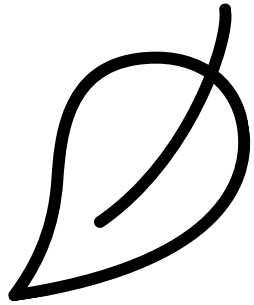
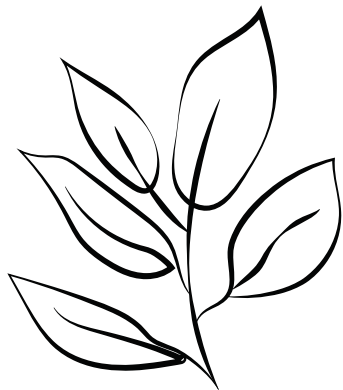


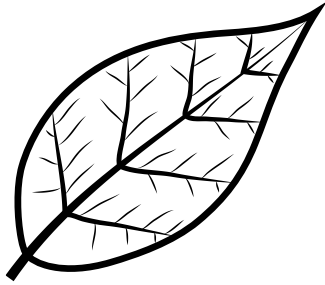
STEM SPARK

Presents

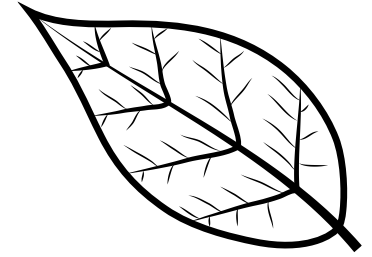


Leaf Lab!



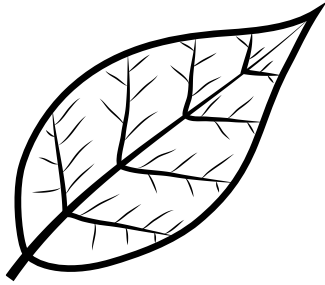


Leaf Lab

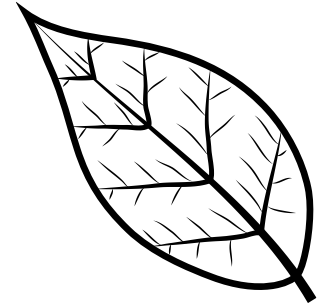


Every September, leaves begin to change colors and then fall to the ground. This beautiful seasonal display is science in action.

In this lesson, we are going to explore why leaves change color in the fall. You and your child will predict, hypothesize, and observe the breakdown of leaves to reveal its true colors in this simple chemistry activity.



Leaf Lab



When we crush the leaves we collected, we will let out the green chlorophyll and the leaf's true colors. The colors will spread out on our filter paper, letting us see which colors the leaf has inside it.

What colors do you think your leaves will be?

My hypothesis:

I think my leaf will have the colors....

Red

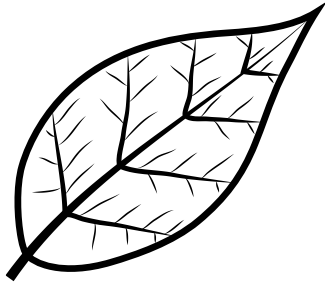
Green

Orange

Yellow

Brown

Blue



Leaf Lab



Materials:

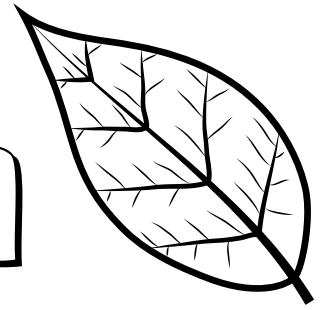
- Leaves, cut up small
- Isopropyl alcohol, rubbing alcohol, or acetone (nail polish remover)
- Coffee filter (cut into strips)

Directions

1. Pick a tree near you and collect a few leaves
2. Cut up the leaves into small pieces and put in a cup
3. Using the flat end of a spoon or other blunt object, grind the leaves into a pulp
4. Pour isopropyl alcohol onto the pulp until it covers the leaves
5. Lay the coffee filter so the filter just reaches the top of the alcohol solution
6. Wait for the colors to spread up the filter
7. Observe which colors appear



Leaf Lab Lesson



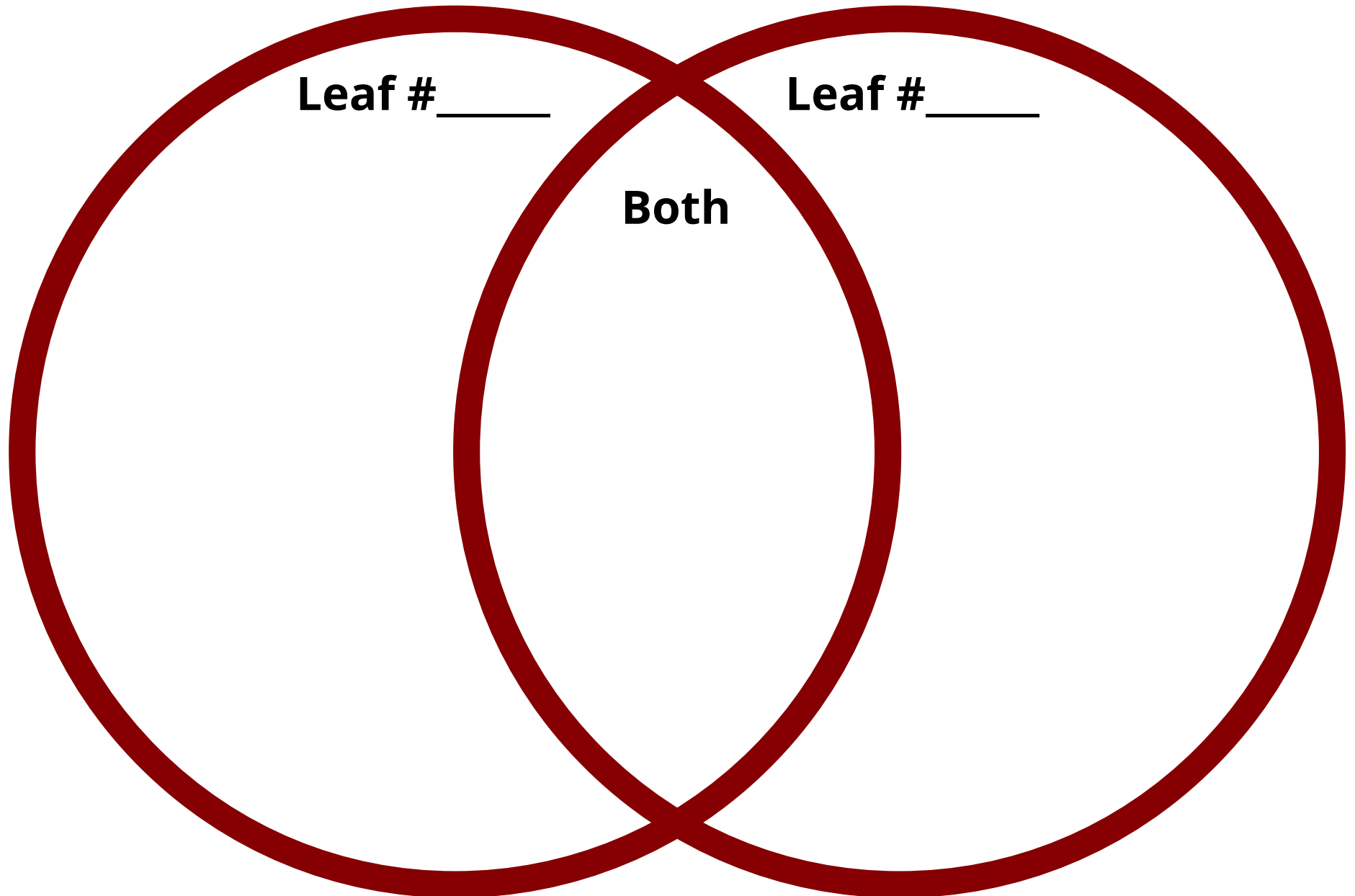
Q: Why do leaves change color in the Fall?

Leaves are green because they have a special green color called chlorophyll. This green color helps leaves change sunlight into food to make them healthy and strong.

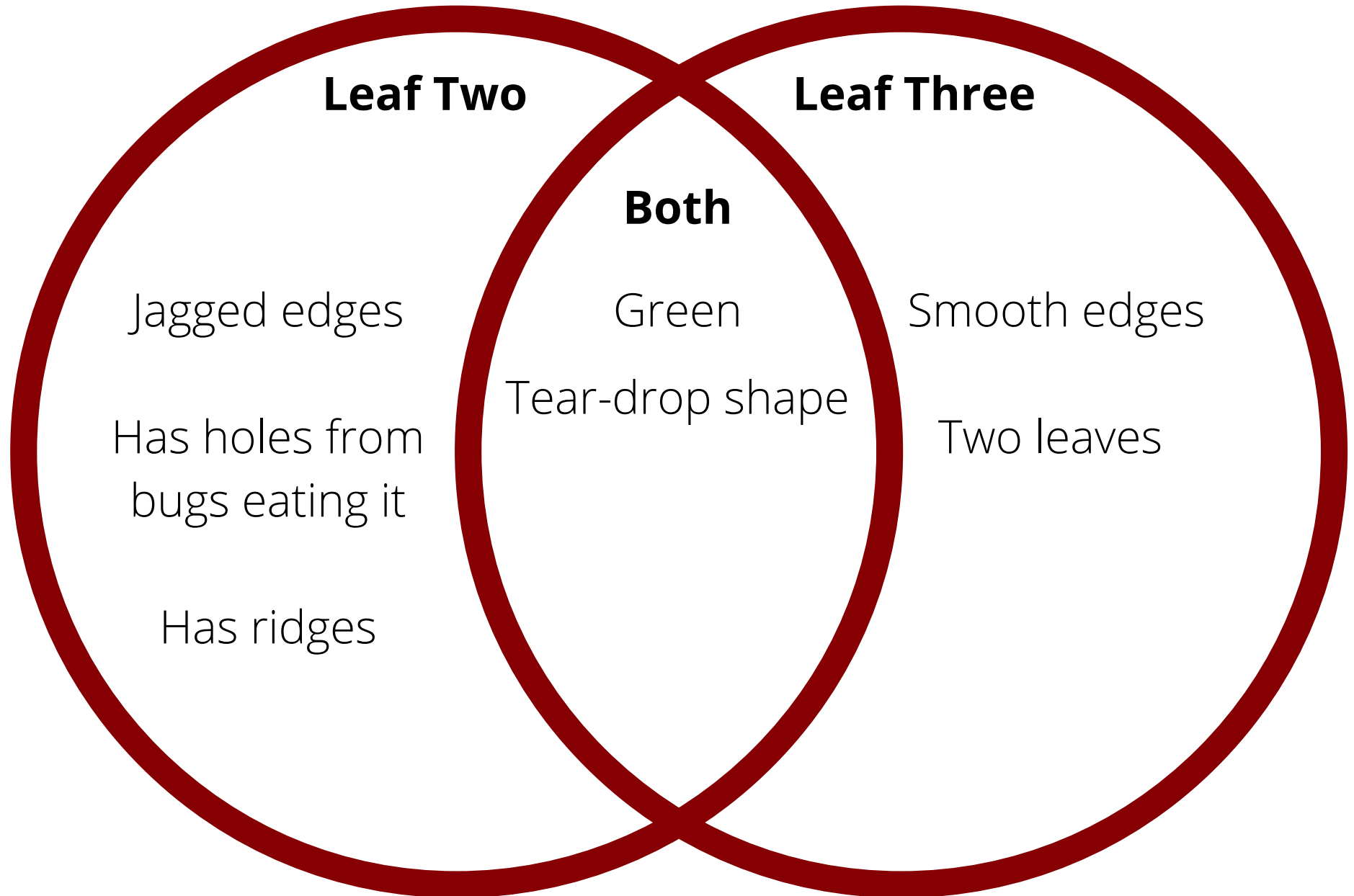
In the fall, the days are shorter. Shorter days means leaves get less sunlight, which means less food for the leaves. Without food, the leaves begin to change color. That's because the special green color, chlorophyll breaks down.

When the green color breaks down, then the leaf's true colors are finally revealed!

Compare and Contrast

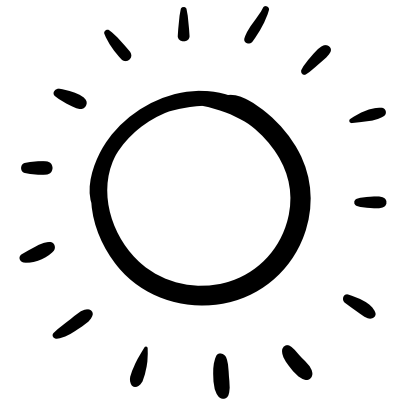


Compare and Contrast: Example



Word of the Week:

Chlorophyll



It makes plants green. It helps plants turn sunlight into food!

STEMSpark Stumper: Example

This leaf is from the tree at the end of the street, next to house 1084

Predicted color (Leaf Print):

Actual color (Collected Leaf):



STEMSpark Stumper:

This leaf is from _____

Predicted color (Leaf Print):

Actual color (Collected Leaf):

--	--

Leaf Lab Results:

Color the strip here to match the colors on the filter from the activity. Label the chlorophyll (hint, it's the green part!), and the other colors you see.

Based on these results, what color you think this leaf would have turned in the fall?

I think my leaf would have turned ...

Red

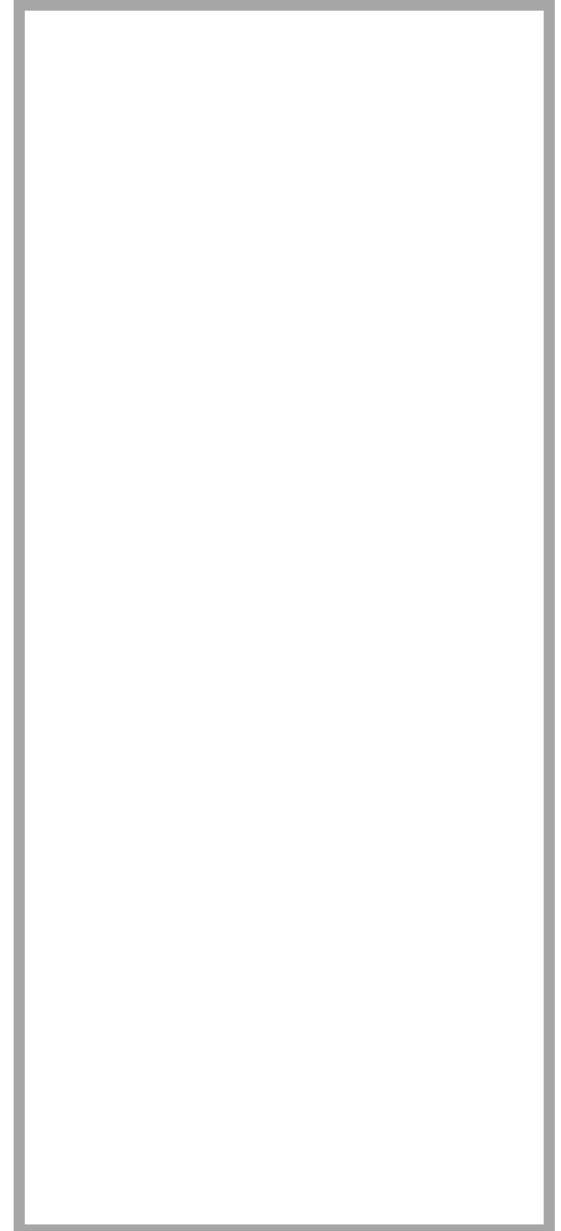
Green

Orange

Yellow

Brown

Blue



Leaf Lab Results: Example

Color the strip here to match the colors on the filter from the activity. Label the chlorophyll (hint, it's the green part!), and the other colors you see.

Based on these results, what color you think this leaf would have turned in the fall?

I think my leaf would have turned ...

Red

Green

Orange

Yellow

Brown

Blue

Yellow

Orange

Brown

Chlorophyll

