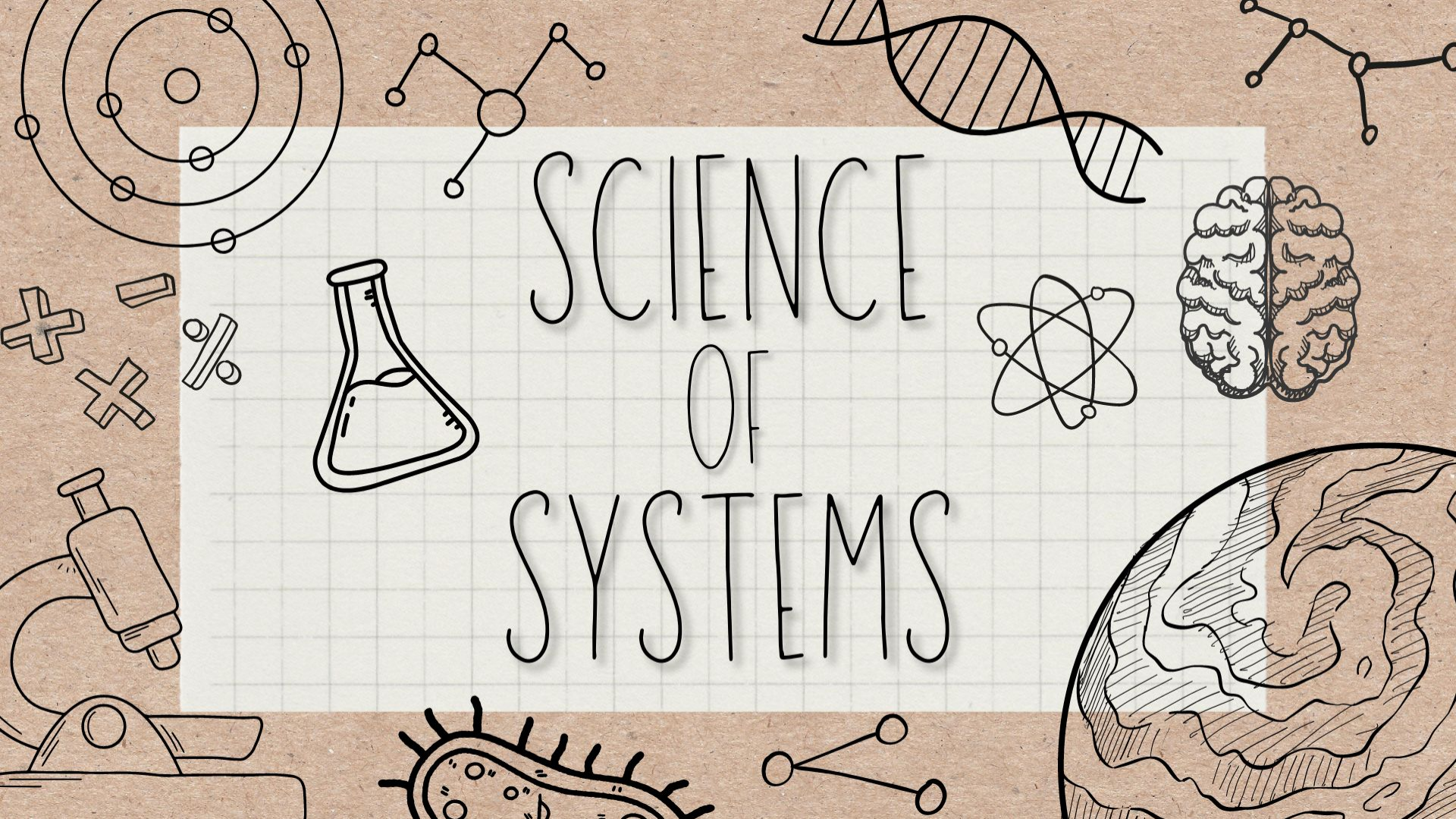


SCIENCE OF SYSTEMS

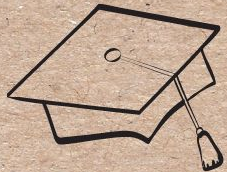




LET'S GET CURIOUS!



HABITS OF A SCHOLAR

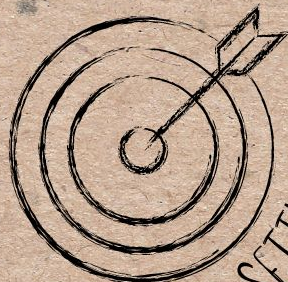


DIFFERENT
PERSPECTIVES

CURIOSITY



PONDERING
IDEAS



GOAL
SETTING



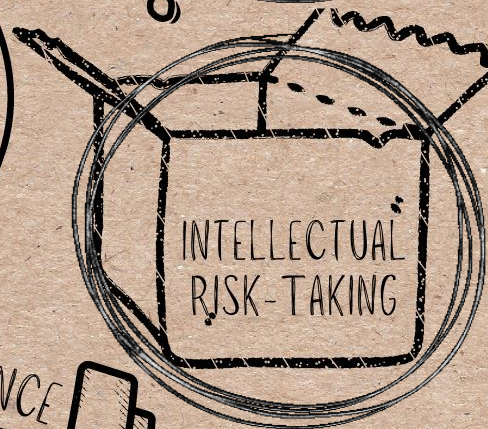
SAVING
IDEAS



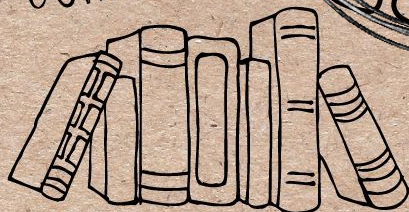
PREPARATION



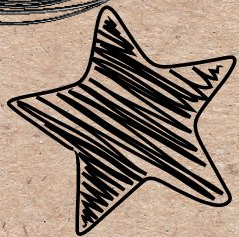
ACADEMIC
HUMILITY



INTELLECTUAL
RISK-TAKING



VARIED
RESOURCES



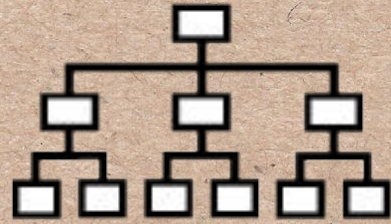
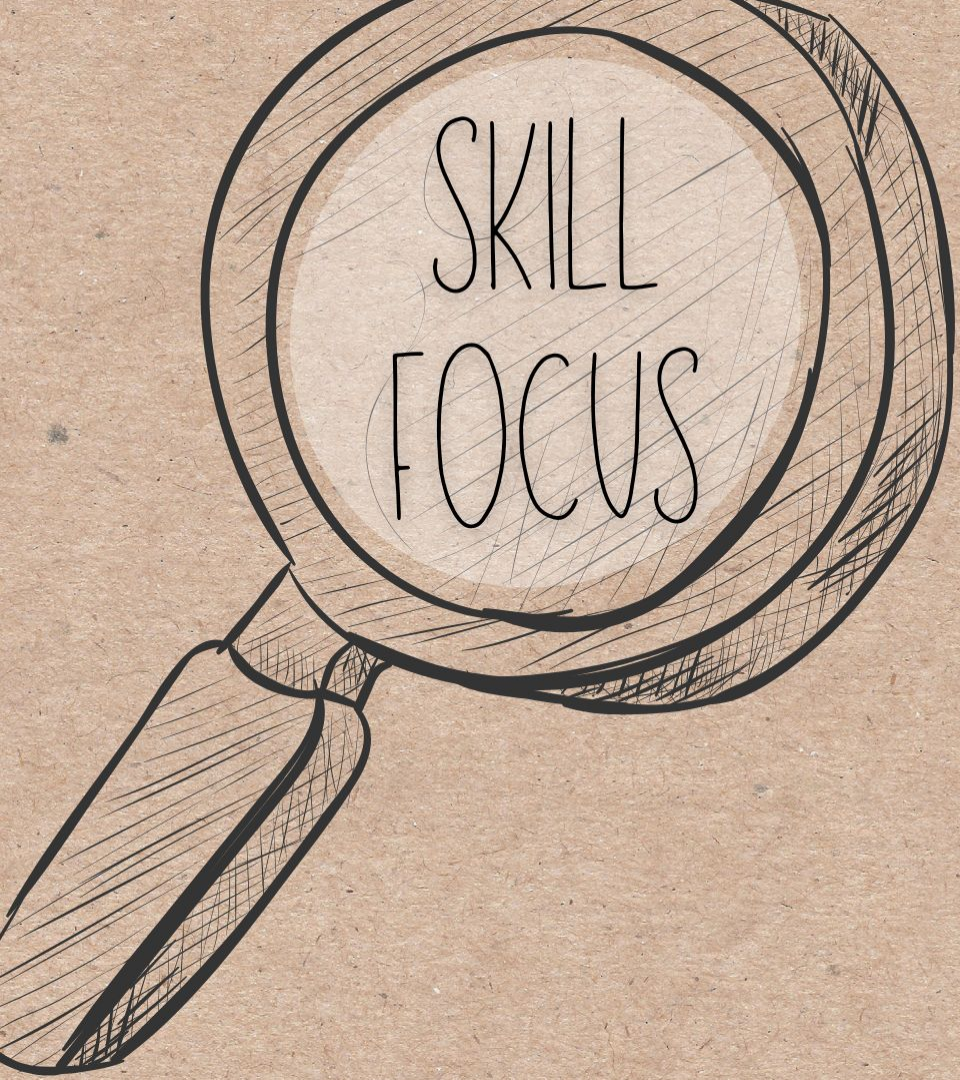
EXCELLENCE



PERSEVERANCE

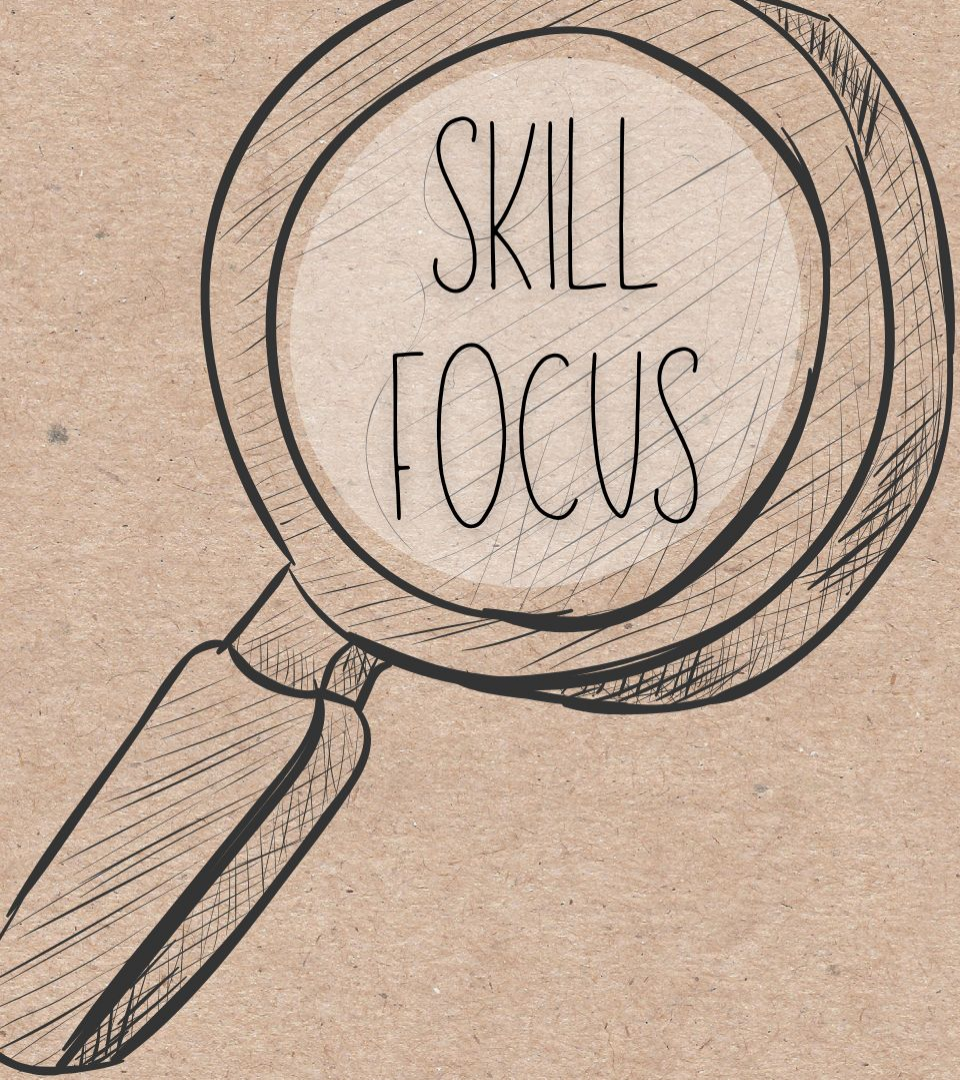
What is a system?

Brainstorm a list of systems that come to mind.



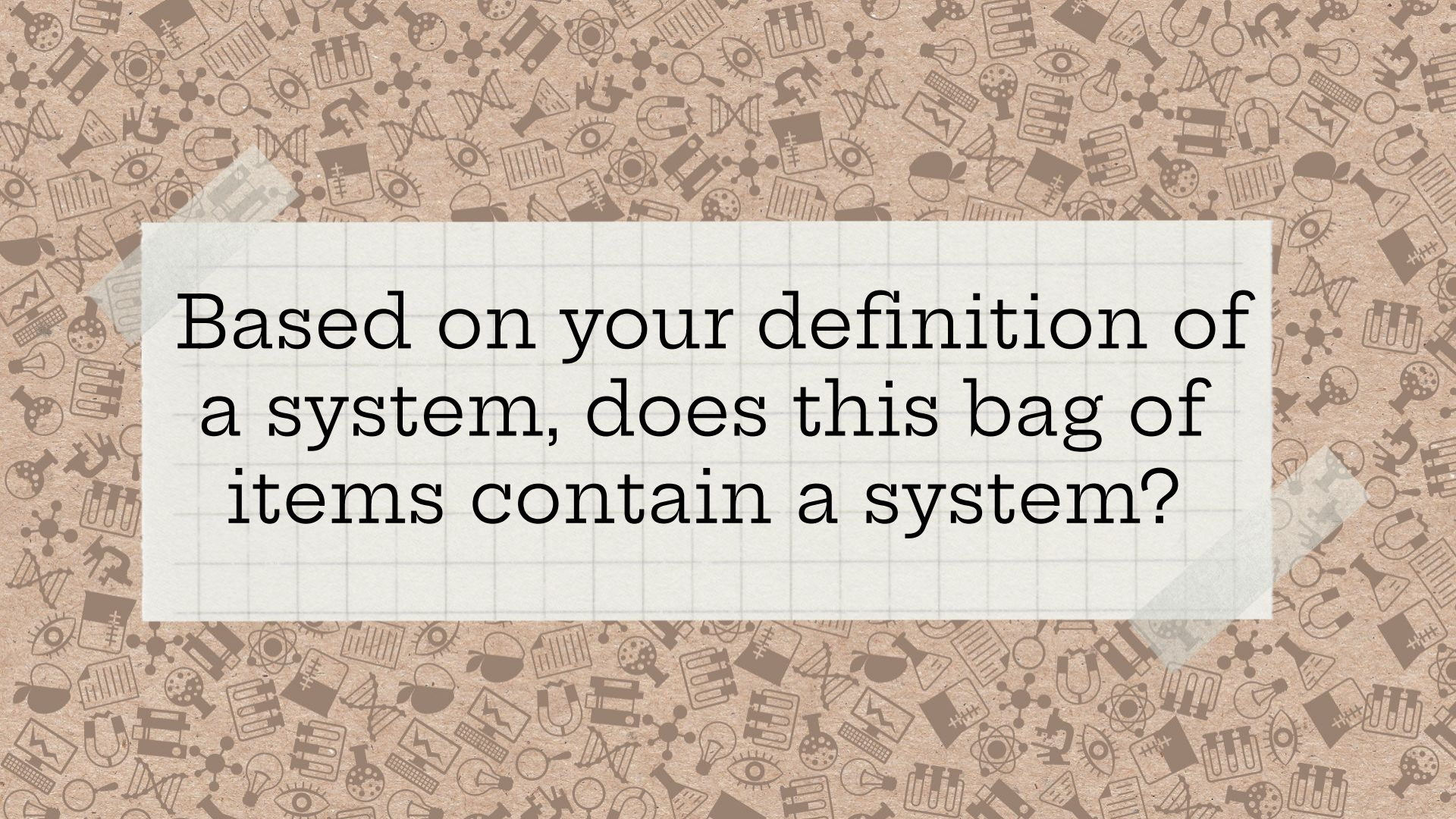
Rules

Laws, expectations,
standards and
methods in a given
field

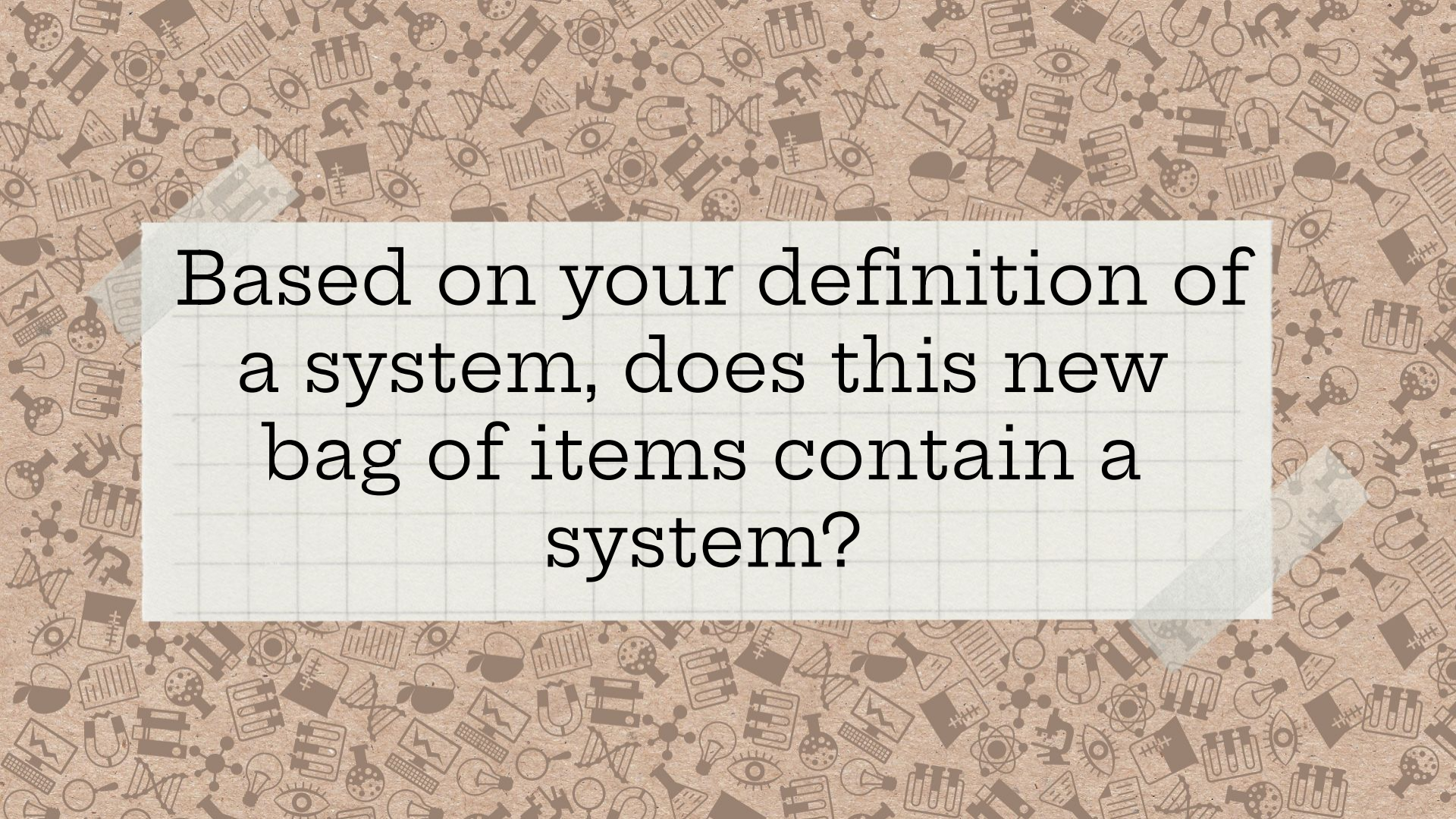


Big Idea

Overarching
statement about a
theme or topic

The background is a textured, brownish surface, possibly resembling cardboard or a similar material. It is covered with a dense, repeating pattern of small, light-colored icons. These icons represent various scientific and technical concepts, including DNA double helices, lightbulbs, test tubes, microscopes, charts, and molecular structures. The overall aesthetic is that of a scientific or educational theme.

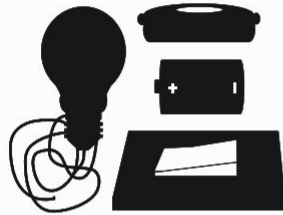
Based on your definition of a system, does this bag of items contain a system?

The background is a textured, brownish surface, possibly resembling cardboard or a similar material. It is covered with a dense, repeating pattern of small, light-colored icons. These icons represent various scientific and technical concepts, including DNA double helices, lightbulbs, microscopes, test tubes, charts, and molecular structures. The overall aesthetic is that of a scientific or educational theme.

Based on your definition of
a system, does this new
bag of items contain a
system?

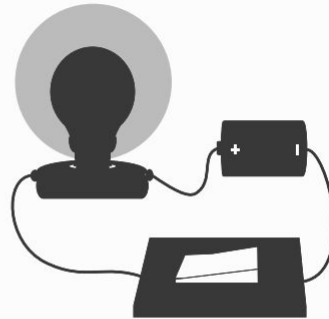
System vs Heap

A **heap** is an unorganized collection of items.



**This is a heap.
Not a system.**

Nothing changes when
a part is taken away or added
to this heap.



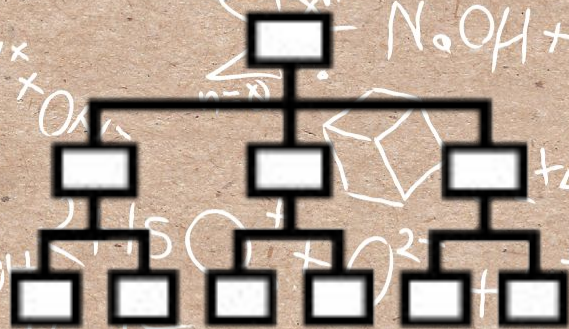
This is a system.

Change definitely happens
if you add or take away
a part of this system.

What are Systems?



Systems Test





Generalizations

Systems have parts that work to complete a task.

Systems are composed of subsystems.

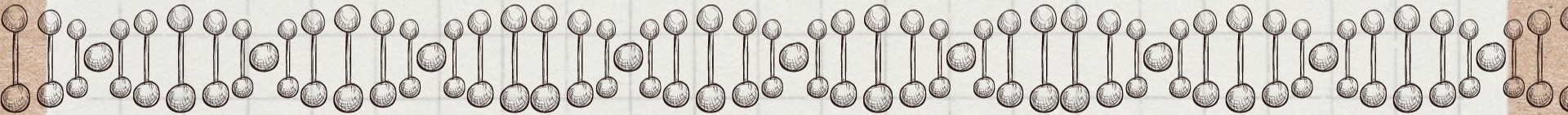
Parts of systems are interdependent upon one another and form symbiotic relationships.

Systems

A system may be influenced by other systems

Systems follow rules.

Systems interact.





SKILL STATION: **ENGINEER**

EXPECTATIONS

- WHAT TOOLS ARE AVAILABLE?
- WHAT DOES IT LOOK LIKE?
- WHAT DOES IT SOUND LIKE?
- WHAT DOES IT FEEL LIKE?
- WHAT DEFINES SUCCESS?

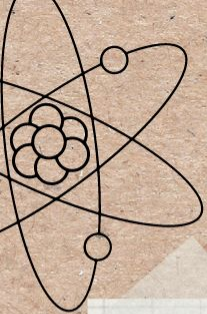
ENGINEER



As engineers, we are...

- Collaborating
- Constructing
- Communicating
- Evaluating

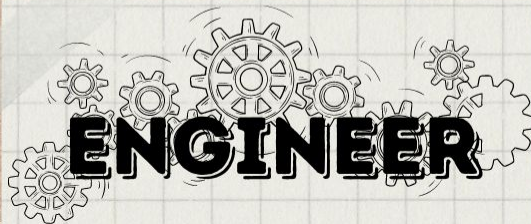




SKILL STATIONS

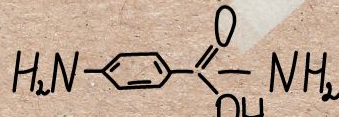


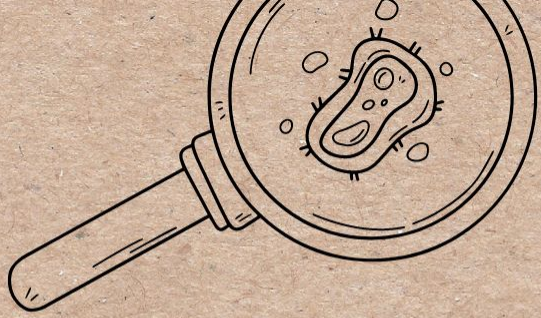
Create



Use the materials
in the Engineer
Station to create
an example of a
system.

SOLVE





LET'S REFLECT...

1. Looking at the system you created in Engineer, what outside factors would most likely cause your system to fall apart?
2. How much change would there be in your system if pieces were put in a different place?
3. Which generalization statement does your system model prove and how?
4. Are there any other parts that could be added to your system that would improve it?