

ATTINA & THE GREAT FUNGUS GARDEN



By Sayo Ogunfowora

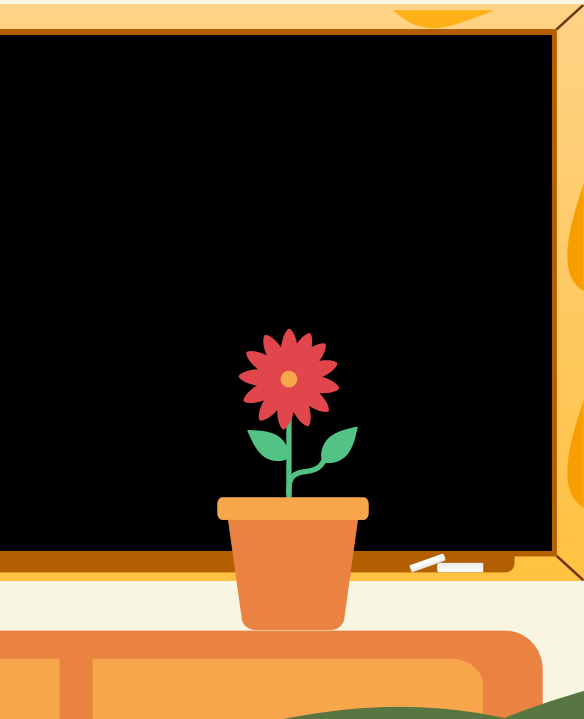
For Zoology 567: Animal Behaviour, Fall 2021, instructed by
Dr. Mindi Summers at the University of Calgary



Attina could not WAIT to get to school today... it was finally career day!

A day where Attina and her classmates would get to learn all about the different jobs in the ant colony.

Once Attina got to class, Mrs. Thorax gathered all the children up for story time.

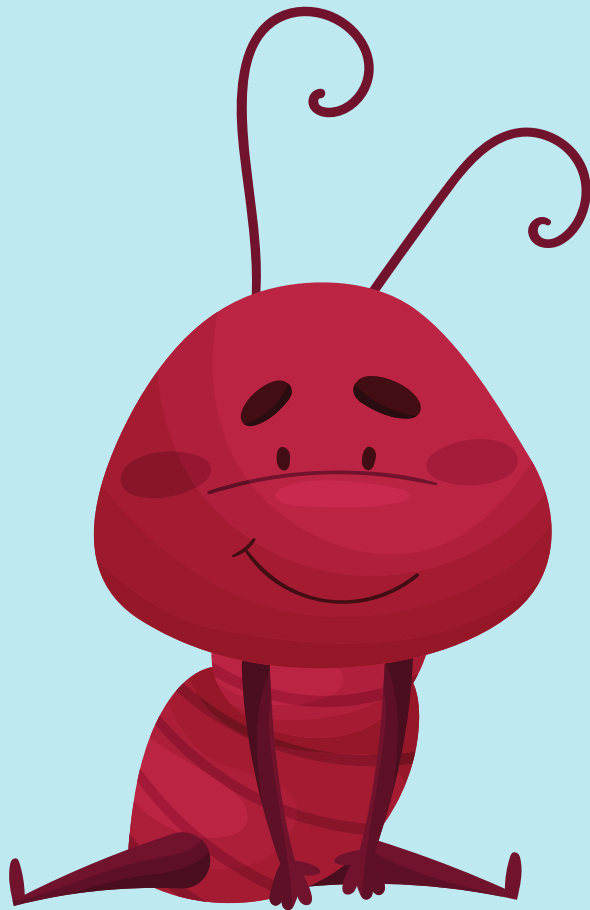


Millions of years ago, our antcestors began growing fungus gardens
(1, 2)

As fungus farmers, it's our job to nourish and protect the great fungus garden! In return, the fungus garden provides us with food for the whole colony
(1, 3)



"Today you will all get to go see what jobs the small and big workers of the colony do. One day, you'll be the farmers of the great fungus garden!" said Mrs. Thorax.



I wonder what type of job I will have in the future...

First, the class visited the workers who take care of the garden inside of the nest.

Good morning!
We are the workers of the colony that help protect the great fungus garden from danger. We mainly defend the garden from pathogens, which are things that can infect the garden and make it sick.

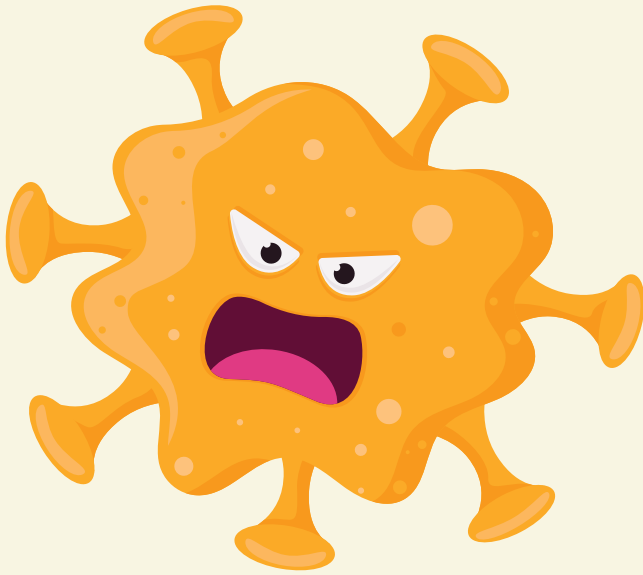
(3, 4, 5)

THE GREAT
FUNGAL GARDEN



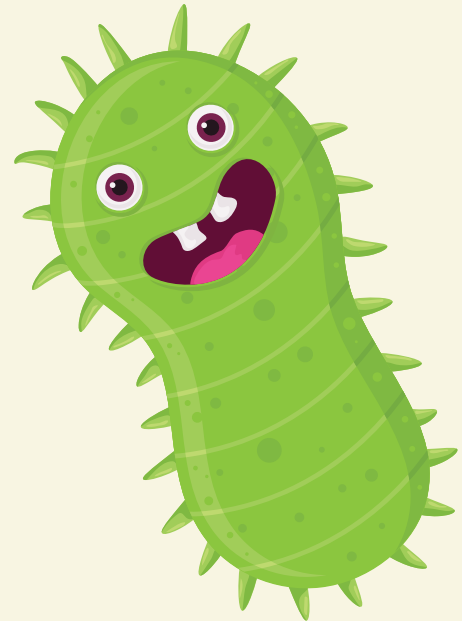
SMALL WORKER

"Small workers eat any small bits of the pathogen that we find on the garden (3, 4, 5). While the pathogens are inside of our mouths, our friends, bacteria, help us to take away all of the pathogen's weapons (1, 4, 6). Once the pathogen is disarmed, it is no longer dangerous, and can be spat out" said the small worker ant (1, 6).



PATHOGEN

VS.




BACTERIA

This is a process called GROOMING!

(3, 4)

Just like we have been farming for millions of years, these pathogens have existed for millions of years. If it were not for the bacteria, who have been our friends since we began farming, we would not be able to grow our fungus gardens (1, 6).



A large, stylized pink ant with long, curved antennae and a friendly expression. It is holding a large, white, fluffy mass in its mouth. The mass contains several small, yellow, spiky pathogens with angry faces. The ant is standing on a brown, textured ground with orange spots.

Us big worker ants protect the great fungus garden by WEEDING it. To do this, we use our mouths to chomp off any pieces of the garden that have already been infected with the pathogen. Then we carry the pieces away from the garden.

(3, 4, 5)

BIG WORKER

The big worker continued "we are also the first ones to notice any pathogens in the garden, and direct small workers to the location of infections so that they can do their job of grooming. To do this, us big workers leave scent trails throughout the nest for the small workers to smell with their antennae!"

(7, 8)




Antennae
(an-ten-ay)



SMALL WORKER

BIG WORKER

Next, the class visited the large workers who prepare food to feed the garden. They started by following the large workers outside into the bright and sunny day.



Us big outdoor workers help keep the great fungus garden alive by cutting down leaves and grass to feed it (5, 7). Follow me to our leaf-cutting site!

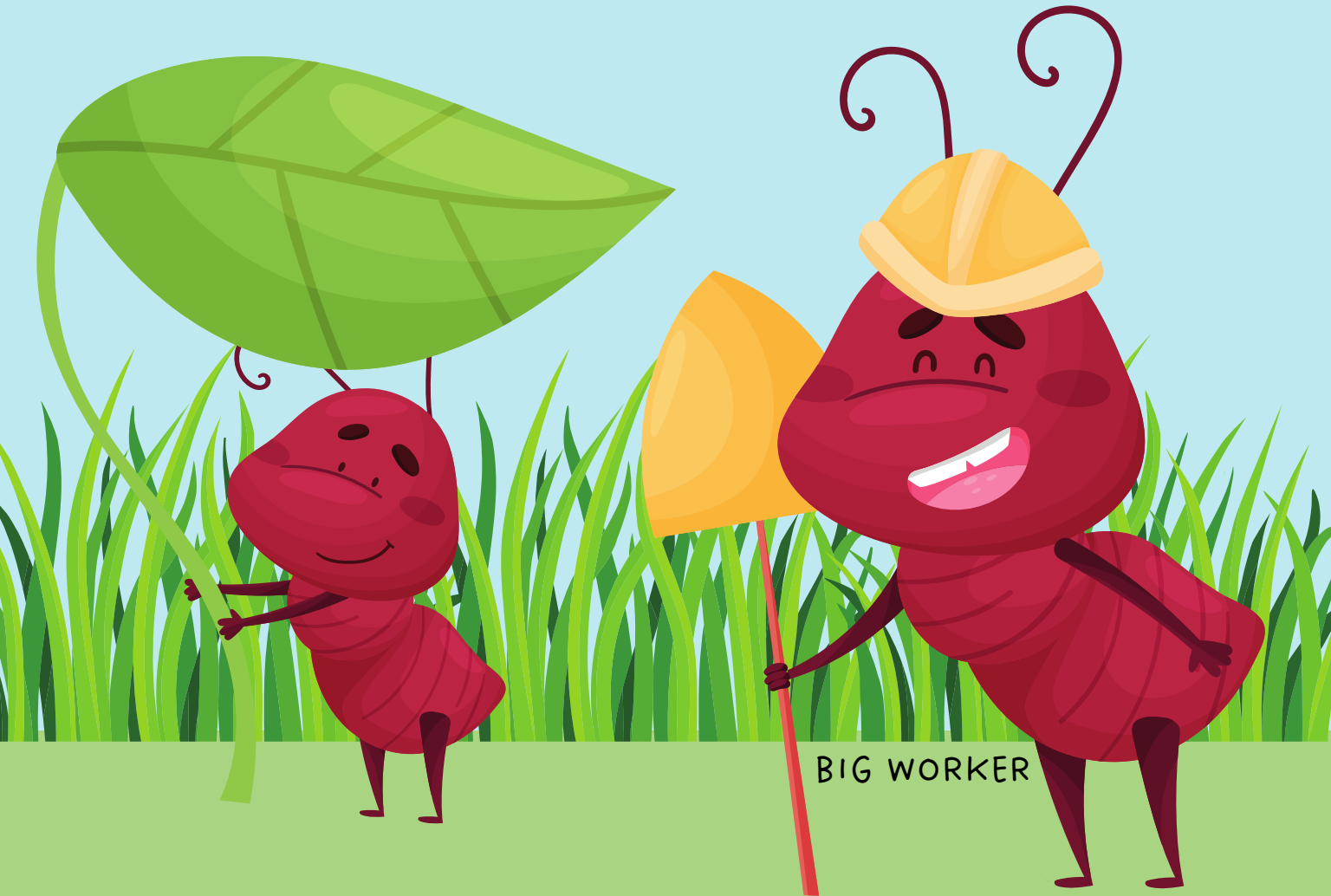
BIG WORKER

Attina, Mrs. Thorax, and the rest of the class followed the large workers down a path. Soon they reached a clearing where plants, leaves, and grass towered over their heads, green as can be.



Attina had never felt so small!

“Before we cut anything down, we have to make sure we pick the best leaves possible!” said the large worker.



“We can do this by looking closely at the leaf. The greener and thicker the leaf, the better for our garden. Once we have a leaf picked out, we use our jaws to cut it down and then carry it back to the nest.” (7)

Attina and the class tried picking out and cutting down leaves. It was a lot tougher than Attina thought!


The first leaf Attina picked ended up being too brown and dry, but once Mrs. Thorax began showing how to choose greener and thicker leaves, Attina got the hang of it!

(7)

The real struggle was cutting the leaf down and carrying all that weight back to the nest - WHEW was it heavy!



Once everyone arrived back at the nest with their leaf cuttings, they were greeted by a group of small worker ants.



Before these leaf cuttings can be fed to the great fungus garden, we have to lick and clean them to ensure that no pathogens have infected the leave." (9)

THE GREAT
FUNGAL GARDEN

These small workers are also responsible for cleaning other sections of our nest, which helps to stop pathogens before they even reach the great fungus garden (5, 9)

SMALL WORKER

At the end of the day, Attina, Mrs. Thorax, and the students all returned to the classroom.



Attina thought long and hard about this question - there was so much she learned; how could she possibly pick one?

After much debate, Attina finally had an answer:



The most exciting thing Attina learned was that every job in the colony, no matter big or small, no matter indoor or outdoor, had an important part of keeping the great fungus garden safe! (10)

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