



The Fungi Kingdom & Unicellular Kingdoms

What I Will Be Learning In This Mastery Badge:

In this mastery badge we will continue our study of living things and how they are classified. Looking at the various types of unicellular lifeforms and fungi. We will explore the major types of each, as well as the structures of fungi and how they are classified.

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:

- Archaeobacteria vs Eubacteria
- Structures and types of bacteria
- Protists
- How fungi are classified
- Four types of fungi
 - Sac Fungi
 - Zygosporangia
 - Basidiomycetes (Club Fungi)
 - Imperfect Fungi
- Structures of fungi

Name: _____

Date: _____



Discovering Lab

Learning Through Hands On Activities



Activity: Observing Fungus

Directions: Follow the directions below to learn as much as you can about fungi



Video Instructions Available For This Assignment. Watch this video to learn how to do this assignment, and why it is important.

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

Goal: To learn as much as you can about fungi.

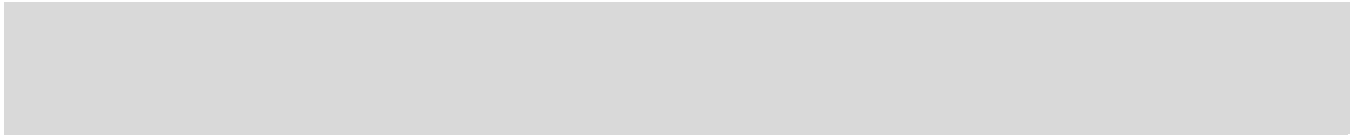
Fungi Reproduction:

Yeast is a type of fungus that we commonly use to make bread. In this experiment, you will be observing how temperature affects yeast reproduction.

1. Fill a glass of cold water. Adding ice to the water can help you get better results.
2. Fill a second glass with warm water (not too hot).
3. Add two teaspoons of sugar to each glass and stir it in.
4. Add a teaspoon of active yeast to each glass (do not stir the yeast in)
5. Observe Both Glasses

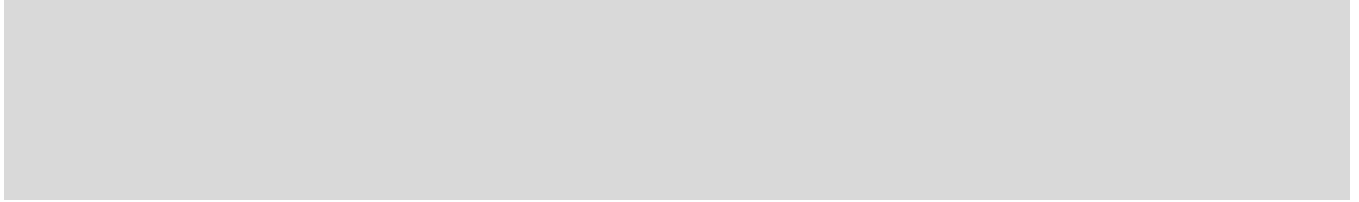
What happened to the yeast when you first add the yeast to the surface?

Wait five minutes and then smell each glass. Describe how each smells.

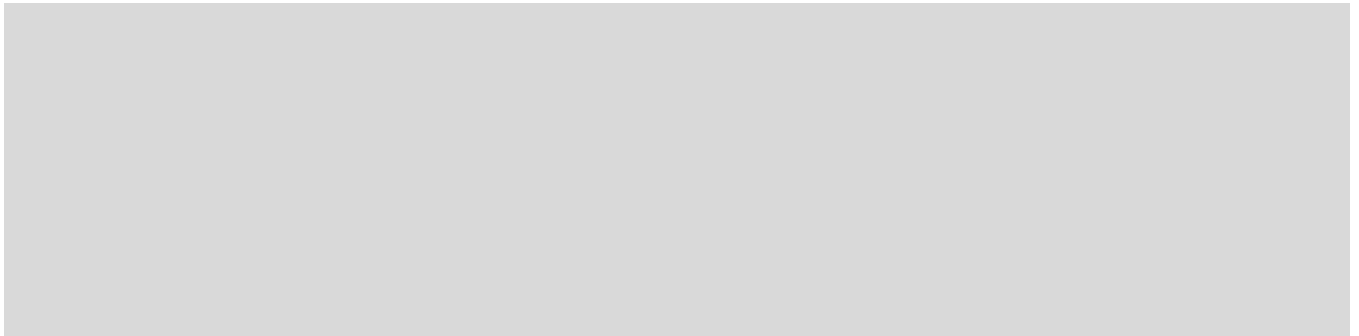


Now stir each glass and then continue to observe.

After several minutes describe how the yeast in each glass is alike how it is different.




Based on your observations, how does temperature affect fungal growth?



Draw A Picture

Scientists often draw pictures to record their observations. Draw a picture showing what the yeast in each glass looked like after several minutes.



Fungi Observation:

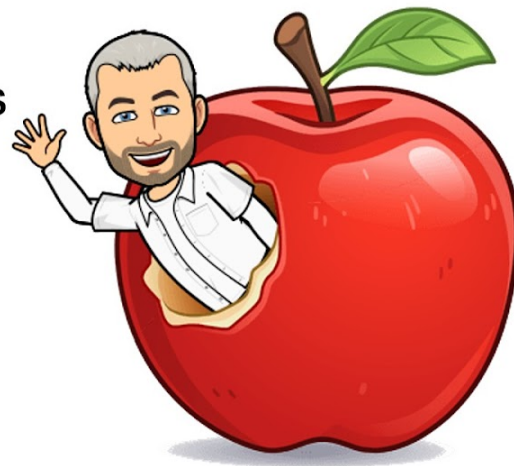
For this observation, you will be dissecting a mushroom. You want as complete of a sample as you can find.

Mushrooms can be found in your yard, or at the grocery store. If you take one from your yard, do not eat it! They can be very poisonous.

Carefully dissect the mushroom. If you have a magnifying glass it would be a good idea to use it to make your observations. Note as much as you can about the various parts of the mushroom, as you carefully take it apart.

Mushroom:

Describe what you observed in detail. Include descriptions of the parts of the mushroom that you saw.



Handsome Science Teacher One Take Videos

Now that you have completed the Discovering Lab let's watch the video that goes with it. In this video Mr. Bertoch will help connect the discoveries that you made during the lab to the broader concepts covered under this badge, and will also introduce the vocabulary that goes with these concept.

Take Your Time, Pause And Rewind As needed

You are not in a hurry! It is more important that you understand the concepts in this video than that you finish it quickly. Take your time. If you don't understand something, pause the video and use the Internet or other resources to look up the concept that has you confused.

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

Let's make sure that you really did take your time and watch the video carefully! 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 watched the video carefully, and paused to look up anything I didn't understand.

Recording Your Learning

On the next page, you will record your learning and connect it to things you already know.

Ten Things I Learned From This Video

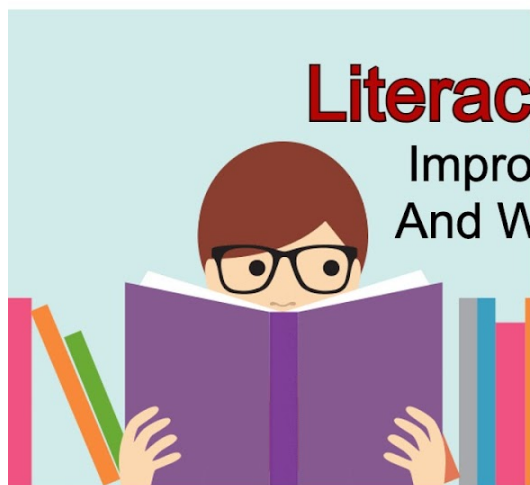
A powerful tool to help you retain what you learn is to take notes. Notes give you something that you can look back at later, to quickly remind your brain reinforcing the memories for the concepts you have learned. Record ten things that you learned or that you perhaps already knew that were discussed in this video.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Now, Let's Connect These New Concepts To Things You Already Knew

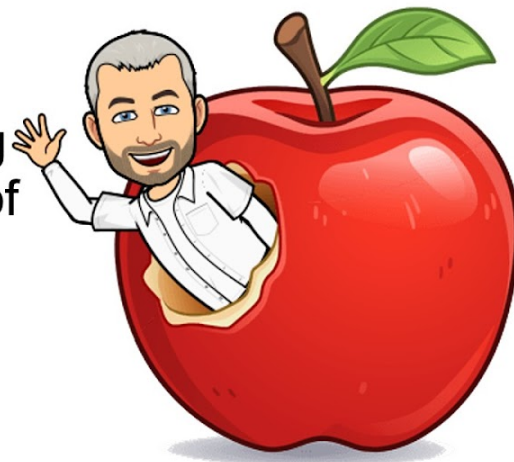
Another great way to help your brain retain new things is to connect these new concepts to other things that you already know. This gives your mind a place to store the new knowledge. Imagine that you are placing the new knowledge on a shelf in your brain next to facts that are already in there.

Write a paragraph explaining how the concepts taught in this video relate to things you already knew. There are no wrong answers. What are some things that you already knew that this video reminded you of?



Literacy Practice

Improving Our Reading
And Writing In Search of
Knowledge



Activity: Reading And Writing About Biomes

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.



Video Instructions Available For This Assignment. Watch this video to learn how to do this assignment, and why it is important.

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.

Article:



Read The Assigned Article Carefully For Understanding.

<https://handsomescienceteacher.com/Online-science-classes-kids/the-fungi-kingdom/>

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 paragraphs will understand them easily.

Writing Prompt: Write three paragraphs explaining the role that fungi play in an environment. Be detailed. Give examples.

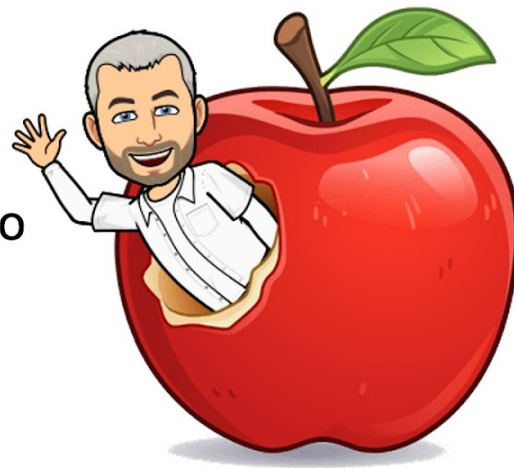
Name: _____

Date: _____



Applying Lab

Proving That We Can Do It Ourselves



Activity: Growing Fungi

Directions: In this activity you will be growing your own mold colony to observe how quickly fungi spreads under different conditions.



Video Instructions Available For This Assignment. Watch this video to learn how to do this assignment, and why it is important.

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

Goal: To learn how fungi spread and grow.

In the video we learned that fungi spread by spores that are carried in the air. These spores are present everywhere around us. In this lab we will test whether or not there are fungi spores in the air in your house, and how long it takes for these spores to start growing.

1. Take four pieces of fresh white bread. If possible, use homemade bread. It works better for this experiment.
2. Moisten two of the pieces of bread carefully. You don't want to get them soggy, just slightly moist. You can do this using a spray bottle. Be careful not to get them too wet though. Just a few sprays.
3. Place each piece of bread into a ziplock baggie and mark which pieces are moistened and which are not.

Important: From this point on leave the bread in the baggies. Mold spores can cause sickness.

4. Place one dry piece and one wet piece into the fridge.
5. Leave the remaining two pieces out so that they stay at room temperature.

Wait 10 days

Observations

Draw a picture of each bread sample. Be careful not to open the baggies.

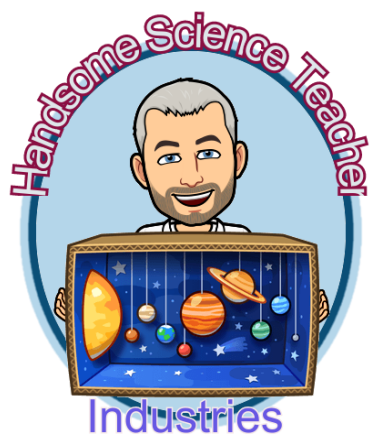
Moist / Cold	Dry / Cold
Moist / Warm	Dry / Warm

1. Which piece of bread had the most mold growth?

2. What pattern do you see in how moisture and temperature affect mold growth

3. **Consider:** Your bread was only exposed to the air for a very short period of time. Just a couple of minutes, before you put it into the ziplock bag. Yet, in these very brief minutes, it was exposed to fungi spores. What does this tell us about fungi spores? How common are they in the air around us?

4. All fungi and some plants reproduce using spores. Explain what a spore is and how they work.



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 and 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.

