American Heart Association®
Teaching Gardens®

Grade Band
K–5

Time
30 minutes

Season
Any

Location
Outdoors, or Indoors if leaves are collected ahead of time

Leaf Rubbings

Description:

In this activity, students collect leaves and observe their veins, discussing what veins do for the leaf. Then they make leaf rubbings to illustrate these structures.

Connections to Content Standards:

Next Generation Science Standards (NGSS):

Disciplinary Core Idea:

LS1.A: Structure and Function
Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)

NGSS Crosscutting Concept: Structure and Function

Materials:

- Crayons with no wrappers
- Plain white paper
- Clipboards
- *Optional:* Illustration of veins in a human hand (search online for "human hand veins illustration" for many examples)

Preparation:

- If desired, scout out places to find leaves on the ground, ideally in more than one shape and size. The best leaves for leaf rubbings have prominent veins on the underside.

Activity:

1. **Discuss Leaf Veins:** *What do plants need to grow* (water, air, sunlight for making food, and minerals from the soil)? *Once a plant gets these things, how do those things travel from one part of the plant to another? Today we are going to look closely at leaf veins, which are structures that move water, minerals, and food from one part of the leaf to another, and also support the leaf (like a skeleton).*

2. **Collect and Observe Leaves:** Go on a short walk to collect leaves. First explain to students that they will be collecting fallen leaves, unless you want them to pick leaves from plants. Suggest collecting leaves with bumpy veins, which will work well for leaf rubbings; and suggest collecting a variety of shapes. Once your walk is complete and they all have leaves, gather in a circle or around a table and ask everyone to put their leaves on display in front of

Leaf Rubbings, *continued*

them. Ask students to take a moment to observe what they found. Then ask, *What do you notice?* Call on students to share what they observe about the leaves. If they don't include observations about the veins, ask them, *What are these bumpy lines? What do they do?* Look at the different shapes of leaves, and notice the different patterns of veins in the different shapes.

3. **Make Leaf Rubbings:** Demonstrate how to arrange leaves, veiny side up, under a piece of paper clipped onto a clipboard; and how to firmly hold the loose end of the paper down with one hand to prevent movement of the paper and leaves. Demonstrate, placing a crayon flat on its side and rubbing over the paper, over the leaf, to make a leaf rubbing. As you do this, point out how the vein patterns and leaf shapes come through. Encourage students to thoroughly rub the crayon over all the veins and edges of each leaf to get the best results. If desired, students can use more colors to color in their leaf rubbings, or add details such as arrows showing how they think water, minerals and food move through the leaf.

4. **Wrap Up:** Ask the students to look closely at their hands and wrists to observe the veins they can see through their skin. *How are these similar and different from the vein in leaves* (They also carry water, minerals and food; but they don't provide support.)? If desired, show them an illustration of veins in a human hand to compare with leaf veins.