



HARVEST LESSONS

THIS MONTH'S THEME:
PARSNIPS

Lesson Plan



HARVEST LESSONS ARE A FUN WAY FOR K-4 CLASSROOMS TO EXPLORE, TASTE AND LEARN ABOUT EATING MORE FRUITS AND VEGETABLES EVERY DAY.

ACTIVITY SUMMARY

ACTIVITY	GRADE LEVEL	CURRICULUM CONNECTION	TIME
Intro	all	Literacy: speaking, listening Science & Social Studies: evaluating claims to determine whether or not they are true	10 min.
Taste Test	all	Literacy: speaking, listening Math: measurement, graphing/tallying responses	20 min.
#1: Observe, Draw & Discuss Parsnips	all	Science: classification, observation	15 min.
#2: Biennial Life Cycles	all	Science: life cycles, classification	30 min.
#3: Comparing Parsnips & Carrots	2-4	Science: classification	15 min.
#4: Parsnip Literature	all	Literacy: listening comprehension	20 min.
#5: Creating a Parsnip Timeline	3-4	Social Studies: geography, past and present	15 min.
#6: Mapping the History of Parsnips	3-4	Social Studies: history, geography	20 min.
#7: Sprout a Parsnip	all	Science: life cycles, change over time, observation, structure and function of organisms	10-20 minutes (over several days or weeks)



INTRODUCTION (10 MINUTES)

TRUE OR FALSE?

Begin with a fun interactive true or false activity. When a statement is true, students will stand up. When they believe a statement is false, they will sit down.

1. Parsnips grow best in a hot climate.

False, parsnips grow best in a cool northern climate. that's why they are a great crop in Vermont.

2. Parsnips were used in Europe as a sweetener before sugar was accessible.

True, before Europeans colonized North and South America, access to sugar was limited to honey on rare occasions and the natural sugars found in fruits and vegetables. This diet was much healthier than the modern diet with too much sugar.

3. Parsnips are in the same family as carrots, and parsley.

True, they are in the apiaceae family, or umbelliferae family, notable for their frilly leaves and umbrella-like flowers.

4. Parsnips have lots of vitamin A.

False, parsnips are actually related to carrots, which have a lot of vitamin A, but parsnips are a good source of other vitamins and minerals such as Vitamin C, B9 and Potassium.

5. You can keep parsnips in the ground all winter, and harvest in the spring when the snow is melted.

True, when you keep parsnips in the ground in the winter, they store sugar, and spring dug parsnips are considered the best, because they contain more sugars.

Ask these focusing questions throughout the lesson:

- What is the part of the plant that we eat?
- What color is it?
- How does it help our body?
- Where does it originate?



(intro - continued)

TASTE TEST

After the introduction, select appropriate activities to precede or follow the taste test. Refer to the activities described below.

For a taste test, you could choose from the following activities:

- Compare roasted and raw parsnips
- Compare parsnips and carrots, raw and/or roasted
- Make parsnip soup

See the Harvest Lesson Activities to Use Again and Again for information and ideas for taste tests.

ACTIVITY #1 (15 MINUTES)

ALL GRADES

OBSERVE, DRAW & DISCUSS PARSNIPS

MATERIALS

- Parsnips
- Carrots
- Cutting board
- Sharp knife
- Paper
- Pencils
- Magnifying glasses

PREPARATION

Gather all the needed materials.

PROCEDURE

Give each group of 2 to 5 students a parsnip to observe and draw in their journals, or on a piece of paper. You may also choose to have them observe a parsnip side by side with a carrot and other root vegetables. Discuss the parts of a root, and what they think they might see. A cross section of the parsnip can reveal the structure of the vascular bundle on the interior of the plant. Can they label the parts in their drawing?

Epidermis: outer protective layer

Root hairs: small roots that increase surface area for more absorption of water and nutrients from the soil

Vascular system: bundle in the middle of stems and roots containing the xylem and the phloem

Xylem: carries food down into the roots

Phloem: carries water and nutrients up through the plant



ACTIVITY #2 (30 MINUTES)

ALL GRADES

BIENNIAL LIFE CYCLES

MATERIALS

- Worksheet (see appendix)
- Life cycle sorting cards (biennial vs. perennial vs. annual)

PREPARATION

Make copies of worksheet.

PROCEDURE

Begin with a discussion of the definitions of biennial, perennial, and annual plants.

- An **annual** plant is a plant that goes to flower every year. Some examples of annual foods are tomatoes, lettuce, and beans.
- A **perennial** plant comes back year after year. Some examples of perennial foods are asparagus, rhubarb, fruit trees, and berries.
- A **biennial** flowers every two years. Parsnips and carrots are examples of biennial plants. If they are not harvested they will remain dormant in the ground, storing sugars through the winter, and go to flower in the second year.

Hand out copies of the worksheet and have students sort it in the order.

#1: A seed is planted

#2: The plant begins to sprout

#3: The carrot/parsnip is ready for harvest

#4: The root lays dormant, holding sugars in its root under the cover of winter snow.

#5: The next summer leaves grow back and a flower blooms.

#6: Flowers turn to seeds, and the cycle starts again.

ACTIVITY #3 (15 MINUTES)

GRADES 2-4

COMPARING PARSNIPS & CARROTS

MATERIALS

- Two hula hoops, or two large circles made of yarn
- 17 index cards
- Carrots
- Parsnips



(activity #3 continued)

PREPARATION

Gather materials. Write each of the following words or phrases on the index cards (one word or phrase per index card):

Root	Eaten cooked	Biennial	Orange	Eaten raw
White	Harvested in the spring	Grow wild in VT!	Harvested in the fall	
Vitamin A (good for your eyes)		Storage crop	Carrot	
Vitamin C (keeps you healthy)		Contain sugar	Parsnip	
Potassium (keeps you from getting cramps in your muscles)				

PROCEDURE

First, observe a carrot and a parsnip as a class. Ask students to look closely, share what they notice, and compare and contrast the two vegetables (what is the same? what is different?). If time allows, students can draw the vegetables, as described in the observation activity above.

After students have observed and discussed carrots and parsnips for about five minutes, explain that they are going to make a Venn Diagram comparing the two. Ask students to explain a Venn diagram. Most students will be familiar with them - if they don't have any clue, draw a picture of one on the whiteboard as a hint. If students are still unsure, explain that a Venn Diagram is used to show how two things are the same and how they are different.

Things that are special and different about one thing go on one side, and things that are special and different about the other thing go on the other side - each side needs to be labelled (have a title). The characteristics that the two things share go in the overlapping section. Use an example, like cats and dogs - fur, four legs and pets would go in the middle, purring would go on the cat side, barking would go on the dog side.

Place the hula hoops or yarn circles in the shape of a Venn Diagram in a spot where the students can form a circle around them. Place the carrot index card and an actual carrot above one side as the title for that circle, and the parsnip index card and an actual parsnip on the other side. Explain that you have a bunch of words that you are going to hand out to each student (or pair of students if it is a large class), and that you want them to decide whether that word is true just for carrots, just for parsnips, or for both. Tell students that it is okay to guess if they don't know - it doesn't matter whether they get the right answer, just as long as they are doing their best thinking.

Pass out the cards and have students place them. Then go over the placement of each word and have students discuss whether it is in the right spot. For some, you might have to just tell them the answer, especially if students don't have much background knowledge about these vegetables. You can use this activity as an opportunity to explain more about each vegetable and card - what the Vitamins are and do, what storage and biennial mean, the fact that while carrots are usually orange, they can also be yellow or purple.



(activity #3 continued)

ANSWER KEY

CARROTS	BOTH	PARSNIPS
orange	root	white
vitamin A	storage crop	harvested in the spring
eaten raw	eaten cooked	vitamin C
	biennial	potassium
	contain sugar	grow wild in Vermont
	harvested in the fall	

This activity can be repeated -- immediately after discussing the answers, you can shuffle the cards and have students race to place them in the right space, or you can repeat the activity at morning meeting or any other convenient time, so that students become more and more familiar with the terms on the index cards and the similarities and differences between parsnips and carrots.

ACTIVITY #4 (20 MINUTES)

ALL GRADES

PARSNIP LITERATURE

Talia and the Rude Vegetables by Linda Elovitz Marshall, illustrated by Francesca Assirelli: In this book, Talia mishears her grandmother when she asks for root vegetables, and looks in the garden for rude vegetables to make soup for Rosh Hashana. She finds the most misshapen roots, that look rude to her, and gives the other straighter vegetables away. Parsnips are mentioned multiple times in this story, as well as carrots, turnips, rutabagas, garlic and onions.

Tops and Bottoms by Janet Stevens: In this engaging, funny, beautifully illustrated story, Hare tricks bear with his knowledge of vegetables and plant anatomy. While parsnips are not featured, they are included in the illustrations, and certainly relate. After reading the story, ask students whether they would want the top or the bottom of a parsnip plant.

See the Harvest Lesson Activities to Use Again and Again for information and ideas on how to engage students in reading about healthy foods.



ACTIVITY #5 (15 MINUTES)

GRADES 3-4

CREATING A PARSNIP TIMELINE

MATERIALS & PREPARATION

Print out and cut apart the Parsnip History Facts in the appendix. Also keep a copy of the facts for yourself as a key. Mix them up and place in a bag, hat or basket. You may want to glue each fact to an index card to make them easier to shuffle and more durable. You could also laminate them.

PROCEDURE

Give one fact about the history of parsnips to groups of 2 or 3 students. Have students read the fact to/with their group members. Then, have them share out their fact to the whole group. Ask the class to figure out which order the facts go in, and have them stand with their fact and team in a human timeline to show the order they believe is correct. Let students lead the discussion as much as possible, but be prepared to facilitate -- this may be a difficult task for some classes, both in terms of the academic skills and the social skills (working as a team).

See appendix for parsnip history facts.

ACTIVITY #6 (20 MINUTES)

GRADES 3-4

MAPPING THE HISTORY OF PARSNIPS

MATERIALS

- A copy of Harvest Lessons map for each student
- One copy of the Parsnips Timeline & Mapping Directions to project, or one copy per student. An atlas for each student or pair of students
- Colored pencils

PREPARATION

Gather materials. This activity pairs well with Activity #5: Creating a Parsnip Timeline, so you could do that activity before or after this one.

PROCEDURE

Pass out copies of the Harvest Lessons map to each student. Project or pass out the Parsnips Timeline & Mapping Directions. Instruct students to follow the directions to map the history of parsnips!

See appendix for parsnip mapping worksheet



ACTIVITY #7 (10-20 MINUTES)

ALL GRADES

SPROUT A ROOT

See the Sprout a Beet activity in the Beets & Rutabagas lesson, and simply substitute parsnips or carrots. Be aware of the fact that parsnip leaves can cause an allergic reaction especially if a person is exposed to sunlight immediately after touching parsnip leaves. It might be best to discourage students from touching the experiment.

CLOSINGS

ACKNOWLEDGEMENTS

The following people contributed to developing this lesson plan: Chloe Powell, Aurora Coon, Cat Buxton, Karen Ganey and Kaitlin Haskins.

APPENDIX SEE WORKSHEETS THAT FOLLOW

CREATING A PARSNIP TIMELINE *Activity #5*

Thousands of years ago, people began growing parsnips in Mediterranean, the countries around the Mediterranean Sea.

The Ancient Greeks, who lived 800 to 600 years before Christ lived, ate lots of parsnips. They believed parsnips could make you fall in love.

The Roman emperor Tiberius, who ruled Rome from 14 A.D. until 37 A.D., once accepted parsnips instead of money from Germany, a country he had taken over and demanded money from each year.

During the Middle Ages and the Renaissance, from the year 400 to the 1600s, the parsnip was as popular as the potato in Europe, with many people eating it every single day!

Before Europeans colonized North and South America, access to sugar was limited to honey on rare occasions and the natural sugars found in fruits and vegetables. After colonization, sugar was produced cheaply in the Caribbean by slaves and shipped to Europe on boats. Parsnips were used in Europe as a sweetener until the 1700s, when sugar became easy to buy in Europe and very popular.

In the 1600s, parsnips were introduced to North America by French colonists in Canada and British colonists in the USA.

In March 2012, David Thomas, a man from England, won the world record for the largest parsnip. He grew a parsnip that weighed more than 17 lbs! It also happened to look a bit like a sea monster, with many people comparing the parsnip to the character of Davy Jones in *Pirates of the Caribbean*, who has a face covered in tentacles.

In August 2012, Peter Glazebrook, another man from England, earned the world record for the longest parsnip ever, with a parsnip he grew that was 18.5 feet long!

Today your class learned about and tasted parsnips!

Sources for history facts:

- GMFTS' Vermont Harvest of the Month Educator Resource
- <http://homecooking.about.com/od/foodhistory/a/parsniphistory.htm>
- <http://townsharvest.montana.edu/documents/Parsnips.pdf>
- Botanica's Pocket Organic Gardening
- The Telegraph. "World's longest parsnip spotted at National Giant Vegetables Championships. August 31, 2012.
- The Daily Mail. "Parsnips of the Caribbean: World-record breaking 17lb vegetable that looks like Davy Jones shocks horticulture fans at growing competition." March 8, 2012.

Activity #6

PARSNIP TIMELINE & MAPPING DIRECTIONS

Thousands of years ago, people began growing parsnips in Mediterranean, the countries around the Mediterranean Sea.

#1: Find the Mediterranean Sea - the water south of Europe and north of Africa that is mostly contained by those two continents. Color the Mediterranean Sea purple.

The Ancient Greeks, who lived 800 to 600 BC, ate lots of parsnips. They believed parsnips could make you fall in love.

#2: Find Greece. Color it red.

The Romans, who ruled Greece and many other Mediterranean countries after the Ancient Greeks, brought parsnips to Europe when they took over some countries in Europe.

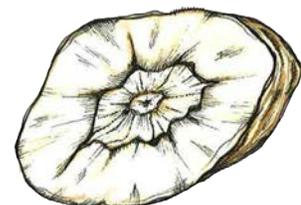
#3: Color Europe green. Draw an arrow from Greece to Europe.

In the 1600s, parsnips were introduced to North America by French colonists in Canada and British colonists in the USA.

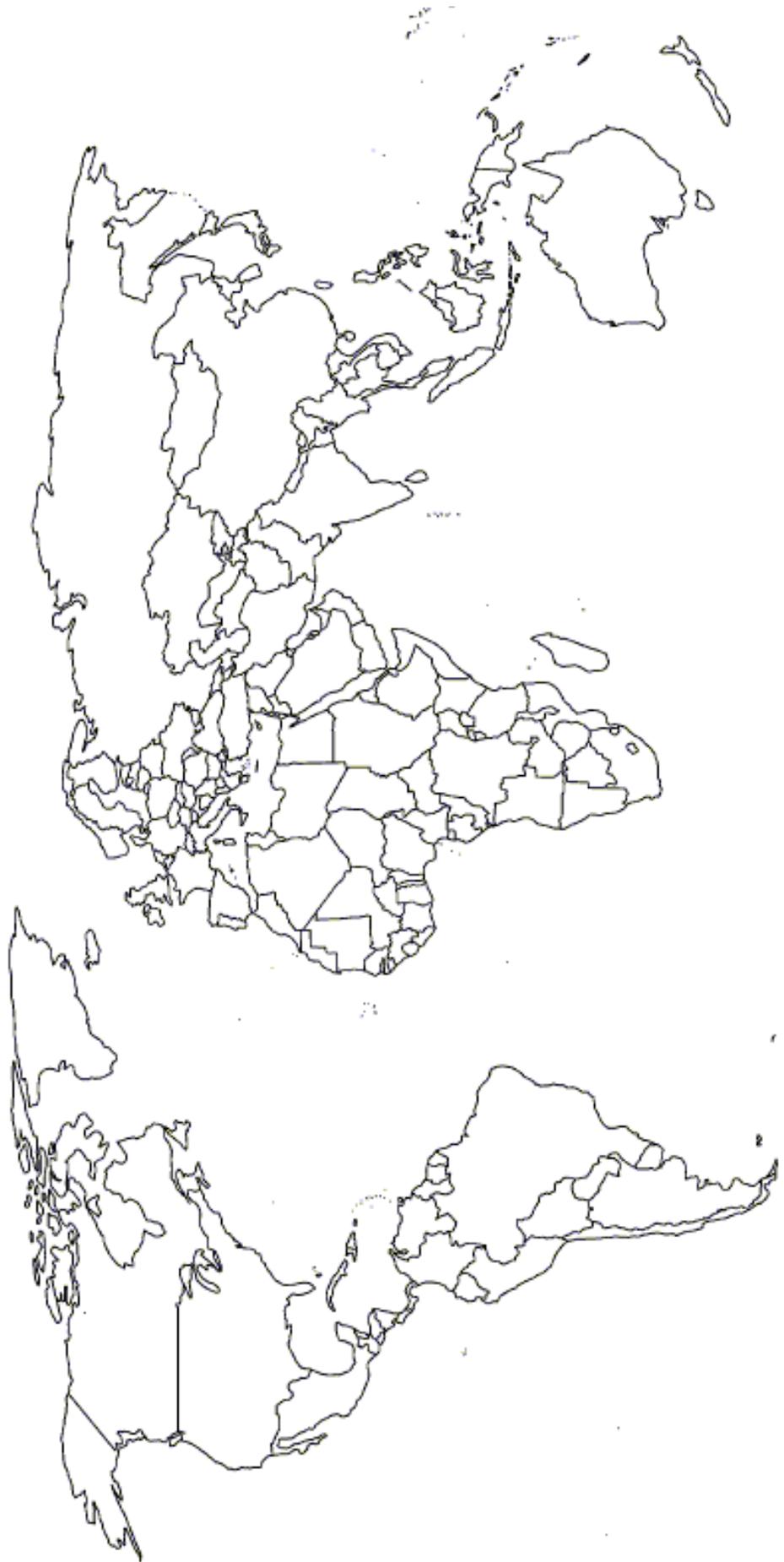
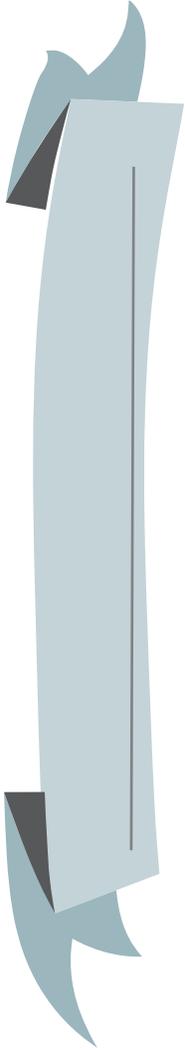
#4: Color Canada and the USA yellow or orange. Draw an arrow from Europe to North America.

Today, your class learned about and tasted parsnips!

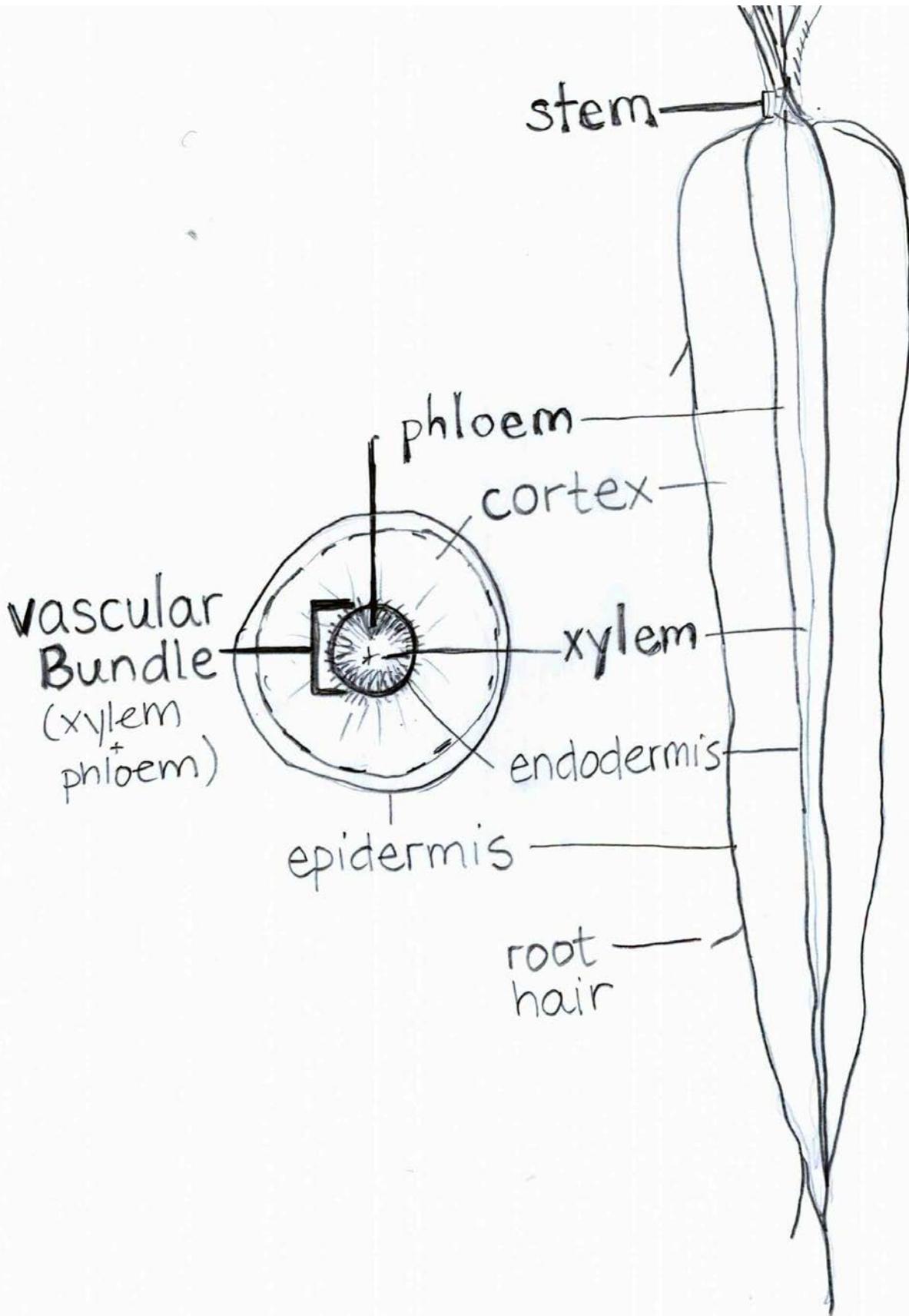
#5: Draw a big gray or black star in the part of the USA where you live.



THIS MONTH'S FOOD:



Activity #2



Activity #2

