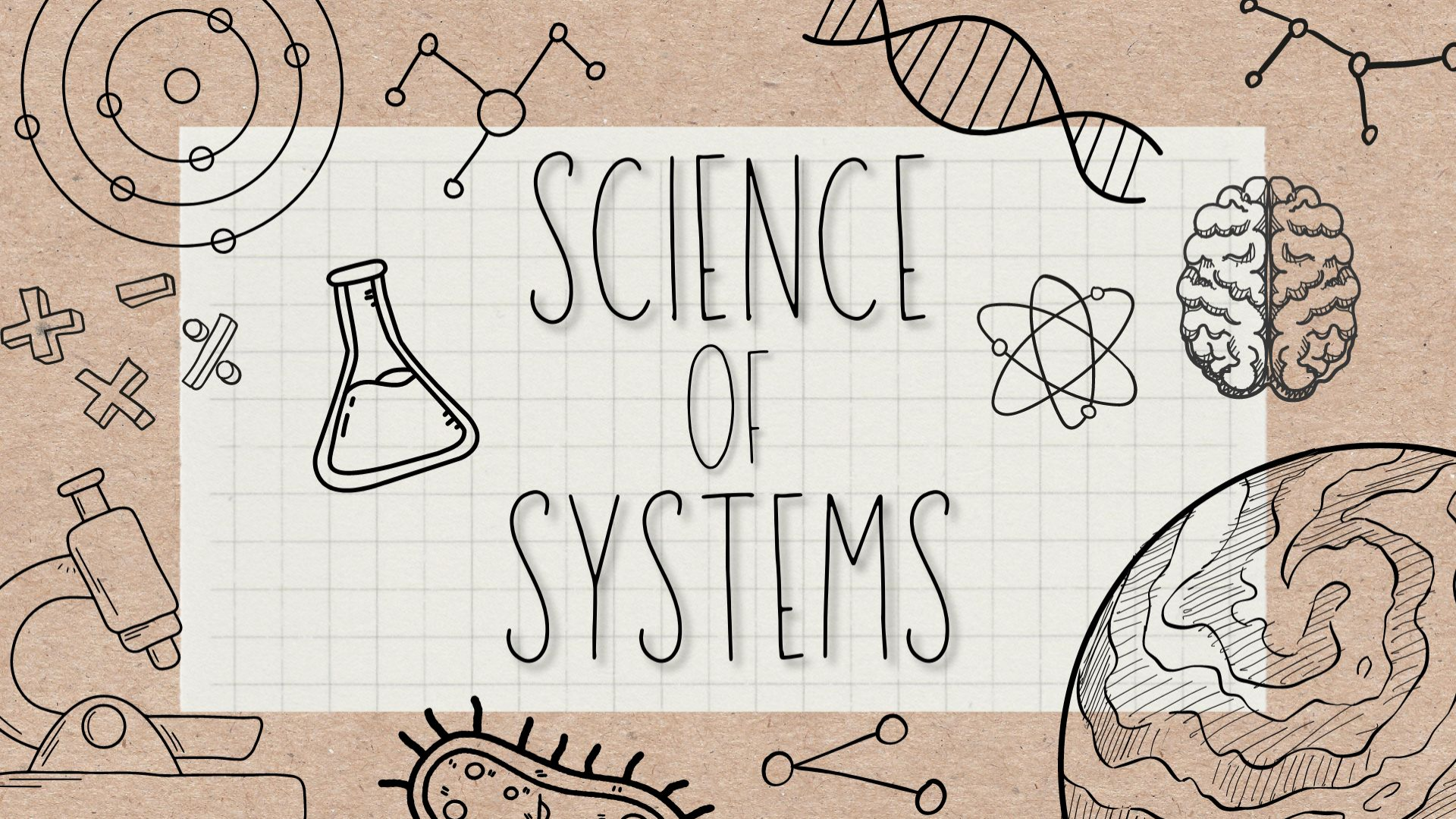
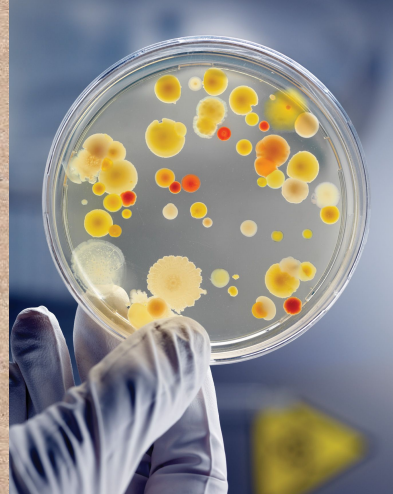
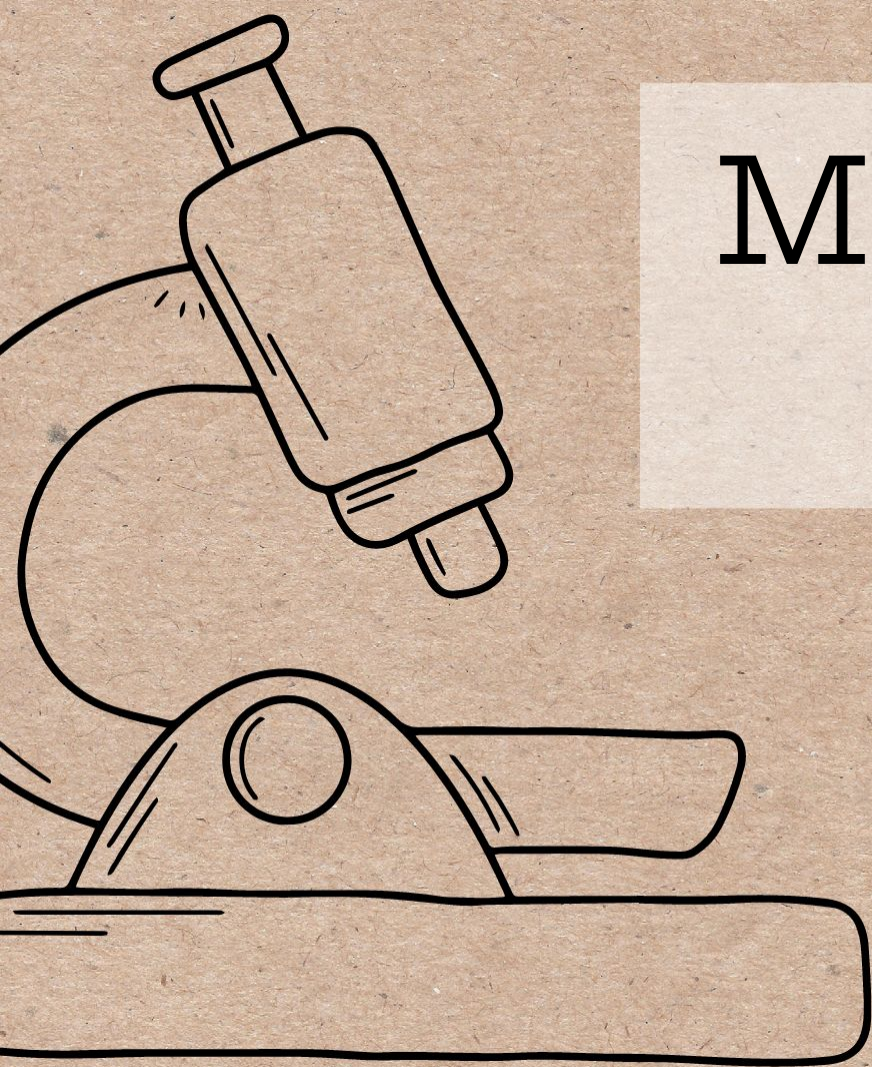
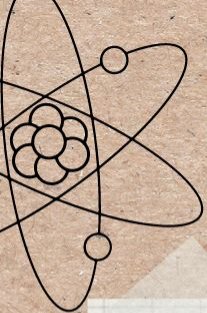


SCIENCE OF SYSTEMS



Microbial Me Week 1





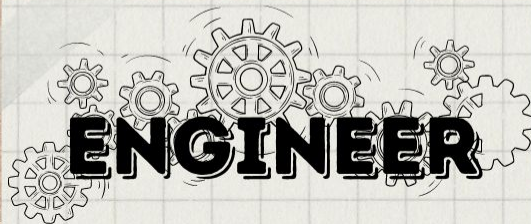
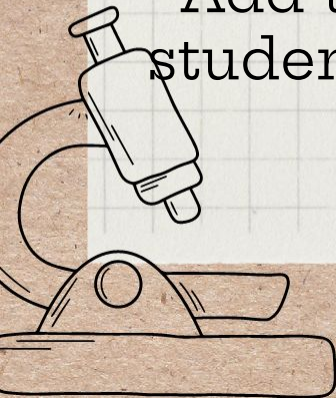
SKILL STATIONS



Create



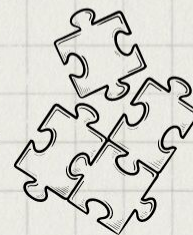
Add task or students here



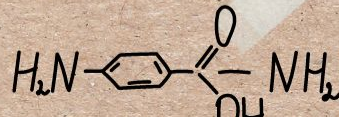
Add task or students here

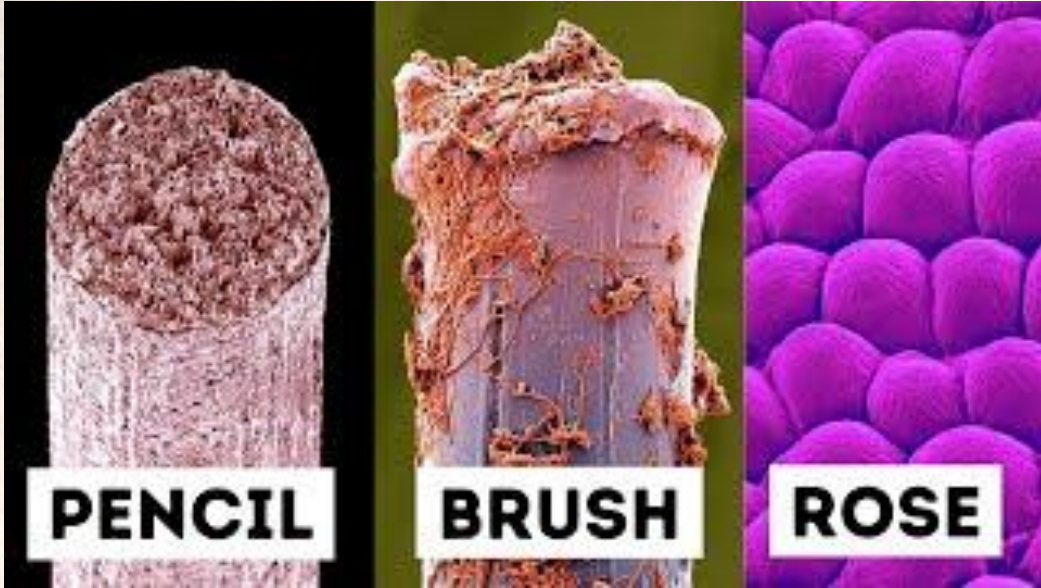


SOLVE



Add task or students here

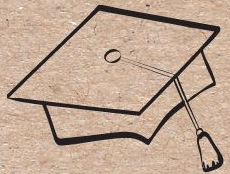




LET'S GET CURIOUS!



HABITS OF A SCHOLAR

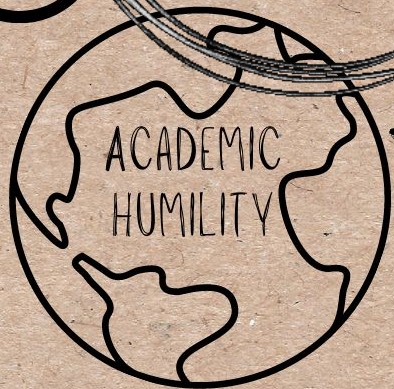


DIFFERENT PERSPECTIVES

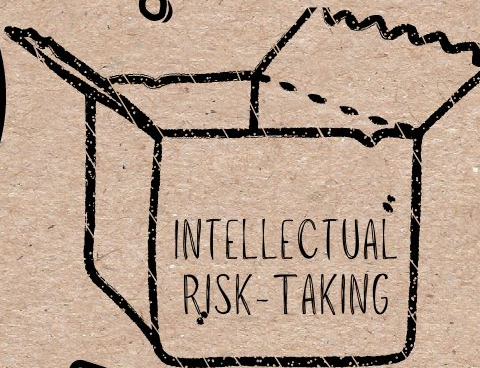
CURIOSITY



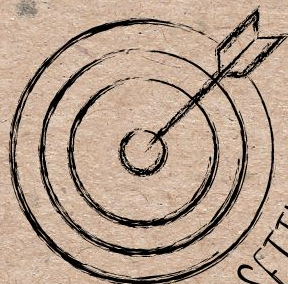
PONDERING IDEAS



ACADEMIC HUMILITY



INTELLECTUAL RISK-TAKING



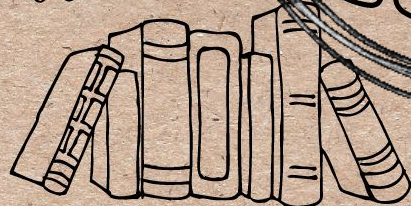
GOAL SETTING



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SYSTEMS HAVE PARTS THAT
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SYSTEMS INTERACT.

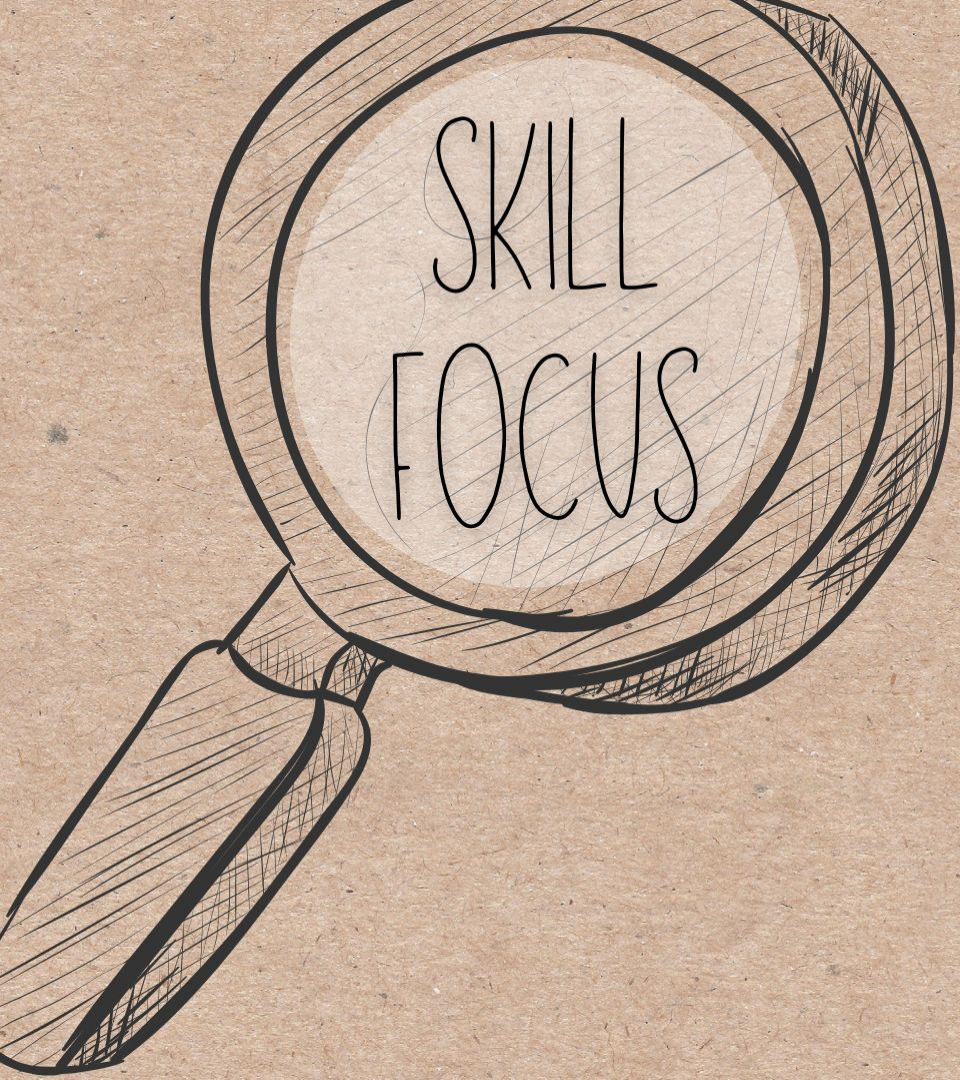
PARTS OF
SYSTEMS ARE
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SYSTEMS 
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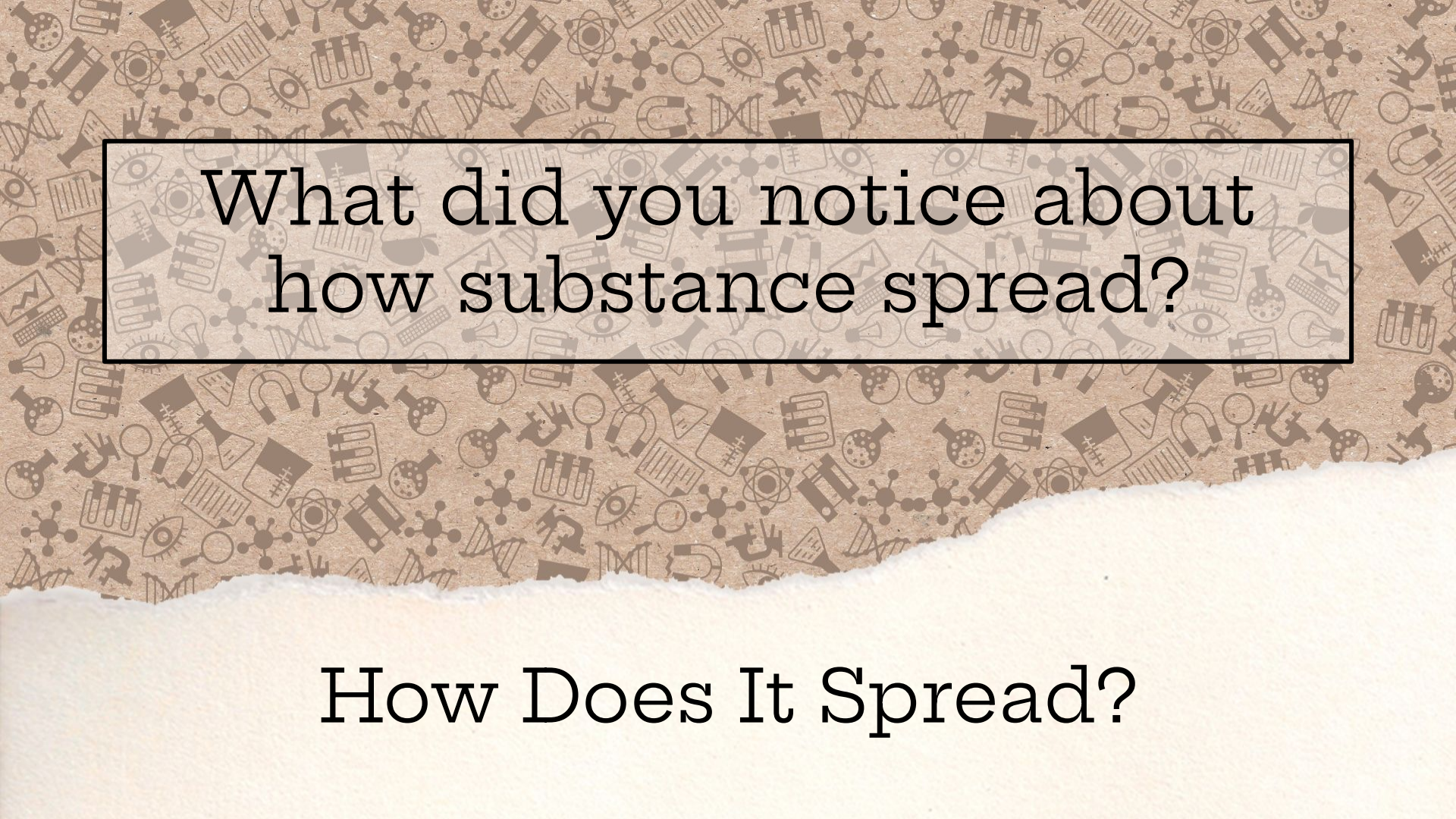
A SYSTEM MAY BE
INFLUENCED BY OTHER
SYSTEMS.

SYSTEMS ARE COMPOSED
OF SUBSYSTEMS.



Language
of the
Discipline



The background is a brown, textured surface resembling recycled paper, covered with a dense pattern of small, light-colored scientific icons. These icons include various symbols such as DNA double helices, lightbulbs, microscopes, test tubes, and molecular structures. A black rectangular border is drawn around the text in the upper half of the image.

What did you notice about
how substance spread?

The bottom half of the image shows a white, torn paper edge that appears to be layered over the brown paper background.

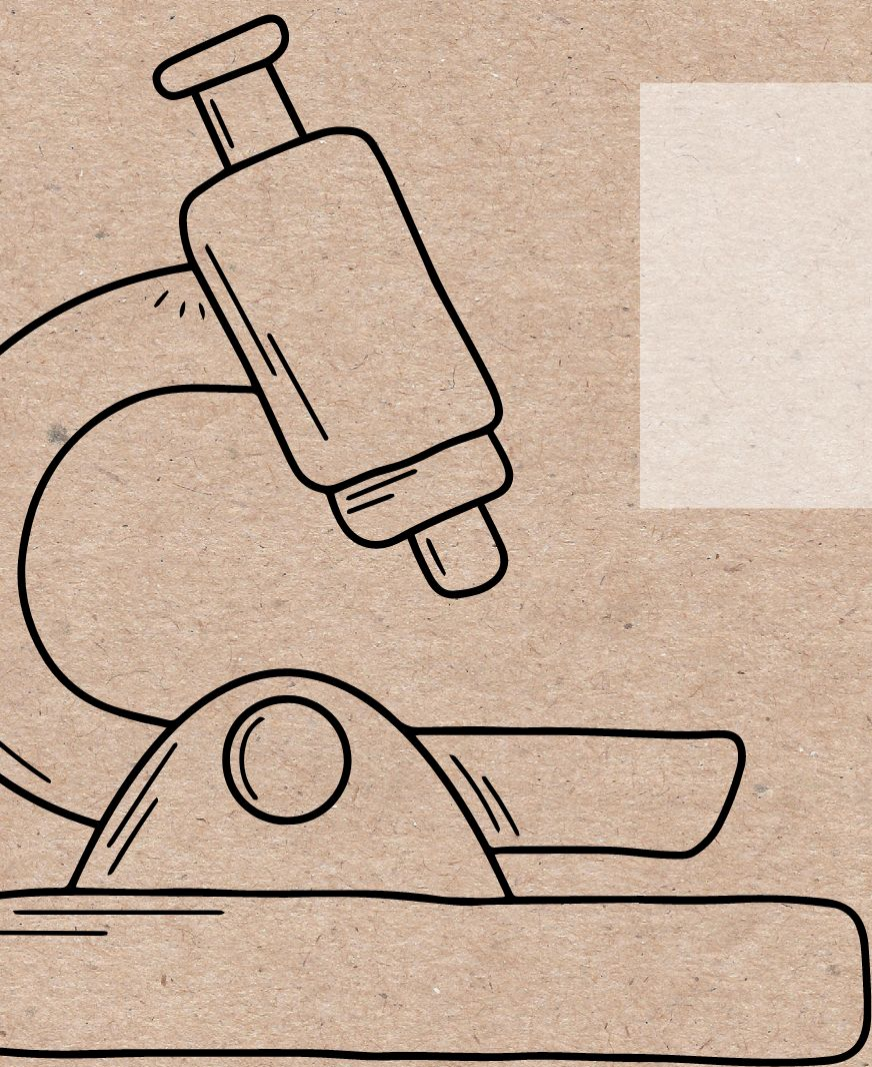
How Does It Spread?

Microbiology is the study of microorganisms.
A **microorganism** is a living thing that can only be seen under a microscope.
A **microbiologist** is a scientist who studies microbiology.

micro=small bio=life ology=study of

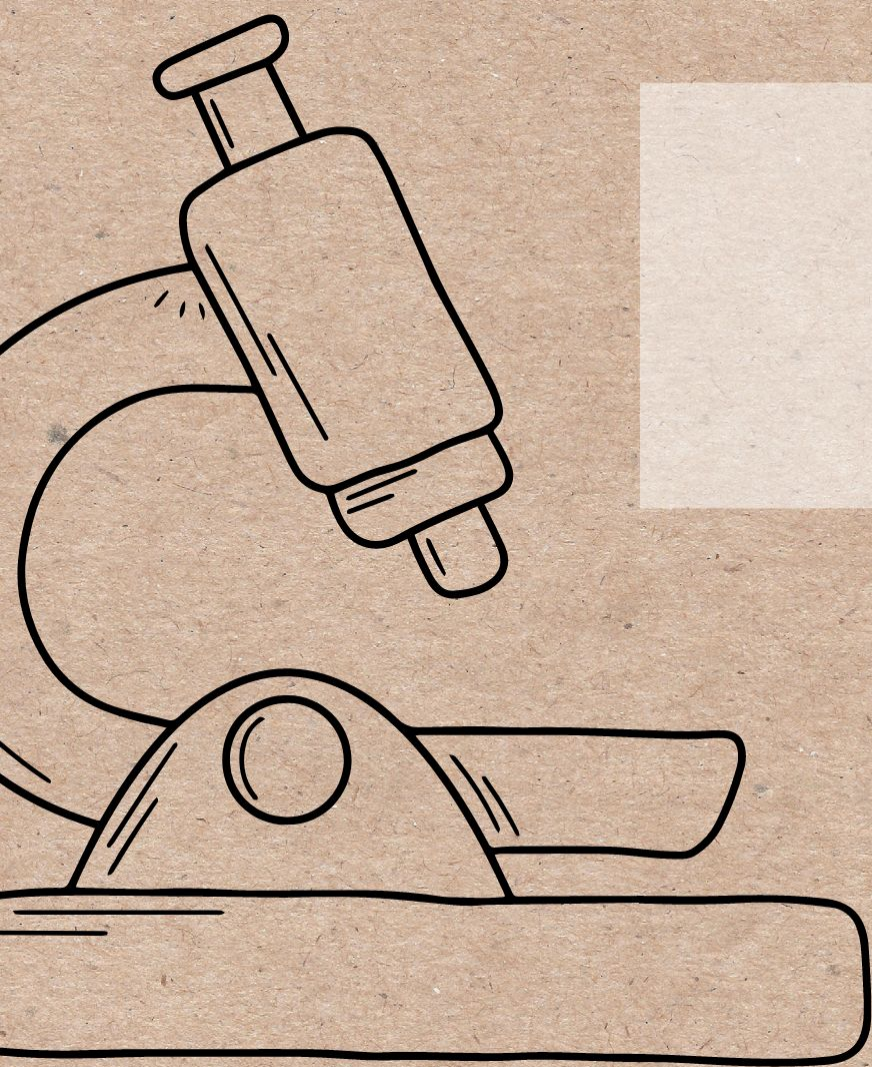
What is microbiology?





Let's Explore

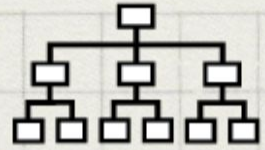
Look at the [parts of a microscope diagram.](#)



Let's Explore

- Look at the prepared slides under the microscope.
- In your journal, draw what you see.

IS IT A SYSTEM?



DOES THE INTERACTION OF THE PARTS PRODUCE AN EFFECT THAT IS DIFFERENT FROM THAT OF ANY PART ON ITS OWN?

ARE THERE PARTS?

DOES IT MATTER HOW THE PARTS ARE ARRANGED?

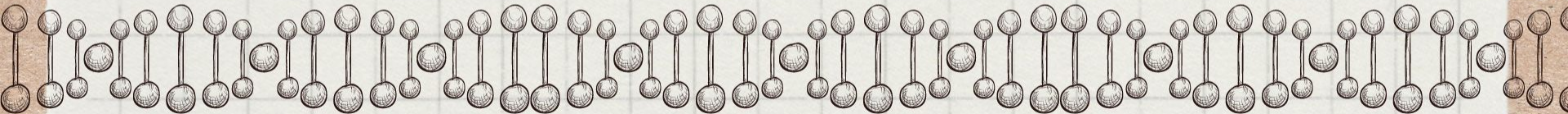
DO THE PARTS AFFECT EACH OTHER?

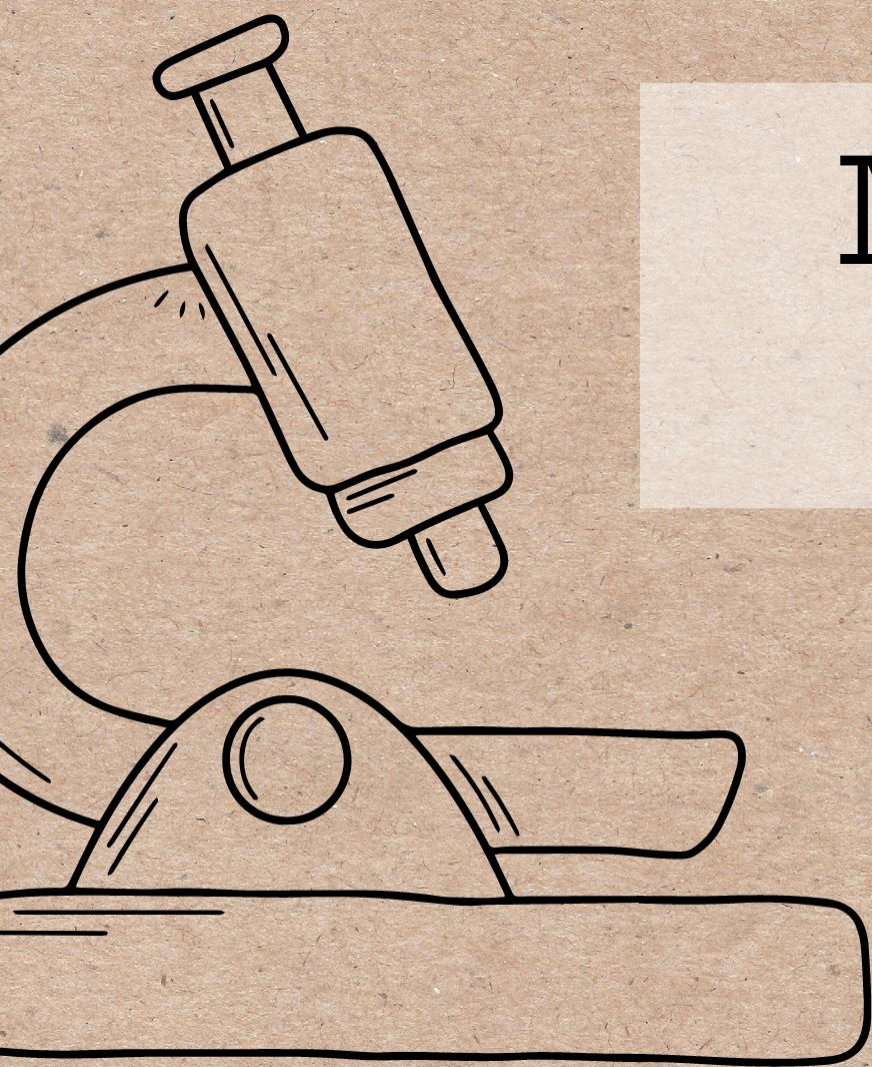
DOES THE BEHAVIOR OF THE SYSTEM CHANGE IF A PART IS TAKEN AWAY?

**Where can
microorganisms be
found?**

Everywhere!

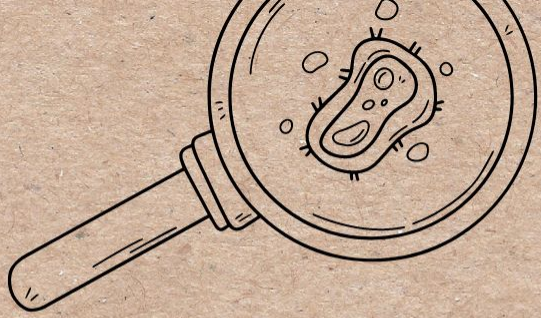
- Play Bacteria in the Cafeteria.
- Name ways that bacteria are both good and bad for us.





Microbial Me

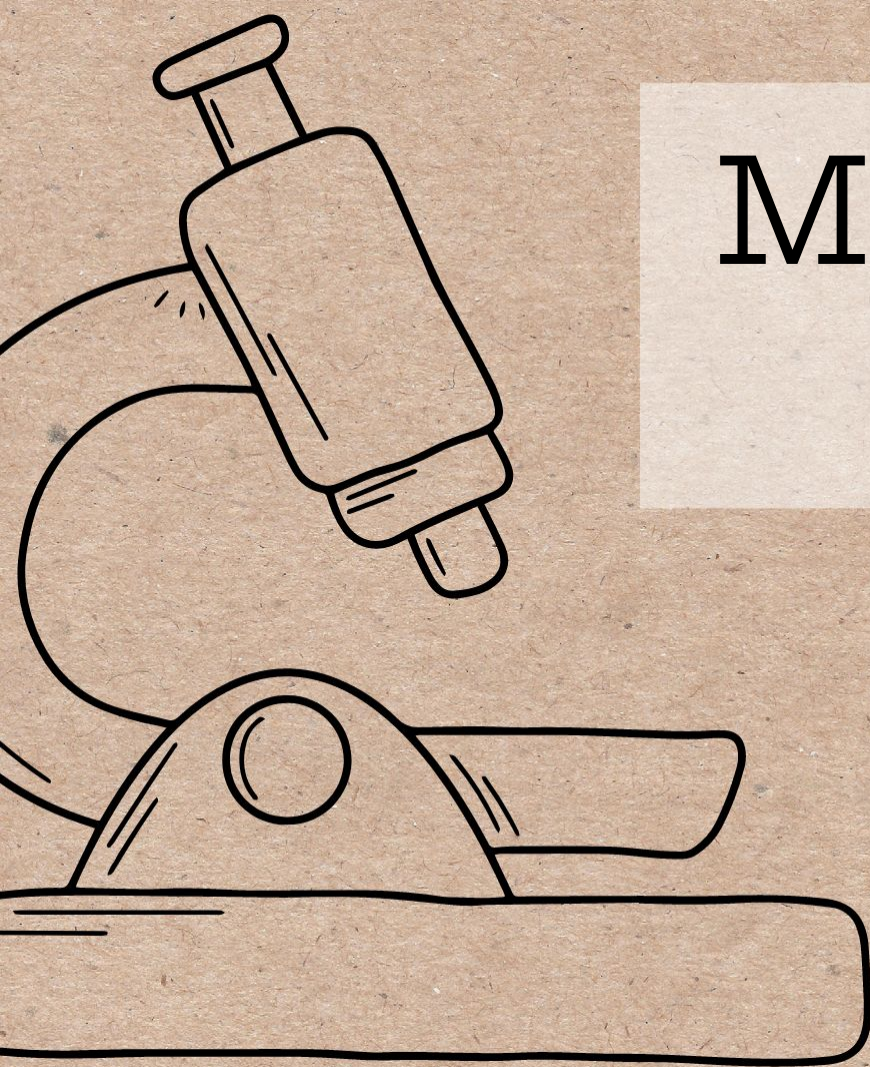
- Swab your fingerprint onto an agar plate.
- Tape the petri dish closed and write your name on the outside.
- Complete the first page of the [lab sheet](#).

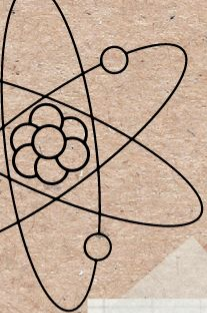


LET'S REFLECT...

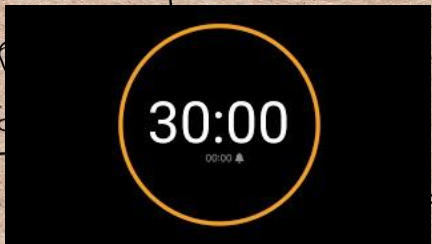
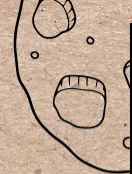
What systems did we
explore today?
How do they fit the systems
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Microbial Me Week 2





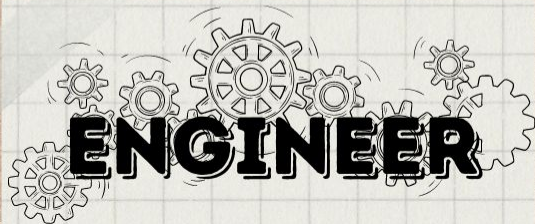
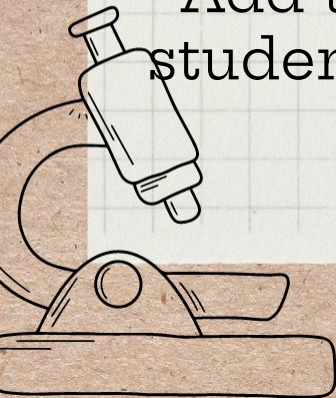
SKILL STATIONS



Create



Add task or
students here



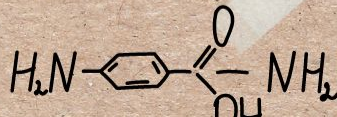
Add task or
students here



SOLVE



Add task or
students here

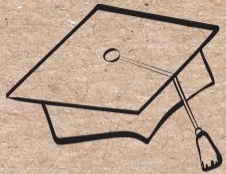




LET'S GET CURIOUS!



HABITS OF A SCHOLAR

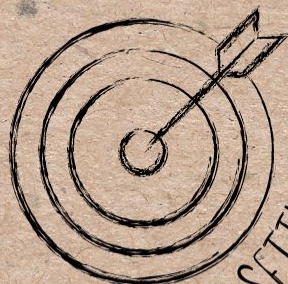


DIFFERENT PERSPECTIVES

CURIOSITY



PONDERING IDEAS



GOAL SETTING



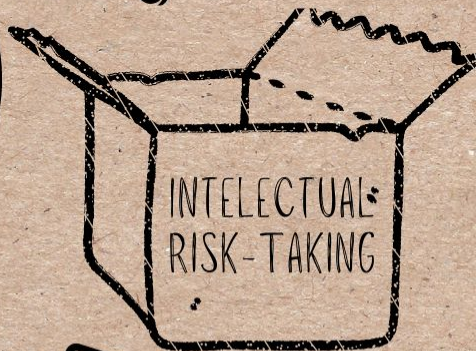
SAVING IDEAS



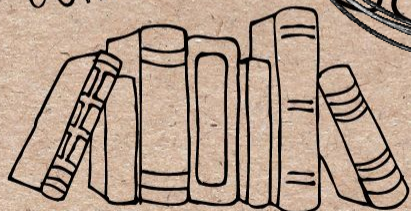
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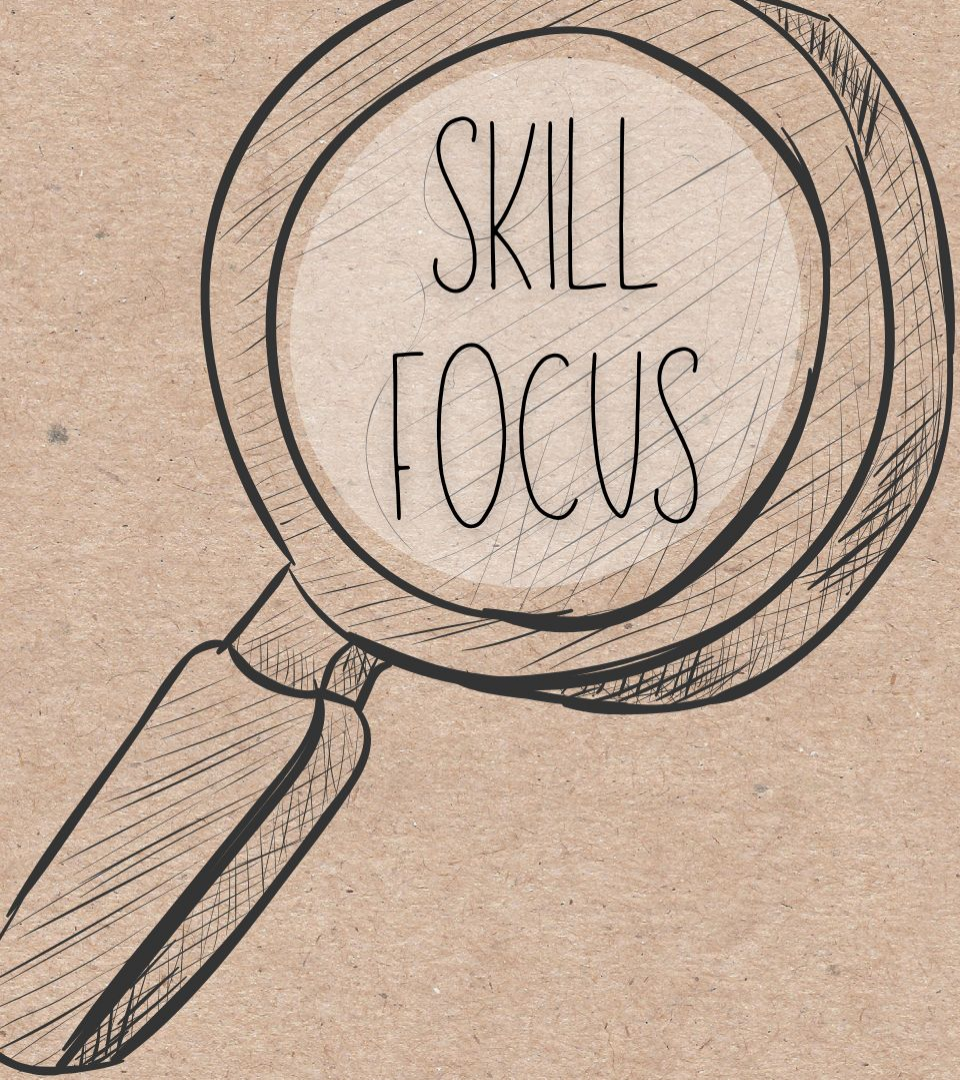
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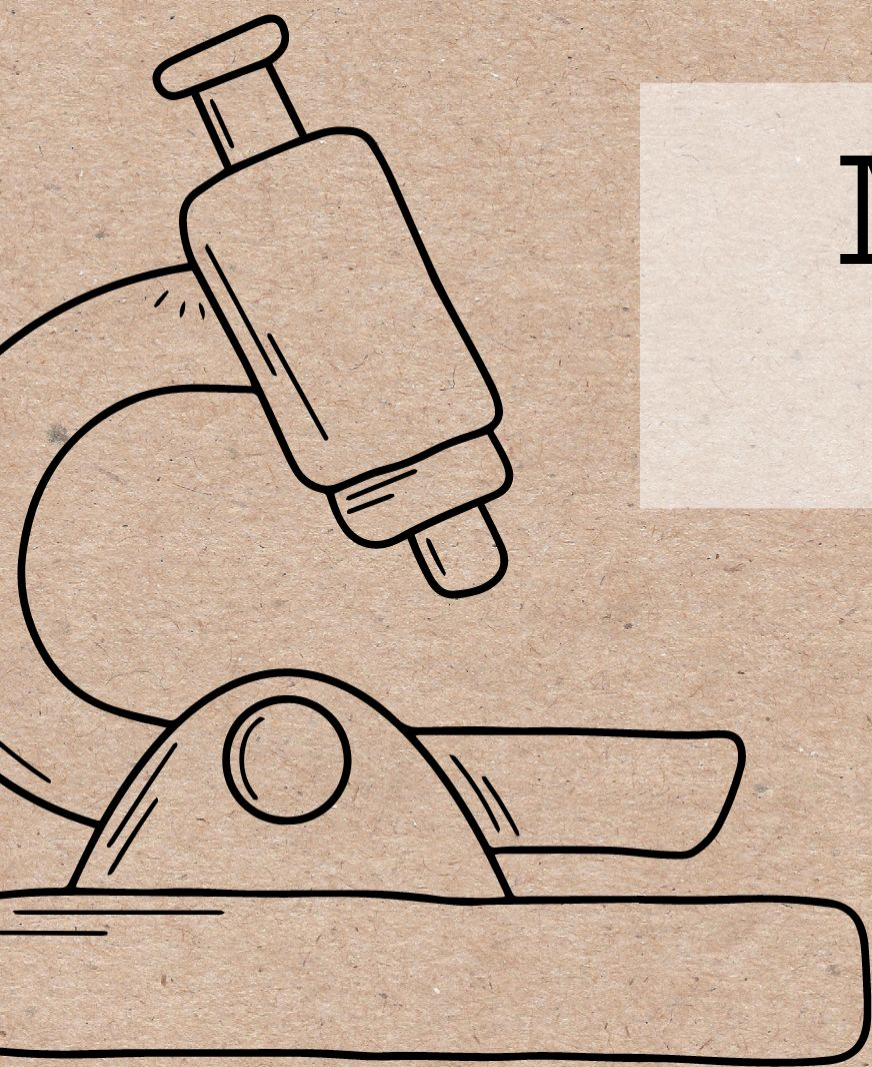
Paradox





A Garden in Your Belly

- What is a microbiome?
- Do you recognize any of the roots from last week?

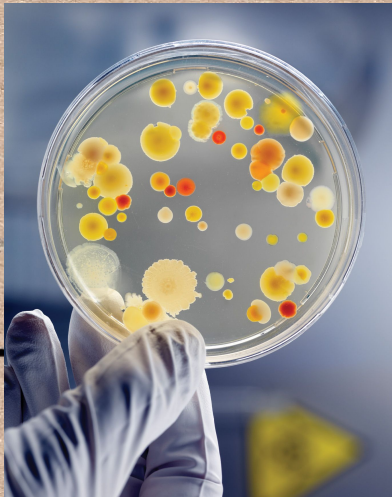
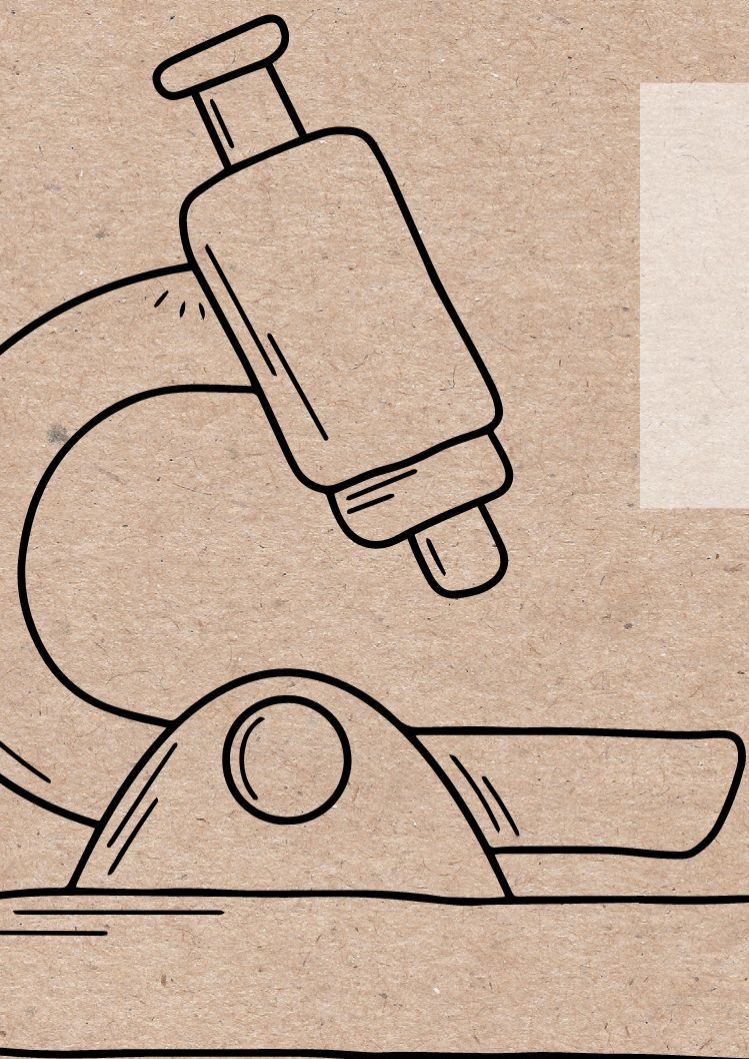


Microbial Me

- Find your agar plate. **DO NOT OPEN IT!!**
- Observe it with a hand lens
- What do you notice has changed over time?
- Complete the rest of the [lab sheet](#).



Microbial Me



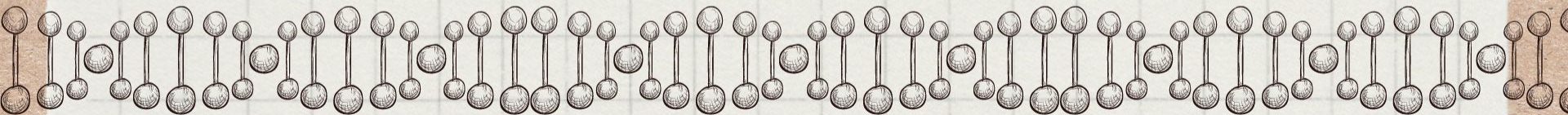
COLONY MORPHOLOGY

Describing colony morphology has become primary step in microbial identification

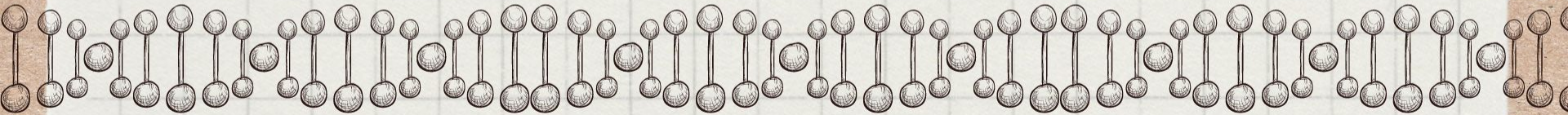
Different types of bacteria can form different types of colonies



YOU ARE YOUR MICROBES



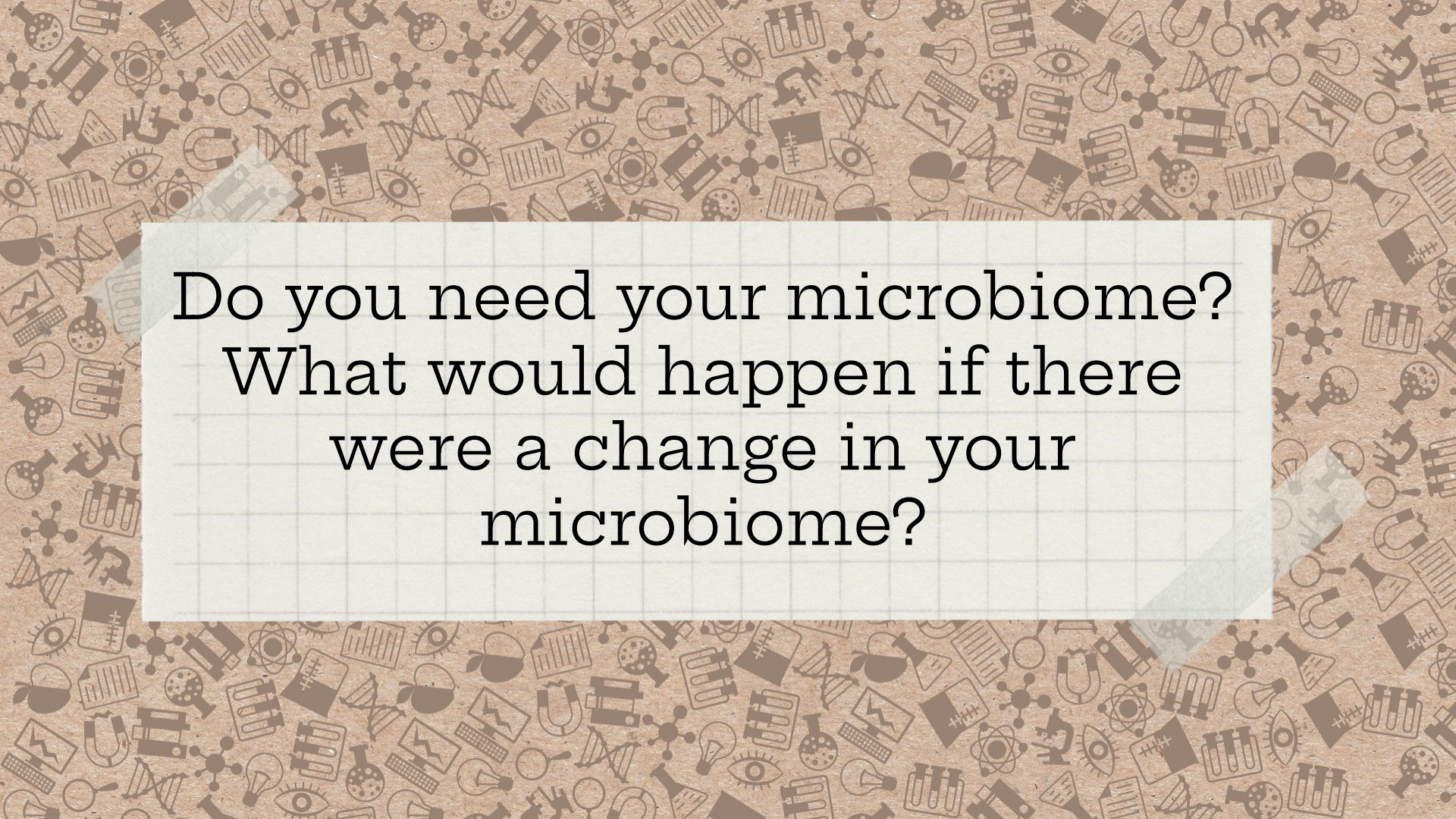
- Play Gutsy.
- Name ways that bacteria are both good and bad for us.





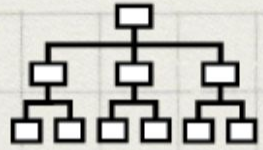
How does your microbiome
work for and against you?
How is your microbiome
a paradox?



The background is a textured, brownish surface covered with a dense pattern of small, light-colored icons. These icons represent various scientific fields, including biology (DNA helix, microscope, cell, eye), chemistry (flask, beaker, test tube, atom), physics (lightbulb, graph, atom), and general science (magnifying glass, book, gear).

Do you need your microbiome?
What would happen if there
were a change in your
microbiome?

IS IT A SYSTEM?



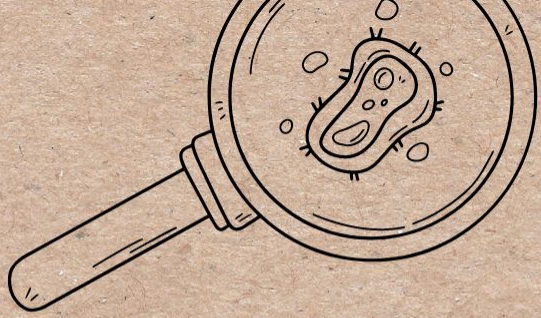
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LET'S REFLECT...

What systems did we
explore today?
How do they fit the systems
test?

Use RAFT.

R(ole) - Take on the perspective of a microorganism or a microscope.

A(udience) - Other students.

F(ormat) - narrative story or a comic strip

T(opic) - Tell what a day in your life is like. Be sure to include a problem and solution.



EXTENSION