



# PRACTICING BOTANICAL ILLUSTRATION WITH PLANTS

## SUPPLIES

- An uprooted plant
- Paper
- Pencil
- Eraser
- Ruler or Measuring Tape\*

## DIRECTIONS

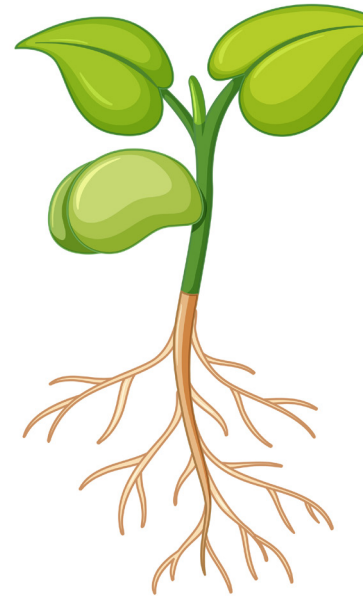
1. Prepare your uprooted plant for observation and drawing. Shake out the roots and remove as much dirt from the root hairs as possible. Place your plant on one side of a piece of paper, leaving room on the other side to draw your plant. Spread out the roots, stems and leaves so that all plant parts are visible.

2. Once your plant and drawing area is ready, locate the roots of the plant. Notice the structure of the root. Does it have smaller root hairs coming out of a very large and thick central root? If so, you are drawing a taproot. Does the plant have a thick network of small, fine roots that branch in all directions? If so, you are drawing a plant with fibrous roots. Take your time and draw the roots of the plant, noticing how the structure of the roots might help it do its job. Roots absorb or take in water for the plant and also keep the plant steady in the ground so that even a strong wind won't knock it over.

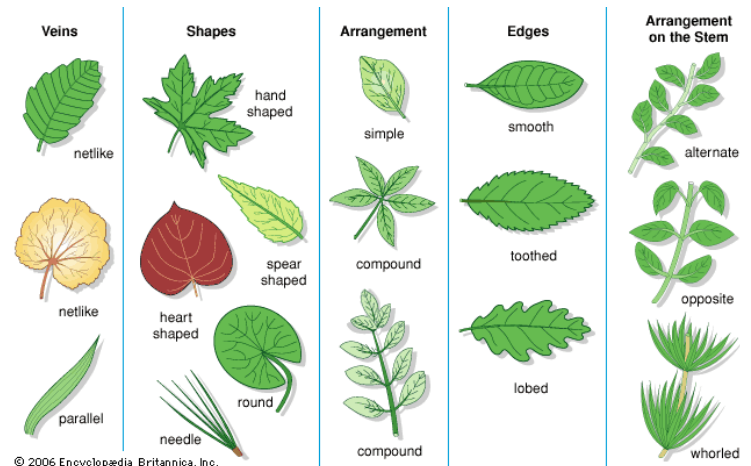
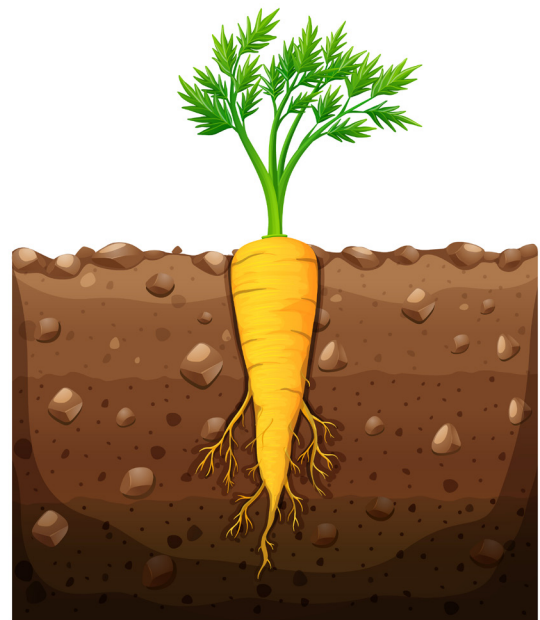
3. Next locate the stem of the plant. Does your plant have a single stem, or many stems that branch out in different directions? Is the stem straight or curved? Is it smooth, textured, or covered in thorns? Try to capture what you see on paper with your pencil. How do you think the structure of the stem might help it keep the plant alive? Stems carry water and nutrients back and forth between the roots and leaves. They also give structure to the plant while holding up the leaves and flowers.

4. Where are the leaves on your plant? Take a moment to locate them and observe their structure. Are the leaves needle-like or broad and flat? If it is a flat leaf, are its edges smooth or toothed or lobed? Can you see the leaf veins? How are the leaves arranged on the stem? Are leaves in pairs right across from each other (opposite arrangement), or is there one leaf on one side of the stem and then further up the stem another leaf on the other side (alternate arrangement)? After you've made all of these observations, draw what you see next to the plant. How might the shape of the leaf help the plant survive? Leaves are responsible for making food for the plant through photosynthesis. Each leaf combines water from the roots of the plant along with carbon dioxide and water that they absorb to create a sugar called glucose.

## FIBROUS ROOT



## TAPROOT





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## SUPPLIES

- |                   |                          |
|-------------------|--------------------------|
| An uprooted plant | Eraser                   |
| Paper             | Ruler or Measuring Tape* |
| Pencil            |                          |

## DIRECTIONS

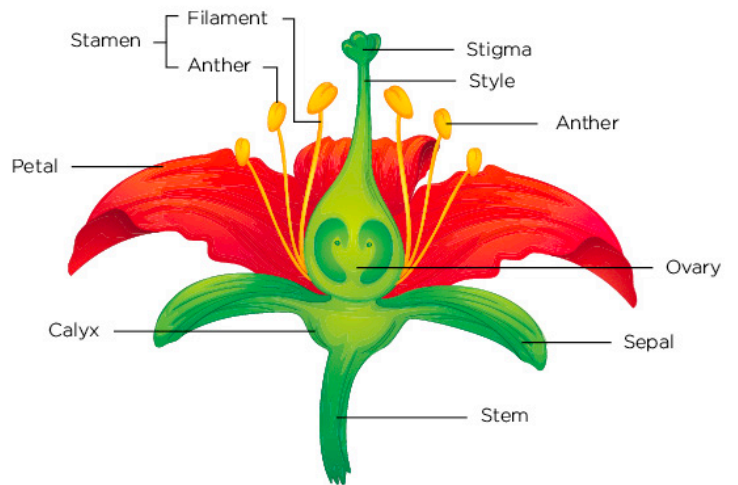
5. Next, look to see if your plant has flowers. Plants are not always flowering. Flowers help plants reproduce and make seeds by creating pollen that travels from one plant to another plant flower's ovary. Most flowers are made up of colorful petals, sepals, stamen that contain pollen grains, and the pistil that contains the style and ovary. Some flowers make nectar to attract pollinators to move pollen from one flower to another while others use wind or water to carry their pollen and don't need nectar. If your plant has flowers, take a look at them. How many petals does your flower have? Are the petals one color, or multi-colored? Are they large or small? Do you see any patterns on the petals? Are the central flower parts (stamen, pistil) visible? Draw what you see. How might the structure of the flower attract pollinators. What kind of pollinators might visit your flower based on its color and shape?

6. Once a flower is pollinated, the petals fall off and the ovary forms a fruit with seeds. Does your plant have any fruits? If it does, remove one of the fruits and open it to see the seeds inside. Draw a picture of the fruit and seeds. Fruits protect and contain the seeds of a plant. If your plant does not have fruits but you have seeds from a seed packet that come from the same flower you are examining, take a look at them. What color are they? How big are the seeds, compared to the large plant? Seeds are important because inside each one is an embryo or a baby plant waiting to sprout. Draw the seeds next to the plant.

7. Now that you have finished examining and drawing your plant, share it with others. See what information classmates and teachers can learn about your plant just by looking at your picture!

## \*BOTANICAL ILLUSTRATION CHALLENGE

For a more detailed and accurate plant illustration, measure the plant parts before drawing them. Use the same dimensions as those you measured to draw each of the parts and keep them to scale.





# PLANT PART ART

## Watercolor Painting with Roots

### SUPPLIES

Paper	Paper towel
Watercolor paint ( <i>liquid or solid</i> )	Plant Roots ( <i>green onions, dandelions, and many weeds have great roots to experiment with</i> )
Water	

### DIRECTIONS

1. Remove all dirt from the roots and gently untangle any matted areas.
2. Dip the roots into the water and then the watercolor paint. Remove any excess paint by gently pressing the roots against the side of the paint tray until it no longer drips.
3. Use the root “paintbrush” to create lines and patterns of color on your paper.
4. Rinse the roots in water. Pat dry with a paper towel before dipping in water again and applying new colors.
5. Experiment with different kinds of roots to see what kind of patterns and lines they form.

## Stamping with Stems

### SUPPLIES

Paper	Plant Stems ( <i>celery and sunflowers have great stems to use, but try out tree branches and small stems as well</i> )
Ink pad	

### DIRECTIONS

1. Wipe down stems and make a clean cut through the stem crosswise so that the end of the stem is smooth and flat.
2. Gently press the flat end of the stem into the ink pad until the end of the stem is adequately covered in the ink.
3. Firmly press the end of the stem covered in ink on the paper. Continue stamping until color no longer appears and repeat.
4. Use separate stems for separate ink pad colors so that the colors don't mix or bleed on the pad.

## Leaf Prints

### SUPPLIES

Paper	Fresh Leaf ( <i>leaves with thick vein patterns work best</i> )
Tape	
Unwrapped crayon	

### DIRECTIONS

1. Secure the leaf to a flat, hard surface using tape.
2. Place the piece of paper on top of the leaf so that the leaf is arranged where you'd like it to show up on your paper. Place pieces of tape around the edges of the paper so that it is secure.
3. Rub the long edge of the crayon over paper directly on top of the leaf. Continue rubbing until the full image of the leaf emerges.
4. Repeat with other leaves and colors as desired.





# PLANT PART ART

## Coloring with Fruit

### SUPPLIES

Paper

Fresh or Frozen Blueberries

### DIRECTIONS

1. Rinse and dry blueberries.
2. Pick up a blueberry. While holding the blueberry in two fingers, gently rub the outer skin on your paper. (All of the pigment is in the outer skin. Squishing the inside of the blueberry results in clear liquid).
3. Continue coloring with your blueberry until it no longer transfers pigment and then pick up another.



## Mosaics with Seeds

### SUPPLIES

Paper

Pencil

Glue

Various beans (*the more colors and patterns the better*)

### DIRECTIONS

1. Draw a simple shape or figure on the paper.
2. Paint or dot glue in a small portion of the design.
3. Place beans of different colors in the portion with glue.
4. Repeat gluing and placing beans until the picture or pattern is complete.

## Flower Pounding

### SUPPLIES

Paper

Scrap paper

Rubber mallet

Flowers (*pansies, violas, and vincas work well but experiment with lots of different flowers and even leaves!*)

### DIRECTIONS

1. Remove a flower from a plant, leaving behind all stems and leaves.
2. Place your piece of paper on a smooth, solid surface. Tiled floors or sturdy tables are great work spaces for this activity.
3. Place the flower upside down on the paper where you'd like the pigment to be transferred.
4. Cover the flower with a piece of scrap paper.
5. Use the rubber mallet to gently pound on the flower through the scrap paper. Lift the scrap paper occasionally to make sure that the pigment is transferring from the flower to the paper.
6. Carefully remove the scrap paper and peel away any left over flower pieces.
7. Repeat as desired with other flowers and even leaves.



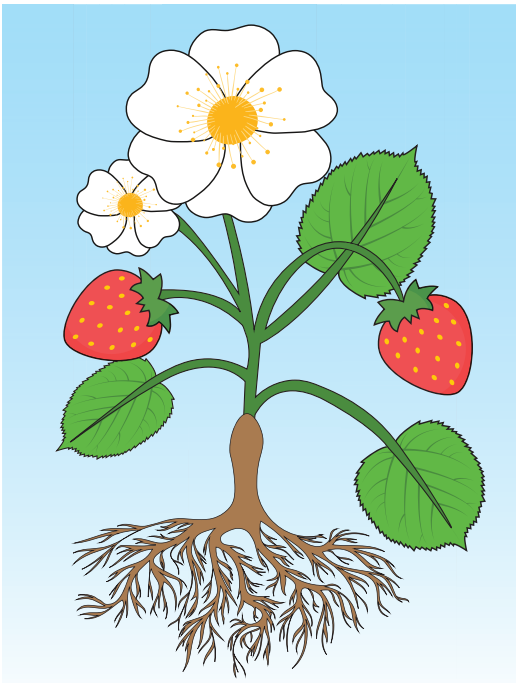


# ACTING OUT PLANT PARTS

## SUPPLIES

Image of a whole plant or  
images of plant parts

Your body



## DIRECTIONS

1. As a class, go over the parts of a plant and their functions.
2. Have students create body motions/poses that correspond to each plant part. Discuss how their motions and poses might correspond to how the plant part functions. E.g. "Oh wow, I see that you've spread your arms out to resemble the leaves of the plant. Your leaves would be able to capture so much sunlight." "Your body looks straight and strong just like a stem. Your stem would be able to hold up heavy leaves and flowers."
3. Practice motions and poses for each plant part several times. See how fast students can move from one plant part to the next.
4. Test student knowledge by having students act out plant parts when asked questions about each part. E.g. "Which plant part absorbs water for the plant and keeps the plant steady in the ground?" Make it extra challenging for students by encouraging them to use their body motions to communicate instead of their voices.



# FLOWER DISSECTION AND PLANT PART BRACELET

## SUPPLIES

Cut flowers or whole plants	Scissors
Plant parts collected from Outside	Tray
	Masking Tape or Duct Tape

## DIRECTIONS

1. Examine the flowers and plant parts that were collected safely from outside.
2. Cut or tear the flowers into their separate plant parts—Stems, leaves, flowers, etc
3. Group all of the different plant pieces on your tray by their parts. Create a pile of leaves, stems, flowers, roots, seeds, and fruit.
4. Notice any similarities or differences between the plant parts? Do all of the leaves look the same? How are they different? Were there some plant parts that you could not find?
5. Get help measuring the tape around your wrist and cut the tape to the appropriate length. This will be the base of your bracelet.
6. Tape your bracelet onto the table to keep it secure, keeping the sticky side up.
7. Gently press the plant parts that you separated earlier onto the tape to create patterns. Make sure to cover all of the sticky areas of the tape with plant parts. How many different plant parts did you use?
8. Once finished, tape your bracelet on and rock your flower power!





# DESIGNING A PLANT FOR YOUR FAVORITE HABITAT

All plants need water, carbon dioxide, nutrients, space, and sunlight in order to survive. Different biomes and habitats within each biome might be able to supply a plant with much of one resource and very little of another. For example, plants can get plenty of sunlight in a desert but not much water. Plants in the understory of a rainforest may have to compete for sunlight but have lots of water and space in the soil, while those in the upper canopy of the rainforest may have enough sunlight but are too far away from the soil and nutrients. Plants have adapted and developed structures that allow them to survive in these various environments.

Have students study their favorite biomes and discover what plant resources it has in abundance and which plant resources are scarce.

**Use the following questions as a guide**

## Sunlight

- Does this habitat get a lot of sunlight?
- Would a plant in this habitat have to compete for sunlight with other plants or structures?
- Would a plant need protection from the sun in this habitat?
- Does this habitat experience seasons? Is there sunlight available more during some parts of the year than others?

### PLANT DESIGN CONSIDERATIONS:

Leaf size and color determines how much sunlight a plant can absorb. Stem structures can help plants get closer to the sun or further away from the sun.

## Water

- Does this habitat get a lot of water?
- Would a plant in this habitat have to compete for water with other plants or even animals?
- Would a plant get too much water in this habitat?
- Does this habitat experience seasons? Is there more water available during some parts of the year than others?

### PLANT DESIGN CONSIDERATIONS:

Root and stem structures can determine how much water a plant can absorb and store. Leaf structures can cause plants to lose more or less water.

## Nutrients

- Are there a lot of nutrients in the soil?
- Would a plant in this habitat have to compete with other plants for nutrients in the soil?
- Are there more nutrients in other places in the habitat besides the soil?

## Air (Carbon Dioxide)

- Is carbon dioxide available for the plant to absorb in this habitat?
- Is the air thin in this habitat?

### PLANT DESIGN CONSIDERATIONS:

Most of a plant's mass comes from the carbon it absorbs through carbon dioxide.

## Space

- Does this plant have to compete with other plants for space?

## Other Considerations

- What is the average temperature of this habitat?
- Do temperatures change throughout the year in this habitat?
- Are there a lot of pollinators available in this habitat?
- Is there wind or water nearby to spread pollen or seeds?
- Are there animals that might feed on fruits?
- Are there a lot of pests or animals that might damage a plant in this habitat?

After students have answered these questions, **have them design a plant that would survive in their favorite habitat.** Students can draw a picture of their plant and explain why their plant looks like it does. Have students share with their classmates and compare their plants survival strategies with others.



# NATURE SELF-PORTRAIT

## SUPPLIES

Paper

Mirror

Found objects in nature

*(leaves, sticks, feathers, flowers, herbs)-  
either collected day of or beforehand*

Crayons

Markers

Pencils

Paint brushes

Glue

Recycled materials *(newspaper,  
bottle caps, cardboard, old magazines, etc.)*

## DIRECTIONS

1. Examine your features in a mirror and use pencils to sketch your facial features on paper.
2. Then with her paper and sketch in front of you and a mirror set up or close by, experiment putting together different natural and/or recycled objects to make your face, eyes, hair.
3. Once you've assembled a look you like, use the glue to secure the pieces down.
4. Use pencils, crayons, and markers to give added effect to your portrait.
5. When your natural self-portrait is finished, present your masterpiece to others and explain the choices you made. Why did you pick certain items? Are you happy with the result?
6. Once the glue dries, hang your portrait in the classroom and see how many faces you recognize.







ATLANTA BOTANICAL GARDEN

## ART INSPIRED BY PLANTS

Take a walk outside and observe plants around you. Enjoy their beauty and diversity. Find a plant or group of plants that interest or inspire you. Create a piece of art based on this plant. You could simply take a photograph of the plant or perhaps draw or paint its picture. You could sculpt the plant out of clay or create a two dimensional or three dimensional art piece made out of found objects. Write a song about your plant or a poem that tells about the plant or how it makes you feel. Share your creations with others so that they too can appreciate the special piece of nature that you have found.

