EDIBLE PLANT PARTS

A **FRESHFARM** FOODPRINTS LESSON PLAN

Theme: Understanding Plant Parts

1ST GRADE / LESSON 1 / FALL / SEPTEMBER

LESSON SUMMARY

The purpose of this lesson is for students to understand that plants have different parts and that we eat different parts of different plants. Students will also begin to understand the structure and form of each plant part and work collaboratively to sort plants by which part we eat. In the garden, they will observe and draw plants and identify the different parts of edible plants growing there.

Objective: At the end of the lesson, students will be able to identify the six major plant parts and the edible parts of different plants.

BIG IDEA

We eat different parts of different plants.

GUIDING QUESTIONS

Why do plants have different parts?

Why do we eat different parts of different plants?

TIME

This lesson can be taught in a 90-120 minute block or divided into multiple shorter lessons using small group activities from the Explore section.

NATIONAL STANDARDS

Next Generation Science Standards (NGSS)

1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

Disciplinary Core Idea: LS1.A Structure and Function

Science and Engineering Practices: Developing and Using Models

Crosscutting Concepts: Structure and Function

Common Core ELA

SL.1.3 Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

W.1.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

National Food Education Standards (FES)

Standard 2: Foods have sources and origins.

Standard 6: We can make positive and informed food choices.

MATERIALS LIST

1. Device to play Banana Slug String Band song and lyrics (attached)
2. A variety of fruits, vegetables, grains, and dry beans for sorting
3. *Observational Drawing Worksheet* (attached) or journals for observational drawings
4. *Plant Part Labeling Worksheet* (attached), writing and drawing utensils
5. Recipe ingredients and cooking equipment

RECIPES

Pasta Salad with Ginger-Soy Dressing

Colorful Kale Salad

Apple Crunch Salad

Sofrito Rice

All FoodPrints recipes available here: freshfarm.org/recipes

VOCABULARY

root: the underground plant part that absorbs nutrients and water

stem: the plant part that supports the rest of the above ground plant

leaf: the plant part that gathers energy from the sun to make food for the plant (photosynthesis)

flower: the reproductive plant part; the plant part that makes seeds

fruit: the plant part that holds and protects the seeds

seed: the plant part that contains an embryo to grow a new plant

CONNECTED TEXTS

Plant Secrets
by Emily Goodman

Tops and Bottoms by Janet Stevens

The Vegetables We Eat by Gail Gibbons

To learn more about the FoodPrints program and access the full curriculum freshfarm.org/foodprints

CONNECTED VIDEOS

FoodPrints TV has a series of high energy videos for students and educators. They are available here: freshfarm.org/foodprints-tv

Note: Before teaching this lesson, we recommend teaching the *Welcome to FoodPrints* lesson which introduces the FoodPrints program and provides introductory activities for working safely in the garden and kitchen.

WASHINGTON, DC STANDARDS AND UNITS

DCPS Units of Study
Science – Design from Nature

DC Environmental Literacy Framework
Patterns and Growth: How do natural patterns affect living things? How do plants and animals change over the course of their lives?

DC Health Standards
K-2.5.1.2 Categorize foods according to food sources and food groups (e.g., plant, animal, and processed).

K-2.5.7.14 Recognize a nutritious meal or snack.

ENGAGE

The goal of this portion of the lesson is to engage students in learning by activating prior knowledge and experiences, piquing their interest, and building curiosity. Use this time to guide students through thinking about the Big Idea and Guiding Questions.

- Welcome students to the FoodPrints classroom. Share that in today's class we are going to be talking about different parts of the plant. Ask students to stand as you lead them through a movement activity to describe the functions of the different plant parts.

ROOTS: Students bend over and wiggle their fingers near the ground. Students can make a slurping noise and move their arms up and down near the ground. This shows the roots slurping up water and nutrients from the soil.

LEAVES: Students hold their arms horizontally out from their bodies and turn their palms up to the sky and then down to the ground, like leaves turning in the wind. Leaves are the "kitchen" of the plant. They catch the sun's light and turn it into food for the plant.

STEMS: Students stand nice and tall to show that the stem is the backbone of the plant and helps it stand tall. The stem is also the elevator of the plant and helps bring water and nutrients to all its different parts.

FRUITS: Students pretend to eat a fruit. The fruit protects the seeds of the plant.

FLOWERS: Students make a circle with their arms above their head. Flowers are bright colors to attract pollinators to the plant so it can make seeds.

SEEDS: Students pretend to hold and plant a tiny seed. The seeds allow for new plants to grow.

- Then, read the book *Plant Secrets* by Emily Goodman. This book takes its readers through a plant's life cycle and highlights the major phases of plant growth: seed, plant, flower, and fruit. It is a good idea to have an assortment of edible plants to show the different parts of the plant that are described in the book.

- Finally, students can sing and dance along with the Banana Slug String Band Song, Roots, Stems, Leaves (lyrics attached to the end of the lesson) to review the different parts of the plant

- Remind students that when we eat fruits, vegetables, grains, and beans we are eating different plant parts!

EXPLORE

In this section, students work as a class or in small groups to explore the Guiding Questions through hands-on and minds-on investigations, along with experiences in the garden and kitchen. The adult leading each small group acts as a facilitator to assist students in coming to their own understanding. Please choose from the activities below that fit best with your students, class time, and learning goals.

1. **Classroom - Science: Classifying Edible Plant Parts.** In this investigation, students will sort plants by the part of the plant we eat. You will need a bin with fruits, vegetables, grains, and dry beans as well as an area with labels for the different plant parts: roots, stems, leaves, flowers, fruits, and seeds.

   Students take turns choosing a piece of produce and placing it into the correct edible plant part category. For example, a student would pick a carrot from the bin, and then place it into the category labeled "roots." As students choose and sort items, ask them to identify the edible part of the plant and show it to the group.

   Engage students in a discussion about the produce in each category. Point out that the plant parts in each category serve the same function, or job, in the plant, even though they may have different structures. The chart to the right offers some guidelines on the produce, grains, and dry beans you can use for this activity, as well as how to sort them.

ROOTS, BULBS and TUBERS Beet, Carrot, Garlic, Onion, Potato, Radish	**STEMS** Asparagus, Celery, Rhubarb
LEAVES Cabbage, Collard Greens, Kale, Lettuce, Spinach, Swiss Chard	**FLOWERS** Artichoke, Broccoli, Cauliflower
FRUITS Apple, Eggplant, Pepper, Tomato	**SEEDS** Beans, Corn, Oats, Rice

2. **Garden - Science: Observational Drawings of Plants in the Garden.** In the garden, students complete an observational drawing of a plant. Ask students to label each plant part they drew, and to circle the part of the plant we eat. Students can use their journals or the *Observational Drawing Worksheet* (attached to this lesson) as they carefully observe and draw plants.

3. **Classroom - Science: Labeling Plant Parts.** Use the *Plant Part Labeling Worksheets* attached to this lesson for a carrot plant, broccoli plant and tomato plant. After labeling all the plant parts, ask students to circle the plant part we eat. (Note: This lesson is meant to be an introduction to plant parts for young learners, so, for example, although carrot leaves are edible, we will focus on the root as the main plant part that we eat.)

4. **Classroom - ELA: Book Discussion.** Read the book *Tops and Bottoms* by Janet Stevens. This trickster tale tells the story of a lazy bear and a sneaky hare who convinces him to share his land and the food he grows. When the bear chooses the top half of the crop, the hare plants root vegetables and then reverses it. A Caldecott Honor book, this clever story reinforces the idea that we eat different parts of different plants.

5. **Classroom - Cooking: Prepare a recipe** using a variety of seasonal plant parts (ex: tomatoes, cucumbers, corn, chard, beets, kohlrabi). Ask students to identify the part of the plant they are using, and any parts that may be present that they are discarding as they prepare the recipe. See page 2 for suggested recipes.

EVALUATE AND CLOSE

The closing of the lesson is a time for students to reflect and synthesize what they have learned, and to share the food you have prepared together. Below are two ways to help students share and evaluate their learning at the end of each session.

BIG IDEA

We eat different parts of different plants.

GUIDING QUESTIONS

Why do plants have different parts?
Why do we eat different parts of different plants?

1. **Reflect and Share:** As a group, revisit the Big Idea and Guiding Questions introduced at the beginning of the lesson. Help students articulate how their understanding of these concepts has grown or changed, what questions they still have, and how they could continue to learn more.

   Suggested ways to **reflect and share:**

   - Ask students to identify the plant parts we eat on a variety of different plants.
   - Ask students to explain or act out the role that different parts of plants play in allowing the plant to grow, thrive, and reproduce.

2. **Eat and Appreciate:** Eating the food you have prepared together and taking time to appreciate the food is an important part of the FoodPrints experience.

   Suggested ways to **eat and appreciate:**

   - Assure students who are hesitant to taste new foods that they are not required to eat.
   - At the same time, explain that tasting new foods is the only way to find out if your taste buds are maturing and beginning to welcome new flavors!
   - Ask that everyone takes the first bite together and remind them that it is okay if their taste buds aren't ready for these flavors yet.
   - Take time to appreciate and recognize all the different people and natural resources involved in growing, harvesting, transporting, buying, and preparing the ingredients you are eating.
   - Ask students to thank their classmates for helping to prepare the food and work as a team.
   - Encourage students who are enjoying the taste of the food to express what they like and why.

NAME _____ DATE _____

OBSERVATIONAL DRAWING WORKSHEET

Instructions: Draw a detailed, realistic picture of a plant in the garden. Write a title with the name of the plant, label each part of the plant, and circle the part(s) of the plant we usually eat.

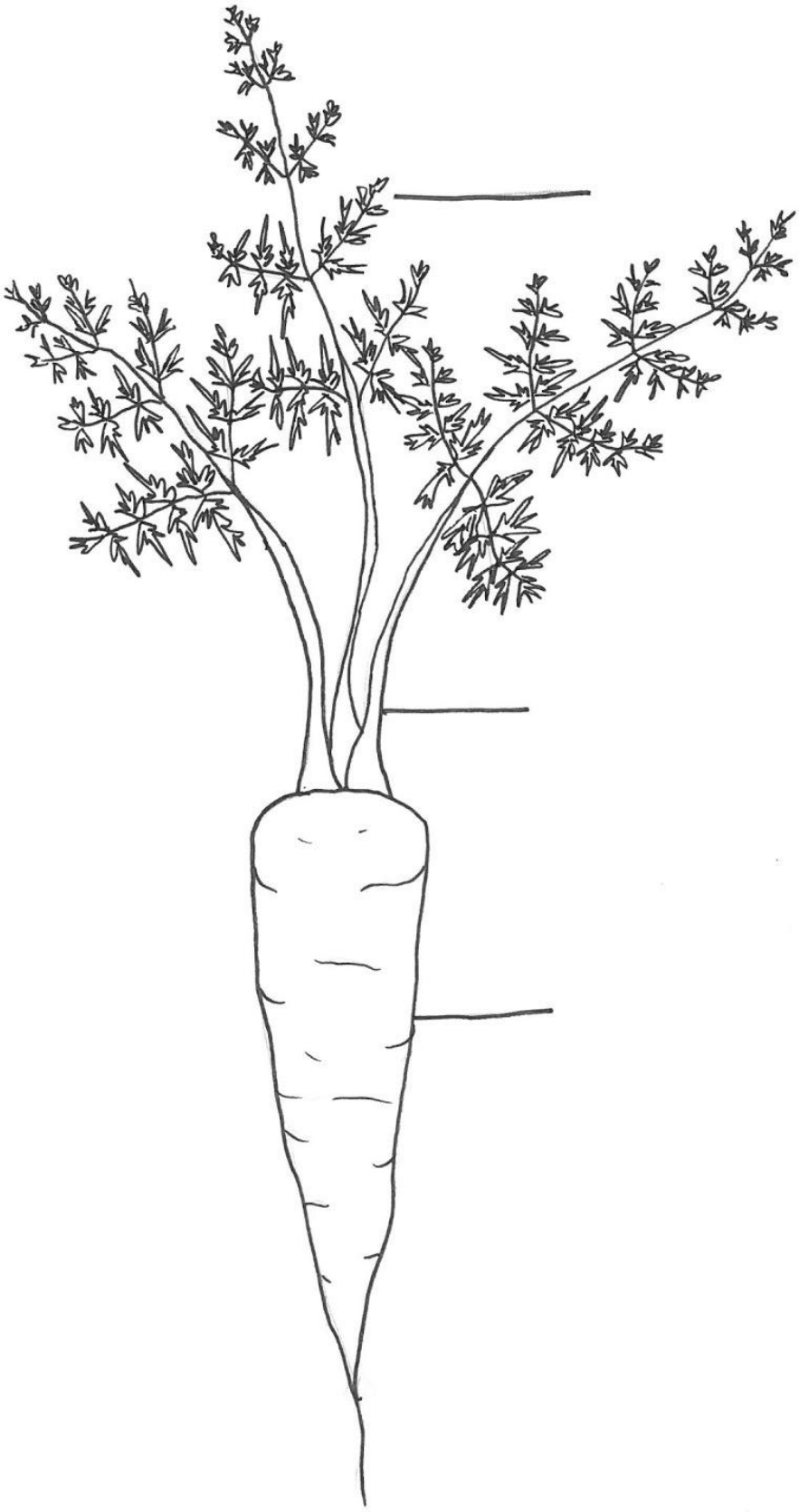
This is a picture of a _____

The part(s) of this plant that we eat is/are the _____

NAME _____ DATE _____

PLANT PART LABELING WORKSHEET: CARROT

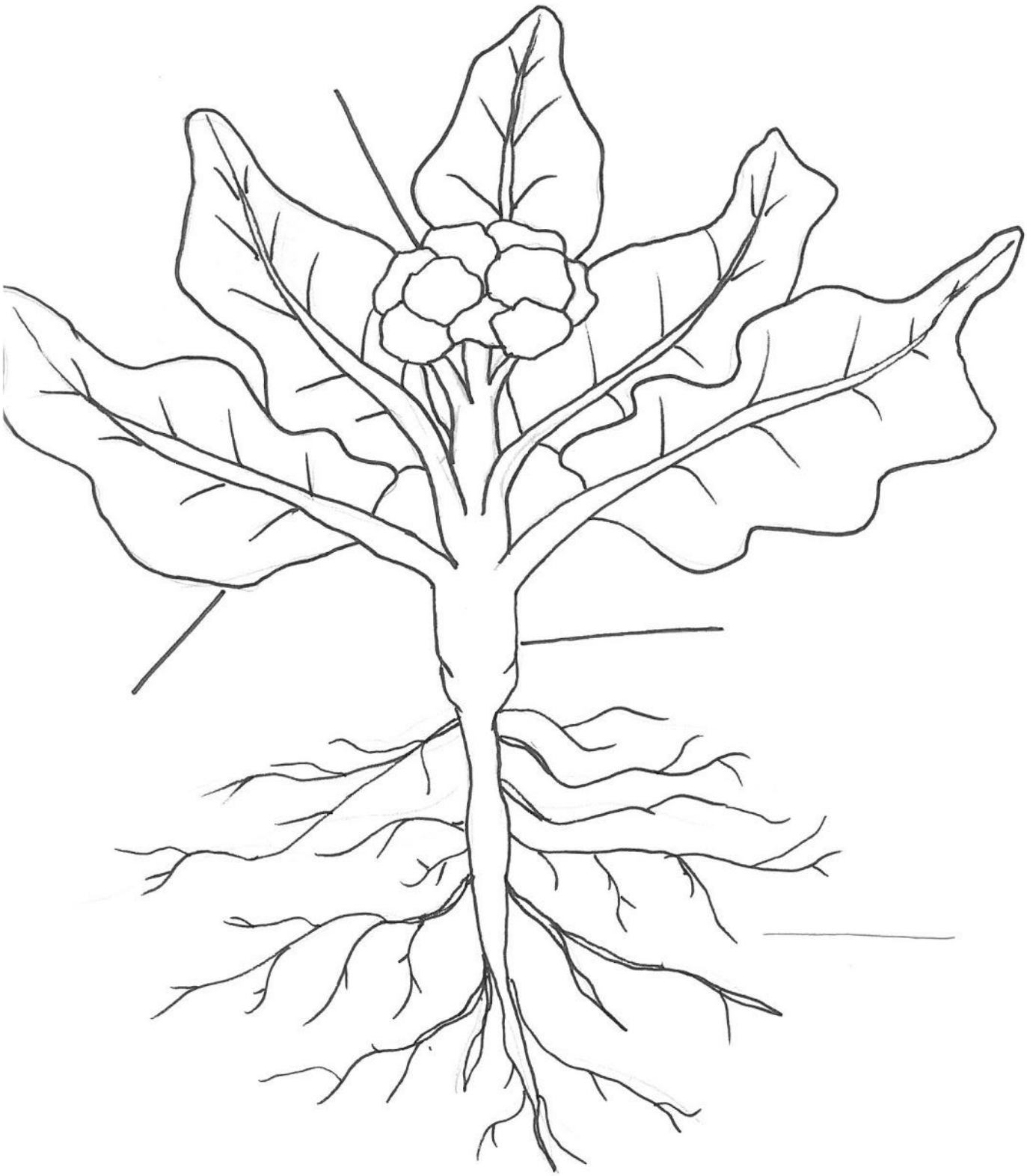
Instructions: Label each plant part. Circle the plant part that you eat.



NAME _____ DATE _____

PLANT PART LABELING WORKSHEET: BROCCOLI

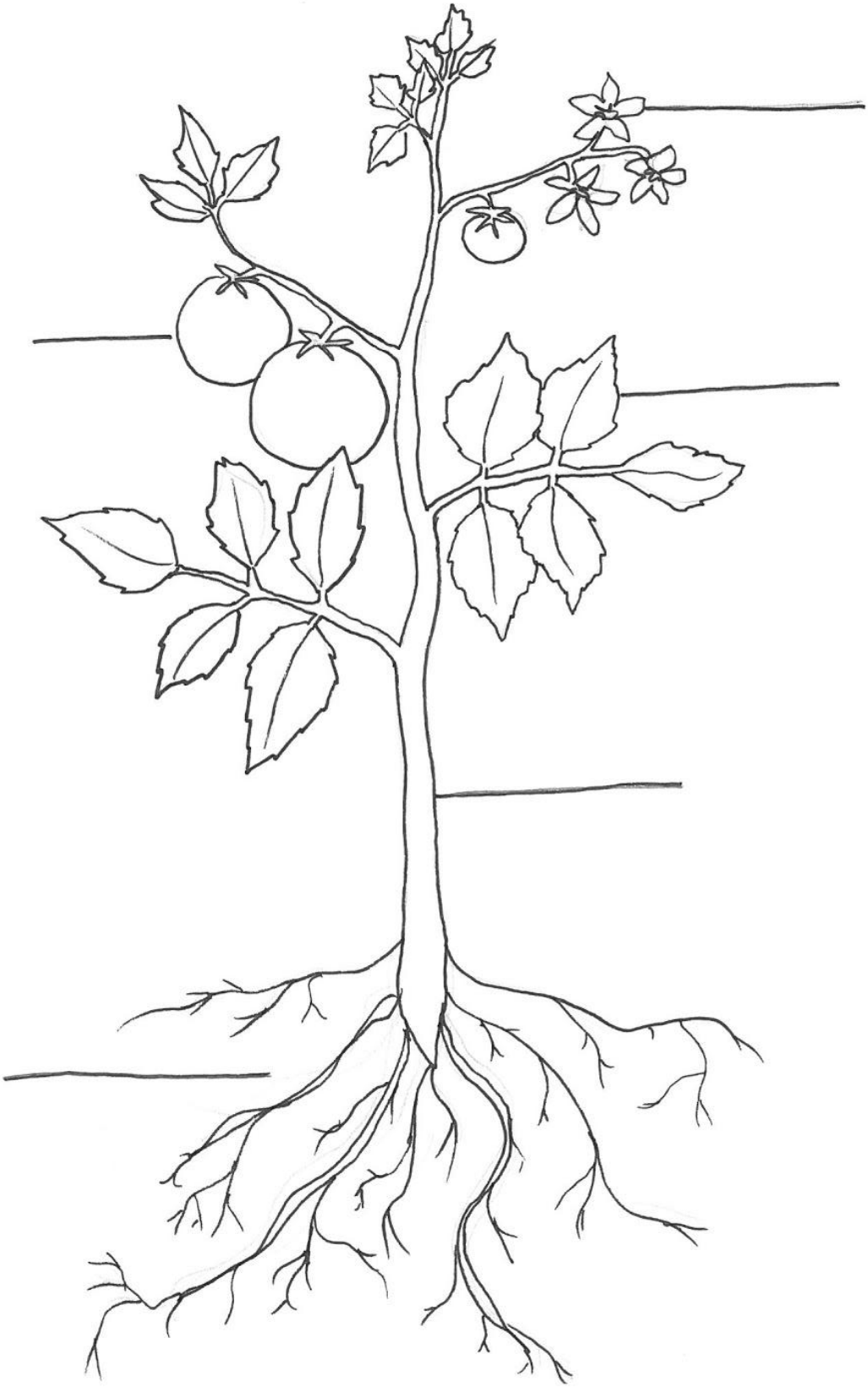
Instructions: Label each plant part. Circle the plant part that you eat.



NAME _____ DATE _____

PLANT PART LABELING WORKSHEET: TOMATO

Instructions: Label each plant part. Circle the plant part that you eat.



BANANA SLUG STRING BAND

"ROOTS STEMS LEAVES"

Chorus:
Roots, stems, leaves, flowers,
Fruits and seeds
Roots, stems, leaves, flowers,
Fruits and seeds
Roots, stems, leaves, flowers,
Fruits and seeds
Roots, stems, leaves, flowers,
Fruits and seeds
That's six parts, six parts, six plant parts
that plants and people need.

The roots hold the plant in the ground.
They gather up the water that falls around.
And there's a root inside of me,
because a carrot is a root that I eat.
That's six parts, six parts, six plant parts
that plants and people need.

A stem is an elevator growing up from the ground.
The water goes up and the sugar back down.
And there's a stem inside of me
because celery is a stem that I eat.

The leaves are the kitchens where the food is done.
They breathe the air and catch rays from the sun.
And there's a leaf inside of me
because lettuce is a leaf that I eat.

Chorus...
The flowers are dressed so colorfully.
They hold the pollen and attract the bees.
And there's a flower inside of me
because cauliflower is a flower that I eat.
The fruit gets ripe, then falls on down.
It holds the seeds and feeds the ground.
And there's a fruit inside of me
because an apple is a fruit that I eat.

Chorus...
Now you know what this whole world needs.
It's roots, stems, leaves, flowers, fruits and seeds.
There's six plant parts inside of me
because a garden salad is what I eat.

Chorus...