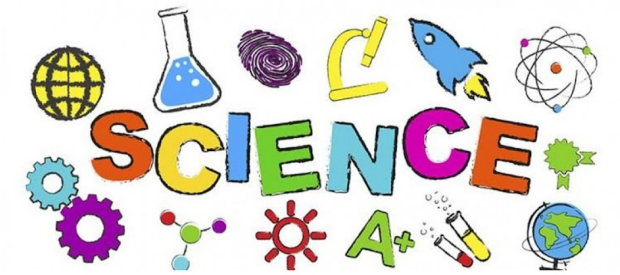
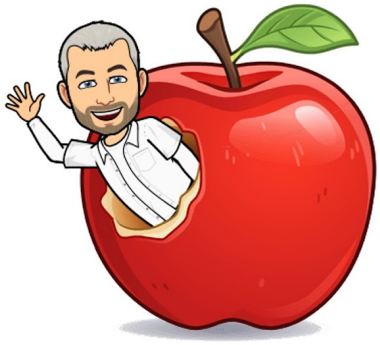




Plant Structures Help Them Survive

What I Will Be Learning In This Mastery Badge:

In this mastery badge we will discover how plants use their physical structures (plant parts) to survive and thrive in their environments.

What This Packet Includes:

It is important that you complete all aspects of this packet so that you gain the knowledge and skills that we are working on.

I. **Discovering Lab**
A discovering lab is a fun, introductory lab, where we discover the knowledge on our own.

II. **Video Instruction**
You will watch a video presented by Mr. Bertoch, and answer questions about it.

III. **Literacy Practice**
Reading and writing are critical life skills, and also very important to science. You will read the assigned article and complete a writing prompt.

IV. **Applying Lab**
An applying lab is how you pass off the Mastery Badge. It serves as the quiz. It is a hands on demonstration that you have mastered the skills and content of this badge.

Key Things We Will Learn In This Mastery Badge

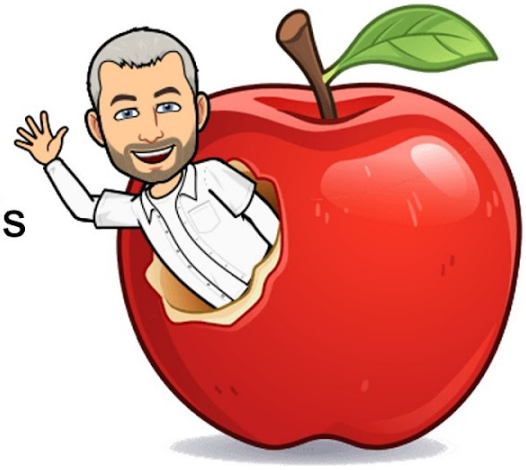
Some of the most important things we will learn in this mastery badge:

- Plants are adapted to their environments
- Plant structures are unique to their environments
- These plant structures allow them to thrive in their environments

Name:_____ Date:_____

Discovering Lab

Learning Through Hands On Activities



Discovering Plant Structures

Making your own discoveries.

Scan This QR Code To Watch Mr. Bertoch Give You Directions For This Assignment

1. With an adult's supervision, go outside and collect six plant specimens. Then diagram (draw) a detailed picture of each specimen in the space provided.

2. Label the structures (plant parts) of each of your specimens by writing the names of each part on your diagram. (Examples: Roots, leaves, stems, thorns, seeds, flower, etc).

My 1st Specimen (Diagram)	**My 2nd Specimen** (Diagram)
My 3rd Specimen (Diagram)	**My 4th Specimen** (Diagram)
My 5th Specimen (Diagram)	**My 6th Specimen** (Diagram)

Notice that all six specimens have many things in common, but some of them are also unique. Complete the following chart based on your observations and research.

Plant Part (Structure)	What the plant uses it for
Cuticle (Plant Skin)	Protects the plant
Roots	
Stem	
Leaves	
Flower	
Seeds	

Questions That Make You Think:

Always answer thinking questions using complete sentences.

1. What parts did all six of your plants have?

2. Did any of your plant specimens have parts that the others didn't? (examples might be thorns, flowers, etc). Explain what these parts do, and why you think the plant has them.

3. What might happen to a plant if one or more of its parts were removed, such as the roots, the leaves, etc? Explain your answer.

4. Why do you think each type of plant is different from the others? Explain your answer.

Handsome Science Teacher One Take Videos

Good Job On Completing The Discovering Lab!
Now let's connect your discoveries to the vocabulary. Mr. Bertoch has created a video for you to watch.

Take Your Time, Pause And Rewind As needed
You are not in a hurry! It is more important that you understand the video than that you finish it quickly. Take your time. If you don't understand something, pause the video and discuss with an adult.

When you finish this video, you should have a good understanding of the concepts that have been taught. If you find yourself confused, rewind, and rewatch.

The Video For This Mastery Badge Can Be Opened Using This QR Code

This Mastery Badge includes one video:

Watch The Assigned Science Video
Scan This QR Code To Open And Watch The Assigned Video For This Mastery Badge

Check Point

I watched the video carefully, and understood what Mr. Bertoch taught me.
(If not, that is okay. Watch the video again, and discuss it with an adult)

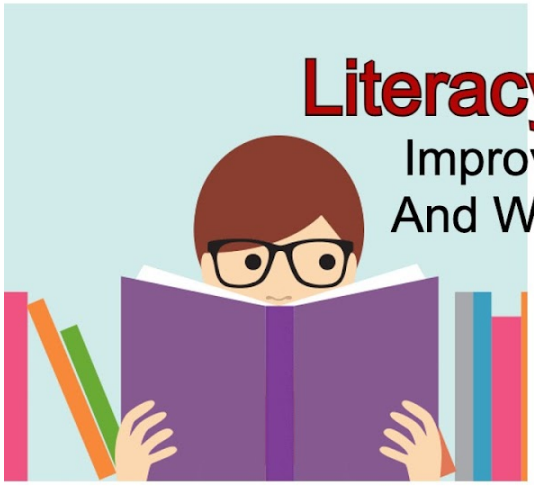
What I Learned From This Video

One very powerful way to help yourself remember what you learned from the video is to summarize it in your own words and in the form of pictures.

Write one sentence in your own words explaining what you learned from the video. Then draw a picture of something you learned from the video.

What I learned from this video (One Sentence):

A picture of something I learned from the video:



Literacy Practice

Improving Our Reading And Writing In Search of Knowledge

Activity: Reading And Writing

Directions: Reading and writing are very important life skills. Good scientists must be able to learn through reading and communicate their own discoveries through writing.

Scan This QR Code To Watch Mr. Bertoch Give You Directions For This Assignment

1. **Practice Reading For Understanding**
   Read the article below **for understanding**. Reading for understanding means that you take your time and monitor your own learning. If you get to the end of a sentence and you do not remember or understand what you read, **re-read it.**

2. **Practice Writing To Communicate**
   Complete the writing prompt below. Do your very best to write clearly so that others will understand what you are saying. This means using correct spelling, grammar, and writing, taking your time to think about the best ways to clearly communicate to others the main ideas that you are trying to get across to them.

Read The Assigned Article Carefully For Understanding.
https://handsomescienceteacher.com/Online-science-classes-kids/plants-are-adapted-to-their-environments/

Scan This QR Code To Open And Read The Article That Goes With This Mastery Badge

Check Point

Let’s make sure that you really did read for understanding!
Remember that it is important to hold yourself accountable to a high standard and to take pride in your own success as a learner.

I Read For Understanding. I did not skim the article. I understood the material that the article discussed.

Quiz Time

Complete the quiz at the end of the article and post your score in the box below. Your goal is to get at least 75% on the quiz. Did you accomplish this goal?

%

Now Let’s Write To Communicate

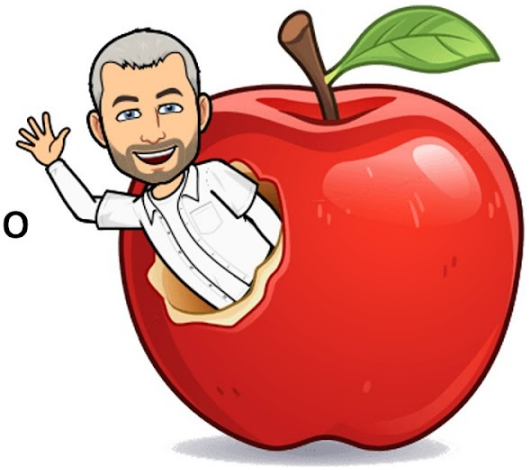
Remember that when you write to communicate you are taking your time, and explaining the topic in a detailed and concise way. Don’t rush! You are not in a hurry. Think about what you are going to say, and plan how you will say it. So that someone else who reads your sentences will understand them easily.

Writing Prompt: Write two sentences describing how plants use their structures (plant parts) to survive.

Name:_____ Date:_____

Applying Lab

Proving That We Can Do It Ourselves



Applying Plant Structures

Applying What We Have Learned.

Scan This QR Code To Watch Mr. Bertoch Give You Directions For This Assignment

Experimenting On Plants

Earlier you collected plant samples and made diagrams showing your observations of the various plant parts. Now you are going to do hands-on experiments with plants to see what happens when you remove some of their parts.

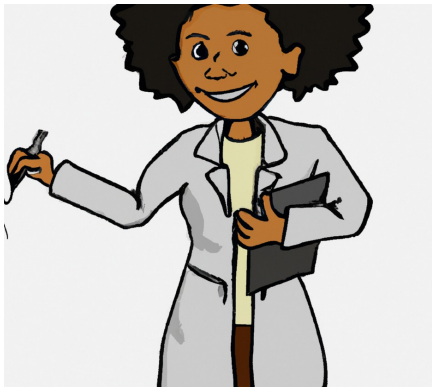
Supplies:

For this lab you are going to need three healthy plants. You can obtain these very cheaply from a local greenhouse, or collect samples from outside. Make sure that all three plants are the same type (variety/species), that they are the same size, and that all three start out healthy.

Plant 1: Remove The Roots

Remove the roots of your first plant, being careful not to damage the rest of it. Then place the plant (without roots) back into a pot of healthy soil, place it in a location where it will get plenty of sunlight, and make sure to water it. Observe your plant for one week.

What happened to your plant? Describe how your well your plant survived without roots.

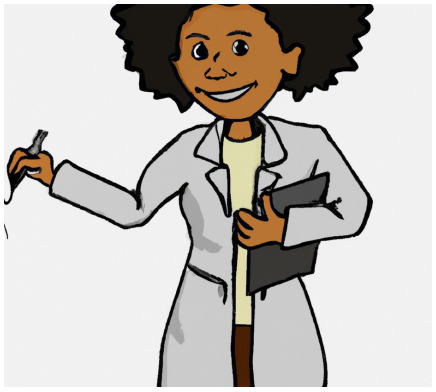


Draw A Picture of how your plant looked after going one week without roots.

Plant 2: Remove All Leaves

Remove the leaves of your second plant, being careful not to damage the rest of it. Then place the plant (without leaves) back into a pot of healthy soil, place it in a location where it will get plenty of sunlight, and make sure to water it. Observe your plant for one week.

What happened to your plant? Describe how your well your plant survived without leaves.

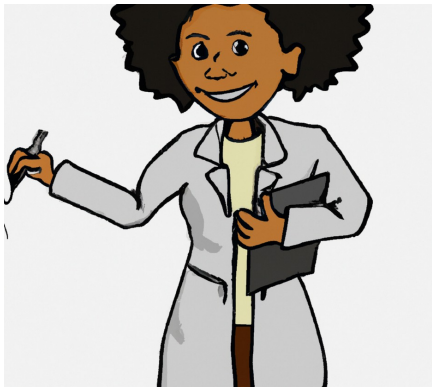


Draw A Picture of how your plant looked after going one week without leaves.

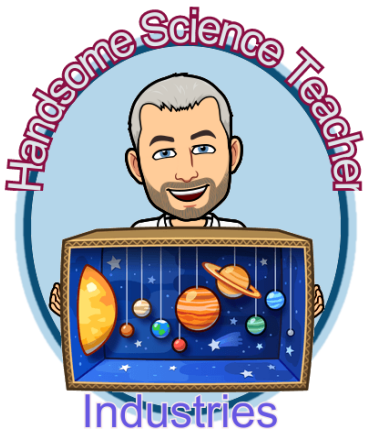
Plant 3: Healthy Plant

This is our healthy plant, to compare our other samples to. Do not remove any of its parts. Place this plant into a pot of healthy soil, and then put it in a location where it will get plenty of sunlight, and make sure to water it. Observe your plant for one week.

What happened to your plant? Describe how your well your plant survived with all of its parts.



Draw A Picture of how your plant looked after going one week with all of its parts.



Congratulations! You Have Completed The Entire Mastery Badge
You have worked really hard to earn this mastery badge. More importantly, you have worked hard to earn your knowledge!

Time To Evaluate Your Work
Check each of the following to evaluate your work:

1. Did you do every assignment?
2. Did you read the assigned article?
3. Did you watch the assigned video?
4. Did you answer all the questions using complete sentences?
5. Are your answers accurate?

My Self-Evaluation:
Based on the criteria listed above, I believe I have passed off this Mastery Badge because… (Be detailed ans specific)

Mastery Badge Counselor Evaluation:
I have reviewed this student's work. Based on the criteria listed above I hereby certify that they have passed off the Mastery Badge because… (Be detailed and specific) Note: Any adult may serve as a Mastery Badge Counselor, so long as they are committed to ensuring the highest standards of excellence.

Student's Signature	**Date**	**Signature of Mastery Badge Counselor**	**Date**

Certificate For Your Homeschool Records

The following certificate which has been awarded through self-evaluation by the student, and also certified by a mastery badge counselor proves that the student listed thereon has completed all the work and has mastered all the concepts for the specified topic.

Keep this on file as evidence of your successful completion of this topic.
If audited by the State, these certificates stand as evidence that you have worked on and successfully completed a rigorous science curriculum.