



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences –particularly students of color and girls – by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

learn how a leaf can release air by performing a science experiment



Supplies Required:

Fresh Leaf
Clear Bowl or Jar
Hot Water

Video

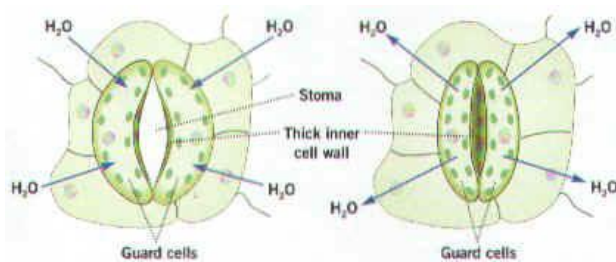
Leaf stomata experiment: <https://tinyurl.com/yyq5gb85>

Overview

Did you know that plants can breathe just like humans? Now you're probably asking yourself, how can a plant release air without a mouth or nose?

The answer to that last question lies within something called a **STOMA**, which is a pore in the skin of the leaf or stem of a plant, forming a slit that allows movement of gases in and out.

In this activity, you will be able to observe how the stoma works to allow a tree leaf to breathe in carbon dioxide and breath out oxygen, cleaning our air!



Instructions

1. Pluck a **fresh** leaf from a plant.
2. Place the leaf into a clear bowl containing extremely hot water
~ **Make sure that you handle the hot water with care or it will burn you.**
~ **Ask an adult to help you if you can**
3. Do you observe any bubbles coming out of the leaf?
~**Don't forget to record your observation**
4. Can you know see how a plant can breathe?
5. Now that you've witnessed leaves breathing, let's do some research about how plants can breath and clean the air?
6. If plants are responsible for cleaning our air, what happens when humans tear down trees, like those in the rainforest? Why do we need to protect them?

Additional Resources

1. How plants breathe: <https://tinyurl.com/y48cqanl>
2. How house plants can purify the air in your home: <https://tinyurl.com/y2z5aulz>
3. Learn about the importance of the Amazon rainforest: <https://tinyurl.com/y52bvesd>
4. How you can help protect the rainforest: <https://tinyurl.com/y3akhg33>

Share It Out

Share on social media: What did you learn today? Share a fact you learned on social media or take and share a video of your science experiment online to inspire others by the amazing powers of plants! Do you have plants in your home purifying the air you breathe? What can people do to help the rainforest?

Share your ideas on social media using the hastags:

#PlantTrees
#SavetheRainforest
#ProjectExploration
#STEMatHome

For more activities like this one, go to www.projectexploration.org/stemhome. If you're interested in learning more about Project Exploration and our free events, programs, and activities, please find us on social media and be sure to follow!



Call or text us for help: 312-772-6634

www.projectexploration.org