READY, SET, GROW! GROW! GARDEN JOURNAL





MAKING OBSERVATION



Essential Question

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WHAT CAN WE LEARN FROM THE GARDEN?

Parts/Categories of the Garden	Living Y or N	Illustration/Sketch/ Example	Role/Job in the Garden
AIR			Provides carbon that plants take in as a source of energy.
SOIL			Provides protection and nutrients.
PLANTS - FIND 3			Stabilize soil; provide food to animals.
ANIMALS- FIND 2			Spread seeds, make space for roots, and release carbon.
STRUCTURES			Contain roots/growth o allow plants to spread out.
WATER			Provides hydrogen.
SUN			Provides energy that plants use to grow and make nutrients.

3-5 Lesson 1

IAKING BSERVATIONS AS A LA



Vocabulary	Illustration/Sketch/ Example		Definition	
ORGANISM ORG-AN-ISM			An individual living thing: Animal, plant, or single-celled being.	
STRUCTURE STRUC-TURE			The way a plant part is shaped. Describes how it looks.	
FUNCTION FUNC-TION			The job a plant part has in the survival of that organism.	
PARTS OF A PLANT				
LIFE CYCLE OF A PLANT	and and the			
Lab Station 1: Seeds				
Plant Part Sketch	Part of Plant Life Cycle	supports its fun	w the plant structure ction. evidence: _1 _2 _3 _4 _5	
Lab Station 2: Roots				
Plant Part Sketch	Part of Plant Life Cycle	supports its fun	w the plant structure ction. evidence: _1 _2 _3 _4 _5	

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Essential HOW DO SCIENTISTS Question LEARN FROM PLANTS? (CONTINUED)

Lab Station 3: Stems		
Plant Part Sketch	Part of Plant Life Cycle	Evidence of how the plant structure supports its function. Strength of my evidence: _1 _2 _3 _4 _5
Lab Station 4: Leaves		
Plant Part Sketch	Part of Plant Life Cycle	Evidence of how the plant structure supports its function. Strength of my evidence: _1 _2 _3 _4 _5
Lab Station 5: Flowers a	and Fruits	
Plant Part Sketch	Part of Plant Life Cycle	Evidence of how the plant structure supports its function. Strength of my evidence: _1 _2 _3 _4 _5
SUMMARY: What	at evidence did I collect tha	t supports or counters my hypothesis?

READY, SET, GROW!

AKING BSERVATIONS TO KITCHEN



Image: Second stateHow can we use the Garden as Food?Image: Second stateHow can we use the Garden as Food?

Kitchen Procedur	e:
Plant Part Salsa	
3. Collect nutritio	ant parts that will be used to make a salsa. on labels for the ingredients selected. plant part will be used to make the salsa.
Seeds:	
Leaves:	
Roots:	
Stems:	
Flowers/Fruits:	
7. Proceed to sau 8. Complete the 9. Return to your	samples (four for the group, four for other students). mple salsa as directed by your teacher. sampling rubric for each sample tasted. r station and clean the area. eedback to your group in the tasting rubrics. What should be elements of a tasty salsa dish:
Experimentation	What is the serving size and nutrition of your salsa dipping ingredient?
Experimentation Experimentation	





TASTING RUBRIC:

Observation	How	do samplers	s evaluate your sa	ılsa?
SUMMARY: How	can we use the	garden as food?		
TASTIN Criteria	G RUB Beginning (1)	Acceptable	Recommended (3)	Award-Winning (4)
NUTRITION VALUE	Recipe has some plants that are healthy, but may include things that are not as healthy to eat.	Recipe has some plants that are healthy to eat.	Recipe uses ingredients from the Chef's Plate that are healthy for me to eat.	Recipe meets all the recommenda- tions from 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				

READY SET, GROW!

AKING BSERVATIONS TAKE ACTION



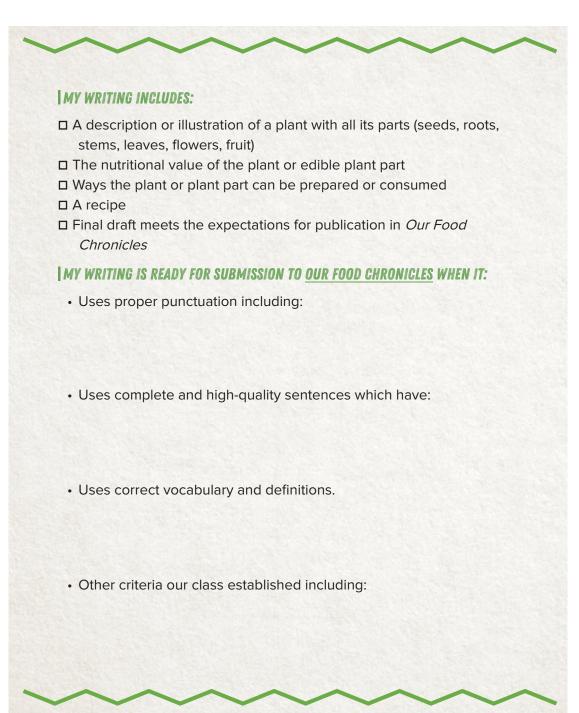


What do I want to SHARE?
/ill I choose to publish my research? ect?

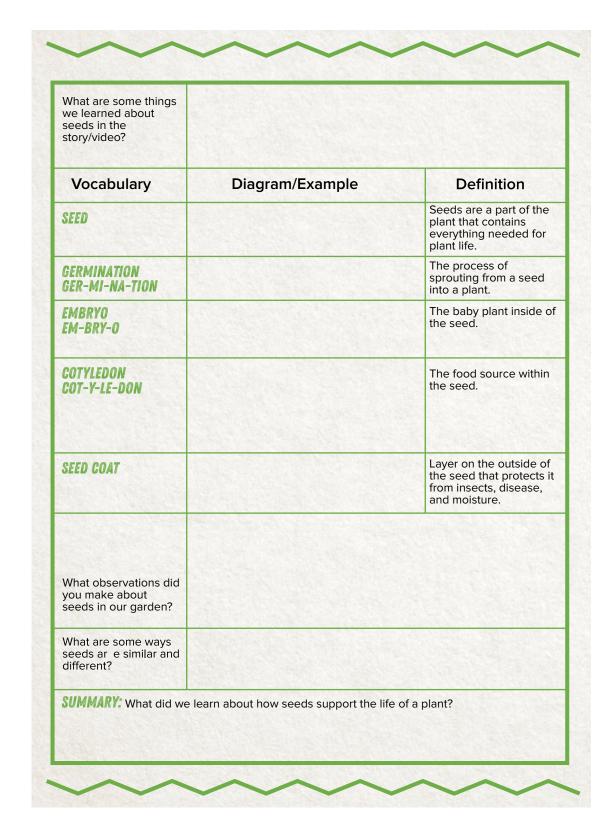


WRITERS CHECKLIST:

Students should complete this checklist for their reporting.









Essential Question

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WHAT CAN I LEARN ABOUT SEEDS IN THE GARDEN?

How do the structures of seeds help them support the germination, or start of a new plant?	
How can seeds be part of a healthy diet?	
Hypothesize how the s Hypothesize how the s	to four seeds. seed to identify its seed coat, cotyledon, and embryo. seed structure supports its function. seed's environment might be related to its structure (where it grows, rminate, likely risks for a particular seed, how it spreads).
NAME OF SEED 1:	Sketch of Seed
NAME OF SEED 2:	How might this seed's structure help it survive and grow? Sketch of Seed
	How might this seed's structure help it survive and grow?
NAME OF SEED 3:	Sketch of Seed
	How might this seed's structure help it survive and grow?

READY, SET, GROW!

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Essential Question

WHAT CAN I LEARN ABOUT SEEDS IN THE GARDEN?

What do all seeds have in common?		
What ways are seeds different from each other?		
What is your hypoth- esis (educated guess) about how a seed's structure is related to how and where it grows?		
SUMMARY: How are se	ds important to a plant and to o	ur healthy diet?





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Essential *HOW CAN THE GARDEN* **Question** *HELP ME BE HEALTHY?*

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 e eat seeds to promote he	experience in the lab and/or kitchen, describe ways that you can alth for you and/or your family.

READY, SET, GROW!

S GARDEN TO AT KITCHEN



TASTING RUBRIC:

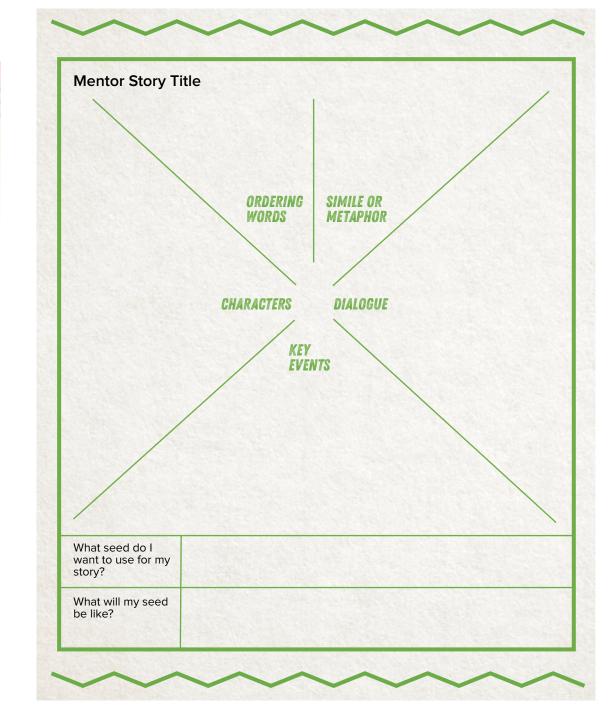
VALUE sor tha hea ma thir are not	tas	Recipe has some plants that are healthy to eat.	Recipe uses ingredients from the Chef's Plate that are healthy for me to eat.	Recipe meets all the recommenda- tions from the Chef's Plate.
	althy to t.			
PRESENTATION is c try sor wo cho	e recipe good to but not nething I uld pose ain.	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				

EADY, SEEDS GARDENERS ET, WE EAT TAKE ACTION ROW!





WHAT CAN I SHARE ABOUT SEEDS IN OUR GARDEN?







My Seed Story Board			
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		west west the	
		The second	

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- WRITERS CHECKLIST: MY SEED STORY

□ Introduction helps the reader know the situation.

□ I compare things using similes or metaphors.

□ I have at least one character that is a seed.

- □ At least three events occur with the seed and I use ordering words like "first", "next", "then", "after", or "later".
- The events my seed has are related to how seeds function in the life of a plant.
- □ I described the character's emotion in some events.
- □ I use some dialogue to help the reader understand what is happening.
- □ I have at least three illustrations to make the story more interesting.

My writing is ready to be submitted for publishing in Our Food Chronicles when I:

- Use proper punctuation including:
- Use complete and high-quality sentences which have:
- Uses correct vocabulary and definitions when appropriate.
- Meet other criteria our class established including:





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WHAT CAN THE GARDEN TEACH ME ABOUT ROOTS?

/ocabulary Word	Diagram/Example	Definition
ROOT		
ABSORPTION		
SOIL		
TAPROOT		
FIBROUS ROOT FI-BROUS		
What observations did you make about roots in our garden?		
What are some ways roots are similar and different?		
SUMMARY: What did you le (Germination, G	earn about how roots support the life o browth, Reproduction, Death)	f a plant?





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Essential *WHAT CAN THE GARDEN* **Question** *TEACH ME ABOUT ROOTS?*



- 1. Form groups of four students and greet each other.
- 2. Visit four lab stations in total. Two stations will be tap roots; two stations will be fibrous roots.
- 3. At each lab station, observe each of the plants.
- 4. Use words or sketches to record data.
- 5. Work with your lab members to be sure all students in the group are recording similar data.
- 6. Clean up stations if directed to do so by your teacher.

Vocabulary Word	d Diagram/Example Definition		
TAPROOT			
FIBROUS ROOT FI-BROUS			
LAB STATION	Observations/Data: What do you observe about this plant? You m use words and sketches.		
LAB STATION 1 ROOT TYPE:	What does the root look like?		
	What does the plant look like?		
	Other observations:		

READY, SET, GROW!



LAB STATION 2 ROOT TYPE:	What does the root look like?
	What does the plant look like?
	Other observations:
LAB STATION 3 ROOT TYPE:	What does the root look like?
	What does the plant look like?
	Other observations:
LAB STATION 4 ROOT TYPE:	What does the root look like?
	What does the plant look like?
	Other observations:
draw about tap and	viewing your data and that of your classmates, what hypothesis can you fibrous roots and how they help the plant to grow? How does the specifically help the plant?

• **HYPOTHESIS**: What type of environment would be best for taproots versus fibrous roots?



Essential *HOW CAN THE GARDEN* *****HELP ME BE HEALTHY*?

PROCEDURE:	
	area as instructed for safe food handling.
	rd for as many ingredients as possible from your recipe.
	prepare the recipe as directed.
	samples for the class. Four samples are for your group; four samples a
for other students.	
	offered by other groups and rate the recipe using the rubric.
6. Clean prep area and	
A CAR AND A CAR A CAR AND A CAR	ng plant material if possible.
What are the key	
ingredients of the recipe we chose?	
recipe ne 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?	
Tecipe:	
What did I learn from	
other kitchen groups?	
How are the recipes I	
tried similar to or	
different from those I eat at home?	
cut at nome:	

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READY, SET, GROW!



TASTING RUBRIC:

VALUE s ti h n ti	Recipe has some plants hat are nealthy, but nay include	Recipe has some plants that are healthy to	Recipe uses ingredients from the Chef's Plate	Recipe meets all the recommenda-
n h	hings that are not as nealthy to eat.	eat.	that are healthy for me to eat.	tions from the Chef's Plate.
PRESENTATION is tu s v c	The recipe s good to ry 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				

EADY, ROOTS GARDENERS ET, WE EAT TAKE ACTION

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Essential HOW CAN I SHARE WHAT J LEARNED ABOUT ROOTS?

What should I share about the function of roots for plants and people? Record the source.	Illustrations/Diagrams that help people understand the topic.
Topic Sentence or Thesis Concluding Sentence	
Headings or sections I need to include to	Transition words or phrases I will use to
Headings or sections I need to include to organize the content.	make the writing clear.





- MY WRITING INCLUDES:

- □ Important facts about the function of roots in the growth of a plant
- □ Important facts about the benefits of roots in a healthy diet
- Quotes, definitions, or other details that help explain the topic
- □ Illustrations or diagrams that help the reader understand the information
- □ Headings, sections, or categories to organize the information
- A conclusion that helps people know what to do with the information I have provided

My writing is ready to be submitted for publishing in Our Food Chronicles when I: Use proper punctuation including:

Use complete and high-quality sentences which have:

Uses correct vocabulary and definitions when appropriate.

Meet other criteria our class established including:



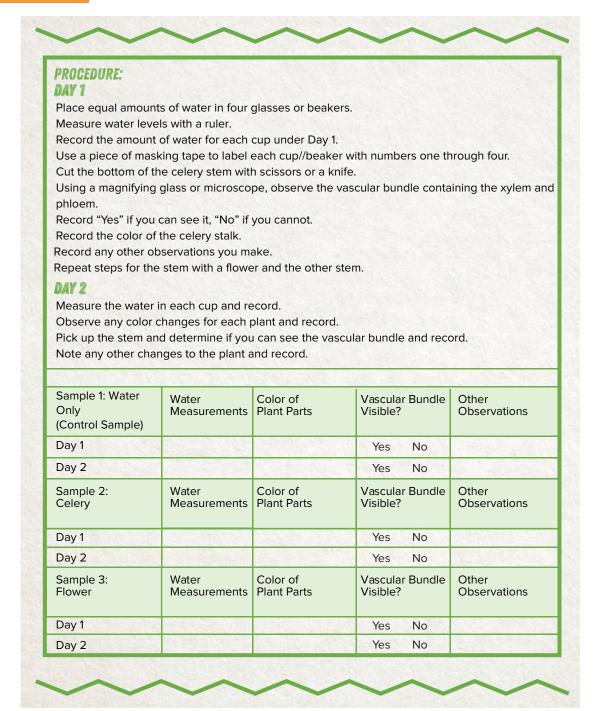
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Essential WHAT CAN THE GARDEN Question TEACH ME ABOUT STEMS?

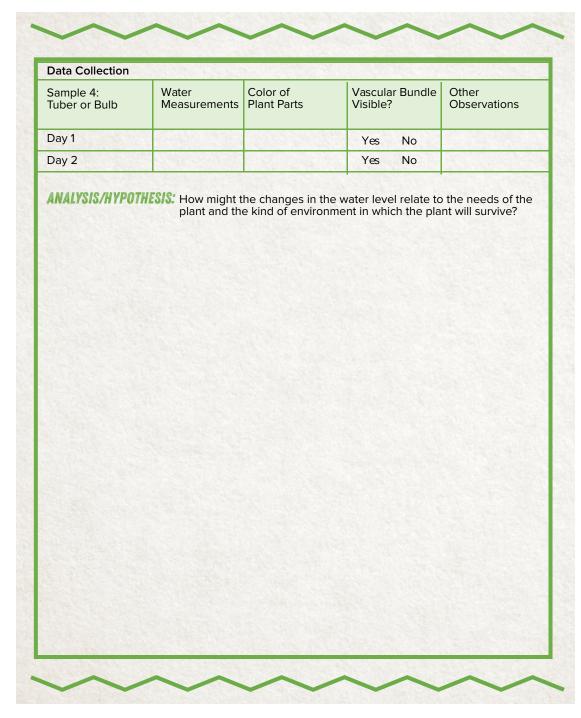
Vocabulary Word	Diagram/Example	Definition
STEM		The part of the plant that transports water, nutrients, and food to
XYLEM		Tissue in the plant stem that transports water and nutrients from the plant roots to the leaves.
PHLOEM		Tissue that transports food from the leaves to the rest of the plant
TRANSPORTATION		The way water, nutrients, and food are moved within a plant.
What observations did you make about stems in our garden?		
What are some ways stems are similar and different? (Words, sketches, or diagrams may be used.)		
	arn about how stems support the life	

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Essential WHAT CAN I LEARN ABOUT **Question** STEMS FROM THE GARDEN?







- **DIGGING DEEPER:**
- <u>Celery Lab Video</u>
- Images of vascular bundles for many plants
- Images of vascular bundles in celery



EMS GARDEN E EAT TO KITCHE

Essential Question

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HOW CAN THE GARDEN HELP ME BE HEALTHY?

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 to or different from those I eat at home?	
SUMMARY: Using you can eat ste	r experience in the lab and/or kitchen, describe ways that you ms to promote health for you and/or your family.

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TASTING RUBRIC:

Criteria	Beginning (1)	Acceptable (2)	Recommended (3)	Award-Winning (4)
NUTRITION VALUE	Recipe has some plants that are healthy, but may include things that are not as healthy to eat.	Recipe has some plants that are healthy to eat.	Recipe uses ingredients from the Chef's Plate that are healthy for me to eat.	Recipe meets all the recommenda- tions from 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				





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WHAT CAN I SHARE WITH OTHERS ABOUT HOW STEMS HELP PLANTS AND PEOPLE?

interesting?			
What criteria should be used to publish our own videos/ speeches?			
Storyboard: Each square for production.	e represents a section o	f the video. Be sure to review t	he criteria
		1267 B. C.	
		States and a state	
UMMARY: Why is it im	portant to share what w	e know about eating healthy fo	od?

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EADY, STEMS GARDENERS ET, WE EAT TAKE ACTION





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What about the video makes it useful and interesting?
• What criteria should be used to publish our own videos/speeches?
Script Frame: Answer the questions using the actual words you will say in the video/speech in the journal or on another piece of paper. Be sure to review the criteria for production.
<ul> <li>1. Introduction: Who you are and what is something interesting about you?</li> </ul>
<ul> <li>2. What are you making and why is it a good choice?</li> </ul>
• 3. What are the ingredients?
<ul> <li>4. What are the steps to prepare this recipe?</li> </ul>
<ul> <li>5. How does this recipe remind you of something in your life or another recipe you like that is similar?</li> </ul>
Other ideas?
<ul> <li>SUMMARY: Why is it important to share what we know about eating healthy food?</li> </ul>







#### WHAT CAN THE GARDEN TEACH ME ABOUT LEAVES?

Create a diagram or rubbing of two leaves you harvested in the garden.	
What are some ways leaves are similar and different? (Words, sketches, or diagrams may be used.)	



### **Essential Question**

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#### WHAT CAN I LEARN ABOUT LEAVES IN THE GARDEN?

Vocabulary Word	Diagram/Example	Definition
LEAF		Part of the plant that makes food needed for it to survive.
PHOTOSYNTHESIS		The process plants use to change carbon dioxide and sunlight into sugar (food for the plant). This happens in the leaves of plants.
CARBON DIOXIDE		Compound from the air used to make food.
ABSORPTION		To take something in or soak it up. Leaves absorb sunlight and carbon dioxide.
BLADE		The broad, flat part of the leaf.
VEIN		The part of the leaf that carries food and water.
How does the leaf support the growth of the plant?		
What structures or parts do leaves have that help them do their job?		
How can edible leaves be part of a healthy diet?		

## READY, LEAVES GARDEN PART WE EAT AS A LAB



### **Essential Question**

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#### WHAT CAN I LEARN ABOUT LEAVES IN THE GARDEN?

Leaf Sample 1: Name of Plant		
Diagram/Rubbing of the leaf	Describe the blade	Describe the veins
Leaf Sample 2: Name of Plant		
Diagram/Rubbing of the leaf	Describe the blade	Describe the veins
Leaf Sample 3: Name of Plant		
Diagram/Rubbing of the leaf	Describe the blade	Describe the veins

EADY, LEAVES GARDEN T, WE EAT TO KITCHEN



# Essential **Question**

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#### HOW CAN THE GARDEN HELP ME BE HEALTHY?

PROCEDURE:	
1. Wash hands and prep	paration area as instructed for safe food handling.
	directed in the Harvest Card.
	rd for as many ingredients as possible.
	ninutes to prepare the recipe as directed.
	samples. Your group will sample four, and four are for other students
	s out for students to view during the tasting.
Color and the second	ipe and complete a rubric.
	ther recipes and complete the rubric for each.
9. Clean the prep area a	and cooking materials.
What are the key	
ingredients of the recipe we chose?	
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 to or	
different from those l eat at home?	
eat at nome:	
CIIMMADV: Lising your	r experience in the lab and/or kitchen, describe ways that you
	ves to promote health for you and/or your family.
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READY, SET, GROW!



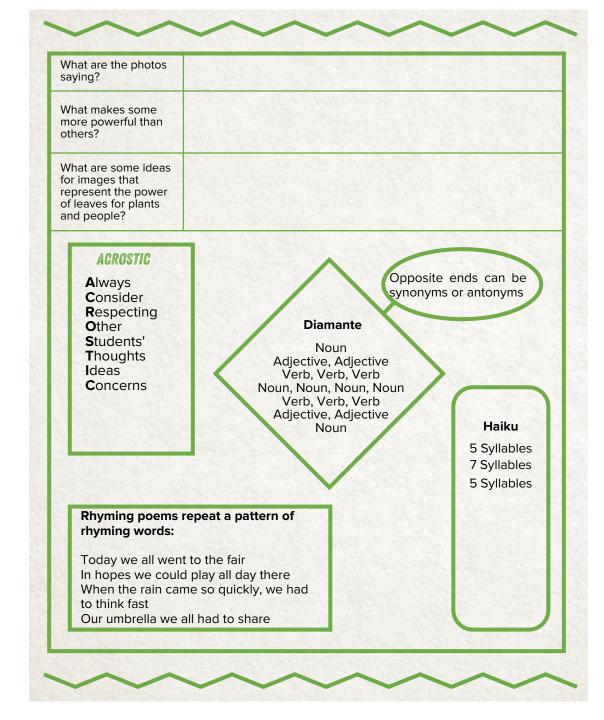
#### **TASTING RUBRIC:**

Criteria	Beginning (1)	Acceptable (2)	Recommended (3)	Award-Winning (4)
NUTRITION VALUE	Recipe has some plants that are healthy, but may include things that are not as healthy to eat.	Recipe has some plants that are healthy to eat.	Recipe uses ingredients from the Chef's Plate that are healthy for me to eat.	Recipe meets all the recommenda- tions from 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				

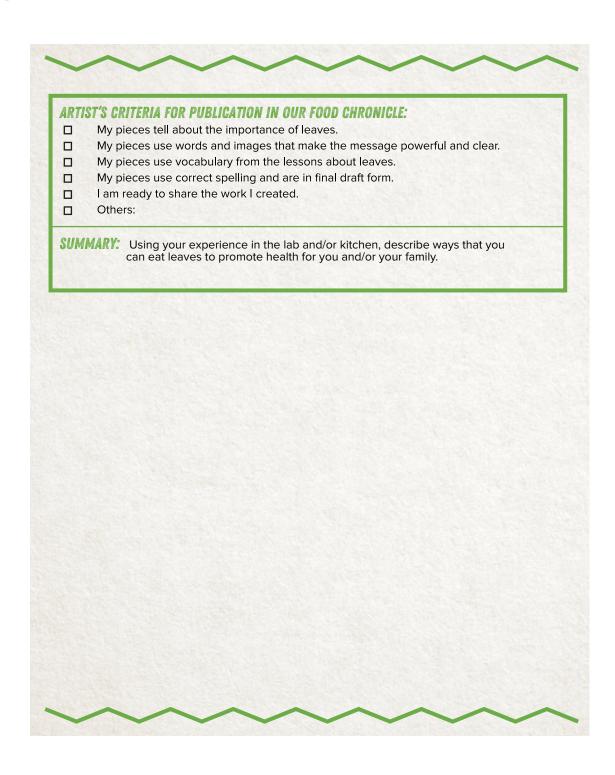


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## **Essential** *WHAT CAN I SHARE ABOUT* **Question** *LEAVES IN OUR GARDEN?*







DY, FRUITS AND FLOWERS WE EAT





#### WHAT CAN THE GARDEN TEACH ME ABOUT FRUITS AND FLOWERS?

What hypotheses do I have about what fruits and flowers do for a plant?	
Create a sketch of one fruit and one flower you observed or harvested in the garden.	
What are some ways fruits and flowers are similar and different? (Words, sketches, or diagrams may be used.)	
SUMMARY: What evide and flowers	nce did you find that supports your hypothesis and how fruits s function in the plant's life cycle? (Birth, Growth, Reproduction,
Death)	

**ADY,** FRUITS AND FLOWERS WE EAT GARDEN T,



## Essential Question

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#### WHAT CAN I LEARN ABOUT FRUITS AND FLOWERS FROM THE GARDEN?

/ocabulary	Illustration/Diagram Definition	
FLOWER	Showy part of the plant that supports reproduction.	
STAMEN	The male reproductive part of a flower includes anther and filament.	
PISTIL	The female reproductive part of a flower includes stigma, style, ovary, and ovules.	
SEPAL	The part of the flower that protects the bud.	
PETALS	Brightly colored part of the flower that attra	cts insects.
FRUIT	The ripened ovary of a flower that protects seeds from the surrounding environment.	
SEED	Remember?	
How does the flower support reproduction of the plant?		
How does the fruit support reproduction of the plant?		
How can edible fruits and flowers be part of a healthy diet?		



## **Essential WHAT CAN I LEARN ABOUT Question FRUITS AND FLOWERS FROM** THE GARDEN?

#### **PROCEDURE:** 1. Split lab group into two pairs. One person will do the flower dissection, the other the fruit dissection. 2. Each pair selects one flower from the lab station. 3. Slowly remove the sepals from the flower. Create a sketch or a drawing of your sample. 4. Record its function during reproduction. 5. Slowly remove each part as directed in the video. Create a sketch or a drawing of your sample. Record its function during reproduction. 6. Switch roles in the pair. 7. Use a butter knife to slice the fruit from the top to the bottom at the leaves or stem. 8. Slice one half of the fruit from side to side to view both ways. 8. Make observations of what you find when looking from both views. 9. Create a sketch or drawing from your sample of both views. Record its function during reproduction. 10. Clean up your lab area as directed by your teacher. Compost plant parts that were used for the lab or throw away if no compost is available. Illustration/Diagram SEPAL Function Illustration/Diagram Function PETAL Illustration/Diagram (label the Function STAMEN anthem and filament) Illustration/Diagram (label the Function PISTIL stigma, style, ovary, and ovules)

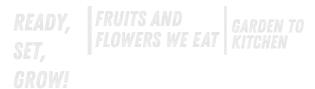
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FRUITS AND FLOWERS WE EAT



FRUIT	Illustration/Diagram	Function
SEED	Illustration/Diagram	Function
ANALYSIS/HYP	<b>POTHESIS</b> : Fruits and flowers all have sin different in other ways? Based that mean about the type of e	nilar parts. Why might they be on your evidence, what might nvironment that the plant needs?
Solution Station	n Evidence:	
Solution Station	n Evidence:	





# **Essential** *HOW CAN THE GARDEN* **Question** *HELP ME BE HEALTHY?*

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#### **PROCEDURE:**

- 1. Wash hands and preparation area as instructed for safe food handling.
- 2. Select Nutrition Cards for as many ingredients as possible.
- 3. Use 20-30 minutes to prepare the recipe as directed.
- 4. Prepare eight tasting samples (four for the group, four for other students).
- 5. Sample your recipe and one or two offered by other groups. Rate each recipe with the tasting rubric.
- 6. Clean their prep area and cooking materials.
- 7. Compost food material if possible.

experience in the lab and/or kitchen, describe ways that you ts or flowers 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 plants that are healthy, but may include things that are not as healthy to eat.	Recipe has some plants that are healthy to eat.	Recipe uses ingredients from the Chef's Plate that are healthy for me to eat.	Recipe meets all the recommenda- tions from 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				

READY, FRUITS AND SET, FLOWERS WE EAT AKE ACTION





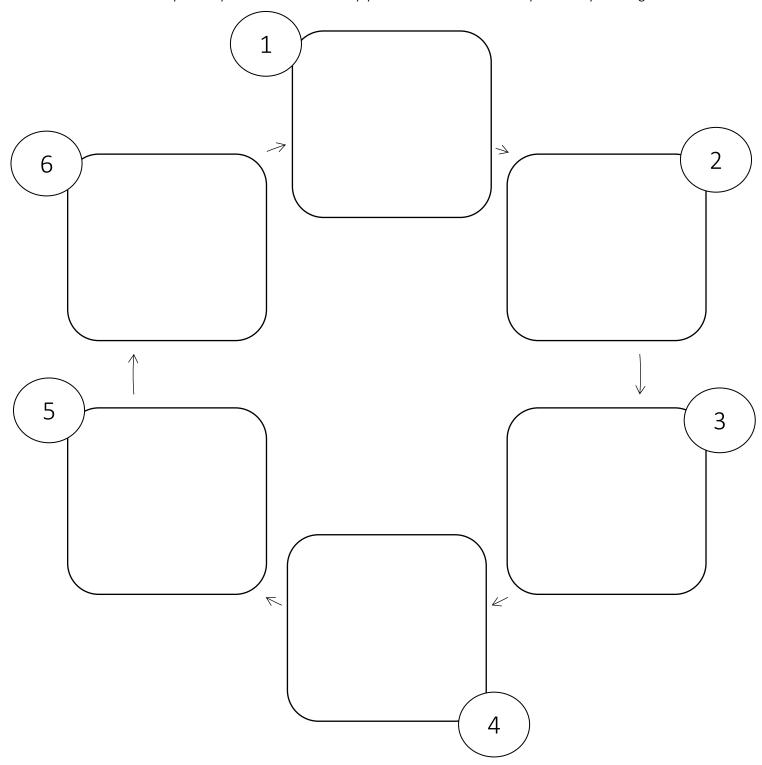
#### WHAT CAN I SHARE WITH OTHERS ABOUT HOW FRUITS AND FLOWERS HELP PLANTS AND PEOPLE?

<b>SAVORY:</b> Salty or spicy Fruit/Flower Examples:	<b>SWEET:</b> Tasting like sugar or honey Fruit/Flower Examples:
Reasons to eat savory fruits and flowers	Reasons to eat sweet fruits and flowers
<b>SUMMARY:</b> Who in my family or neighborhoo What are the most important things for me to	d can I share this information with this week? tell them?

#### Name:

#### Lifecycle of:

Write the name of the plant you will be sketching above. Below sketch out the different stages of the lifecycle. If you are finished early you can start to color in your lifecycle stages.



Name:

Date:

## Edible plant parts

Step 1: Look at the images below and identify each plant part.

**Step 2:** Describe the plant part's function.

**Step 3:** In your school's garden, take an inventory of plants that have the same edible plant part!

Plant Part:	Plant Part:	Plant Part:
Plant Part Function:	Plant Part Function:	Plant Part Function:
Garden Inventory:	Garden Inventory:	Garden Inventory:

## Edible plant parts

Step 1: Look at the images below and identify each plant part.

**Step 2:** Describe the plant part's function.

**Step 3:** In your school's garden, take an inventory of plants that have the same edible plant part!

Plant Part:	Plant Part:	Plant Part:
Plant Part Function:	Plant Part Function:	Plant Part Function:
Garden Inventory:	Garden Inventory:	Garden Inventory: