for the plant to grow.	
PHOTOSYNTHESIS	A chemical reaction that converts sunlight, carbon dioxide, and water into sugar (food) for plants.	
CHLOROPLASTS	Plant organelles (part of a plant cell) that contain chlorophylls and are the site of photosynthesis.	
CHLOROPHYLL	A green pigment found in leaves that is photosynthetic and uses energy from the sun to create food. It is the reason leaves appear green.	
Diagram and the parts of a leaf:	Simple Leaf / Compound Leaf	
Leaf Characteristics:	**Arrangement:** opposite/ alternating **Margins:** smooth/wavy, toothed, bristle-top **Base:** rounded, tapering, uneven, heart-shaped.	

Plant 1:	Classification Type: Arrangement: Margin: Base:
Plant 2:	Classification Type: Arrangement: Margin: Base:
Plant 3:	Classification Type: Arrangement: Margin: Base:
ADDITIONAL EVIDENCE/ OBSERVATIONS	

SUMMARY: Write a CER to answer the question: How does the structure of a leaf help the plant to grow and/or predict the type of environment it needs?

Claim:

Evidence 1:

Evidence 2:

Evidence 3:

Reasoning (how the evidence supports the claim):

Investigation Vocabulary (see Garden Journal or Garden Thymes for complete definitions)
Chlorophyll
Photosynthesis
Starch: A substance containing sugar that is found in leaves as a result of photosynthesis.

PROCEDURE:

1. Lab groups of four.
2. Locate two leaves from the same plant at your lab station.
3. Fill a 250 mL beaker halfway with water. Turn on Bunsen burner, heat until it boils, and maintain boiling point.
4. Fill two boiling tubes halfway with ethanol.
5. Use forceps to place both leaves in boiling water for about 2 minutes.
6. Use forceps remove leaves from water and place leaves in tubes.
7. Place both tubes in the beaker and leave them in until the ethanol turns green (10 minutes).
8. Remove tubes from beaker and remove leaves from tubes using forceps and place them on tile or petri dish.
9. Turn off the burner.
10. Use the dropper to cover both leaves with iodine.
11. Observe and record the changes to the leaves.
12. Wait for instructions to compare data across lab groups.
13. Complete data collection and clean up lab station.

Lab Sample 1	Illustration/Description of Leaf	Changes observed in the leaf after iodine is applied to leaf:
Lab Sample 2	Illustration/Description of Leaf	Changes observed in the leaf after iodine is applied to leaf:
Lab Sample 3	Illustration/Description of Leaf	Changes observed in the leaf after iodine is applied to leaf:
Lab Sample 4	Illustration/Description of Leaf	Changes observed in the leaf after iodine is applied to leaf:

Lab Sample 5	Illustration/Description of Leaf	Changes observed in the leaf after iodine is applied to leaf:
Identify the claim and evidence presented in the article provided.		

SUMMARY/ANALYSIS: Consider all of the evidence collected in the various investigations thus far. Record the following:

Claim:

Evidence 1:

Evidence 2:

Evidence 3:

Reasoning:

What are the key ingredients of the recipe we chose?	
What health benefits are part of this recipe? *Nutrition Cards	
What do I like about this recipe?	
What could be improved in this recipe?	
What did I learn from other kitchen groups?	
How are the recipes I tried similar or different from those I eat at home?	

SUMMARY: Using your experience in the lab and/or kitchen, describe ways that you can eat leaves to promote health for you and/or your family.

Criteria	Beginning (1)	Acceptable (2)	Recommended (3)	Award-Winning (4)
NUTRITION VALUE	Recipe has some elements of the chef's plate but also has some ingredients that are less healthy choices.	Recipe uses mostly healthy foods but does not include all elements of the chef's plate or they are not in the recommend-ed portions.	Recipe uses ingredients that are healthy and it contains foods from the chef's plate in correct portions.	Recipe uses all healthy ingredients and the proportions are nearly the same as what is recom-mended on the chef's plate.
TASTE AND PRESENTATION	The recipe is good to try but not something I would choose again.	The recipe is good. I would eat it again, but it could be improved.	This recipe is something I would select again.	The recipe is delicious and presented well. I would recommend or make it for others.
TOTALS				

Essential Question

HOW CAN I SHARE WHAT I LEARNED ABOUT LEAVES?

What is my claim about leaves as part of a healthy diet?	
What will I include in my infographic as evidence to persuade the reader?	
Text	**Images, Charts, Symbols**
SUMMARY: (serves as a concluding sentence) What do you want people to do after learning about the function of leaves for plants and people?	

WRITER'S CHECKLIST: INFORMATIONAL WRITING

My Writing:

- ☐ Provides a claim that is clear and compelling
- ☐ Provides relevant, valid evidence to support the claim
- ☐ Includes images, charts, symbols, maps, or other graphics that make the argument more compelling and visually interesting
- ☐ Presents and/or refutes a counterclaim (7th/8th grade only)
- ☐ Is concise, clear, and formal in tone
- ☐ Has a conclusion for my piece that provides the reader with a next step or call to action
- ☐ Meets publication criteria, including a bibliography

My writing is ready for submission for publishing in *Our Food Chronicles* when it:

- ☐ Uses proper punctuation including:
- ☐ Uses complete and high-quality sentences which have:
- ☐ Uses correct vocabulary and definitions.
- ☐ Other criteria our class established including:

Essential Question

WHAT CAN I LEARN ABOUT FRUITS AND FLOWERS IN THE GARDEN?

What do you already know about fruits and flowers?

Vocabulary	Illustration/Example	Definition
FLOWER		The part of the plant that supports plant reproduction (often beautiful in many ways).
FRUIT		The part of the plant that protects the seed from the surrounding environment. It is the ripened ovary of the flower.
STAMEN		Male reproductive part of the flower which includes an anther and filament.
PISTIL		Female reproductive part of the flower which includes the stigma, style, ovary, and ovule.
EXOCARP		The outer layer of the fruit.
MESOCARP		The fleshy inner layer of fruit between the exocarp and the seed.
How are the fruits and flowers of plants similar and different?		
How do variations in fruit and flower structures help each plant survive in its environment?		

How can eating fruits and flowers help us maintain a healthy diet?	
What evidence can I find to show that all flowers and fruits have some similar structures, but also have unique structures that support growth?	
Plant 1:	Observation: Describe or illustrate the flower structure. Classify as Perfect or Imperfect
Plant 2:	Observation: Describe or illustrate the flower structure. Classify as Perfect or Imperfect
Plant 3:	Observation: Describe or illustrate the flower structure. Classify as Perfect or Imperfect
Additional Evidence/Observations	
SUMMARY: How do fruits and flowers help plants continue their life cycle?	

Essential Question

WHAT CAN I LEARN ABOUT FRUITS AND FLOWERS IN THE GARDEN?

Investigation Vocabulary (see Garden Journal or Garden Thymes for complete definitions) **Ethylene** **Enzyme**	
What is the purpose of ripening in the reproductive cycle of the plant?	
What is the chemical process(es) that cause ripening to occur?	
What variables affect the process of ripening?	

PROCEDURE:

1. Lab groups of four.
2. Using information from the articles, identify three variables that will affect the ripening process of the fruit you have selected.
3. Place one fruit sample in a location designated as the control location.
4. Place one fruit in a paper bag with a banana in the same location.
5. Take the temperature of the control location.
6. Place the other two fruits in separate bags with a banana in each.
7. Identify two separate locations for the other two bags that present a variable to test.
8. Record the temperature in those locations.
9. Wait for instructions to compare data across lab groups.
10. Complete data collection and clean up lab station.

DAY 1:

Lab Sample 1	Control	Temperature	Observation of test fruit

Lab Sample 2	Variable	Temperature	Observation of Fruit
Lab Sample 3	Variable	Temperature	Observation of Fruit
Lab Sample 4	Variable	Temperature	Observation of Fruit
Day 2:			
Lab Sample 1	Variable	Temperature	Observation of Fruit
Lab Sample 2	Variable	Temperature	Observation of Fruit
Lab Sample 3	Variable	Temperature	Observation of Fruit
Lab Sample 4	Variable	Temperature	Observation of Fruit

Day 3:			
Lab Sample 1	Control	Temperature	Observation of Fruit
Lab Sample 2	Variable	Temperature	Observation of Fruit
Lab Sample 3	Variable	Temperature	Observation of Fruit
Lab Sample 4	Variable	Temperature	Observation of Fruit
Day 4:			
Lab Sample 1	Control	Temperature	Observation of Fruit
Lab Sample 2	Variable	Temperature	Observation of Fruit
Lab Sample 3	Variable	Temperature	Observation of Fruit
Lab Sample 4	Variable	Temperature	Observation of Fruit

SUMMARY: Write a CER to explain what you learned about the ripening process of fruit.

Claim:

Evidence 1:

Evidence 2:

Evidence 3:

Reasoning:

Essential Question

HOW CAN THE GARDEN HELP ME BE HEALTHY?

What important vocabulary is related to food preservation?	
List/describe five or more methods for food preservation and why those methods are effective.	
Identify any advantages (pros) or disadvantages (cons) related to food preservation.	
How is food preservation similar or different from how my family preserves or eats preserved food?	

PROCEDURE: Access the freezing process for the fruit or flower you have chosen for this lab. Follow the procedure described.

SUMMARY: Using your experience in the lab and/or kitchen, describe ways that you can eat fruits and flowers to promote health for you and/or your family.

Essential Question

HOW CAN I SHARE WHAT I LEARNED ABOUT FOOD FROM THE GARDEN?

Critical Vocabulary:
Local Food: Food grown within 100 miles of the point of consumption.
Industrial Agriculture: Food grown in large-scale production for the purpose of wide distribution to consumers across the globe, nation, or large regions.

Arguments supporting local food.	**Arguments supporting commercial food sources.**

SUMMARY: In your opinion, what argument is most compelling as the best source of food for people and the environment?