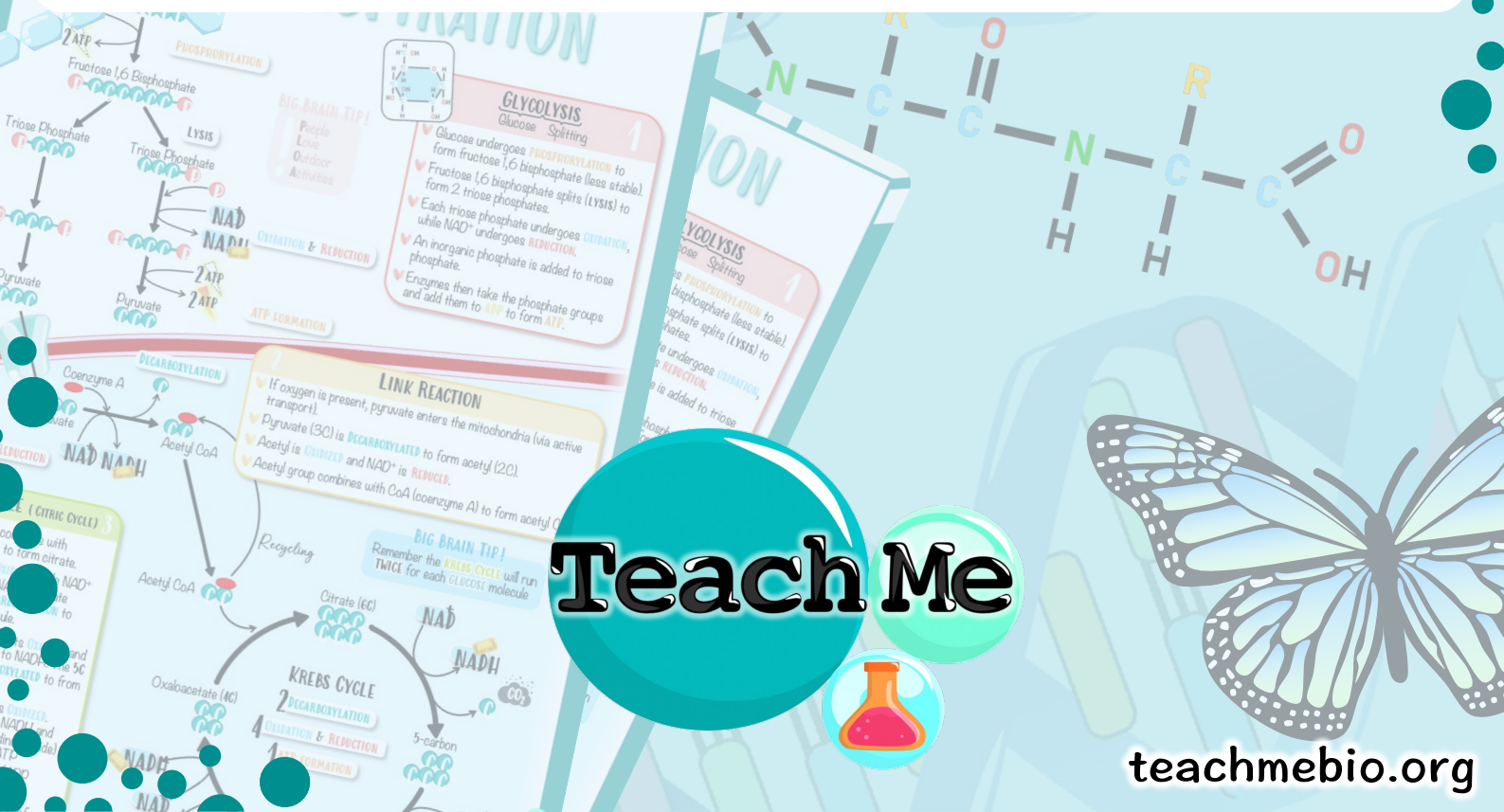


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STUDY NOTES

CHAPTER 10 – INFECTIOUS DISEASE ANTIBIOTICS

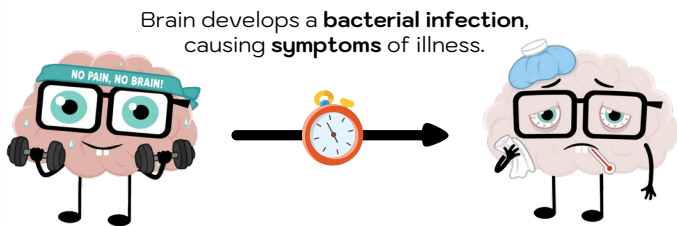
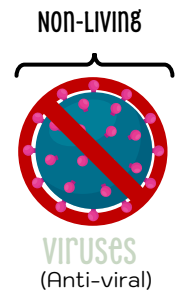
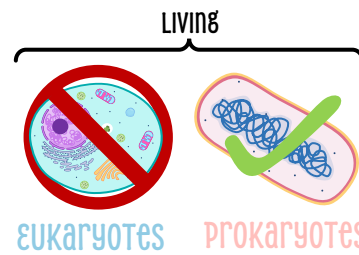


ANTIBIOTICS

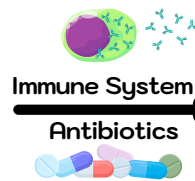
A substance derived from a living organism that is capable of **KILLING** or **INHIBITING THE GROWTH** of **BACTERIA**.
[Bactericidal] [Bacteriostatic]

WHAT DO ANTIBIOTICS DO?

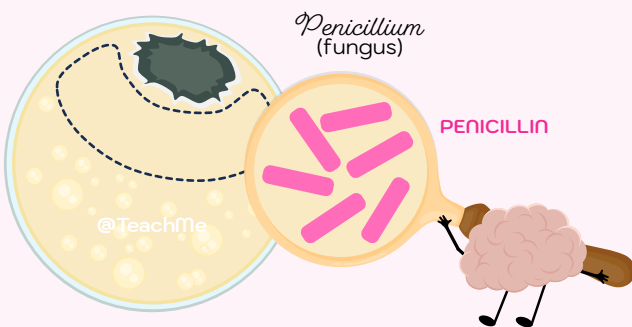
- ✔ Treat **bacterial** infections
- ✔ Do **NOT** work against **viruses** (see page 2)
- ✔ Work alongside the **immune system** (chapter 11)
- ✔ Can kill bacteria (bactericidal) or stop them reproducing (bacteriostatic). Mechanism on page 2.



Brain develops a **bacterial infection**, causing **symptoms** of illness.



His **immune system** immediately begins fighting the invading bacteria. **Antibiotics** are then taken to help kill the bacteria or prevent them from multiplying, reducing the size of the bacterial population. Together, the immune system and antibiotics eliminate the infection, allowing the brain to recover.



Penicillin discovery

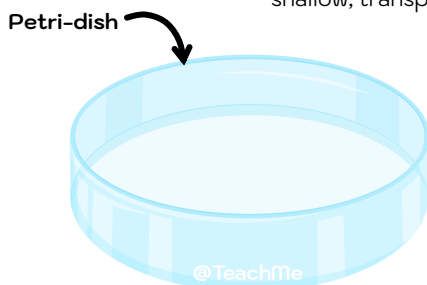
In 1928, Alexander Fleming noticed that a **MOULD** (Penicillium) had contaminated one of his bacterial culture plates.

Around the mould, there was a **clear zone** where bacteria had not grown.

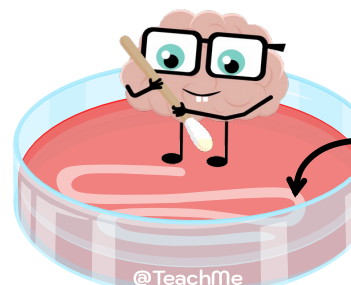
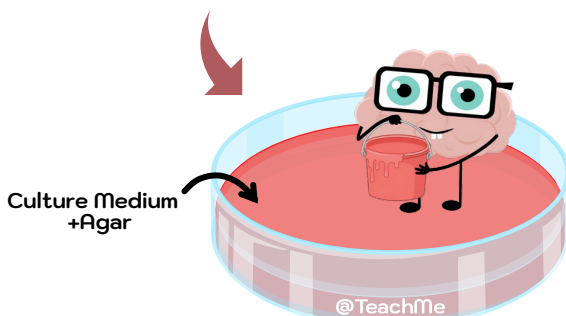
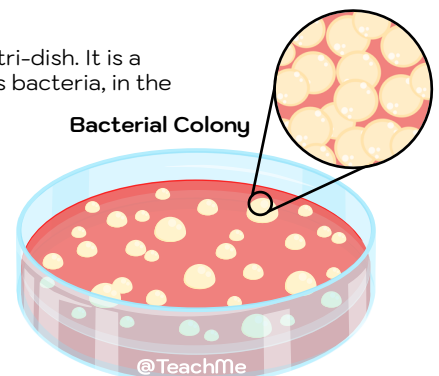
He concluded that the fungus released a substance that killed or inhibited bacteria. This substance became known as **PENICILLIN**, the world's first antibiotic.

The Petri-Dish World

A piece of equipment you will see often in this chapter is a petri-dish. It is a shallow, transparent dish used to culture microorganisms, such as bacteria, in the laboratory.

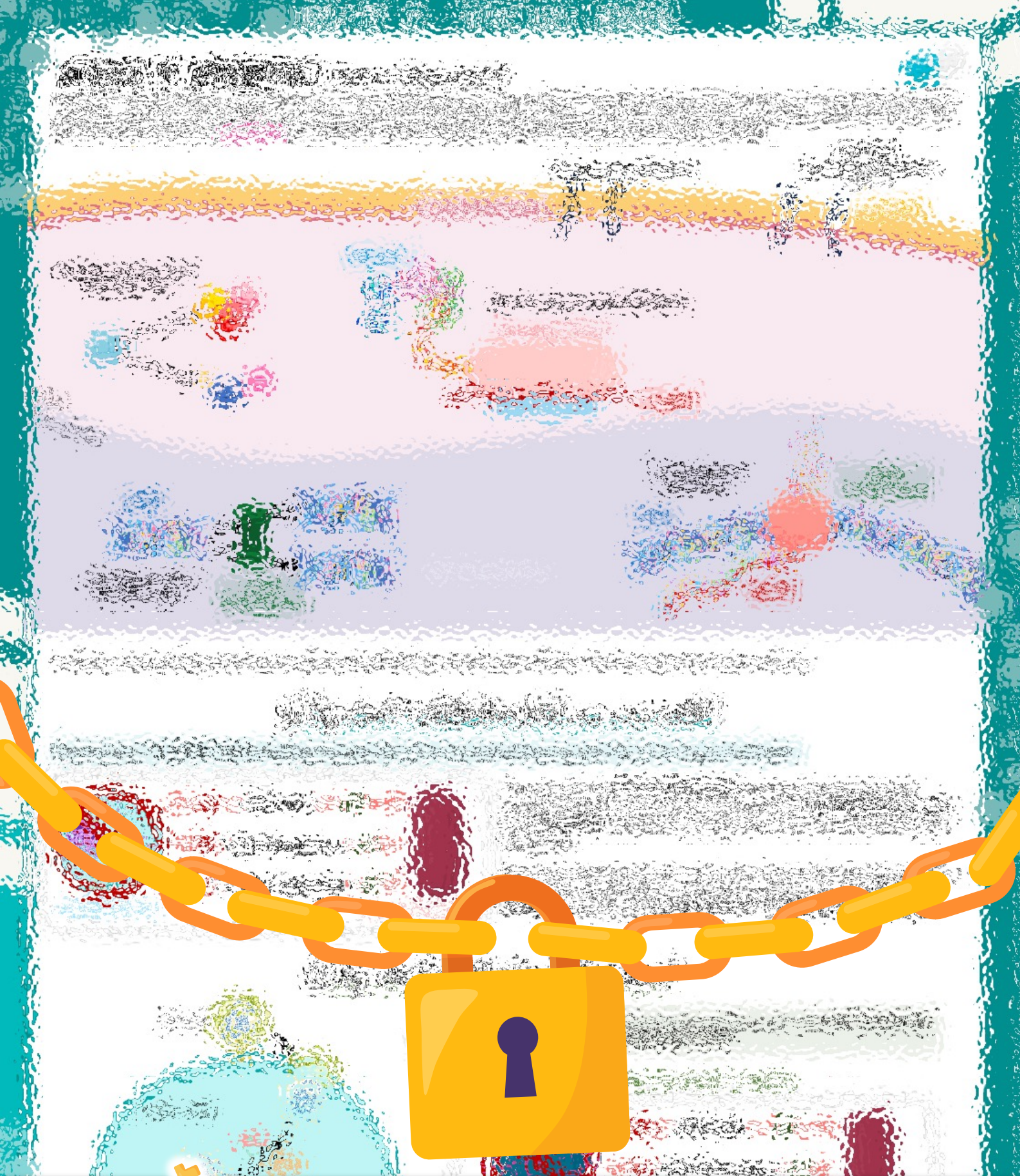


We usually use **AGAR**, a jelly like medium (sometimes containing nutrients), to grow the bacteria. This allows them to grow on the surface of the agar, making them easy to observe and experiment on.

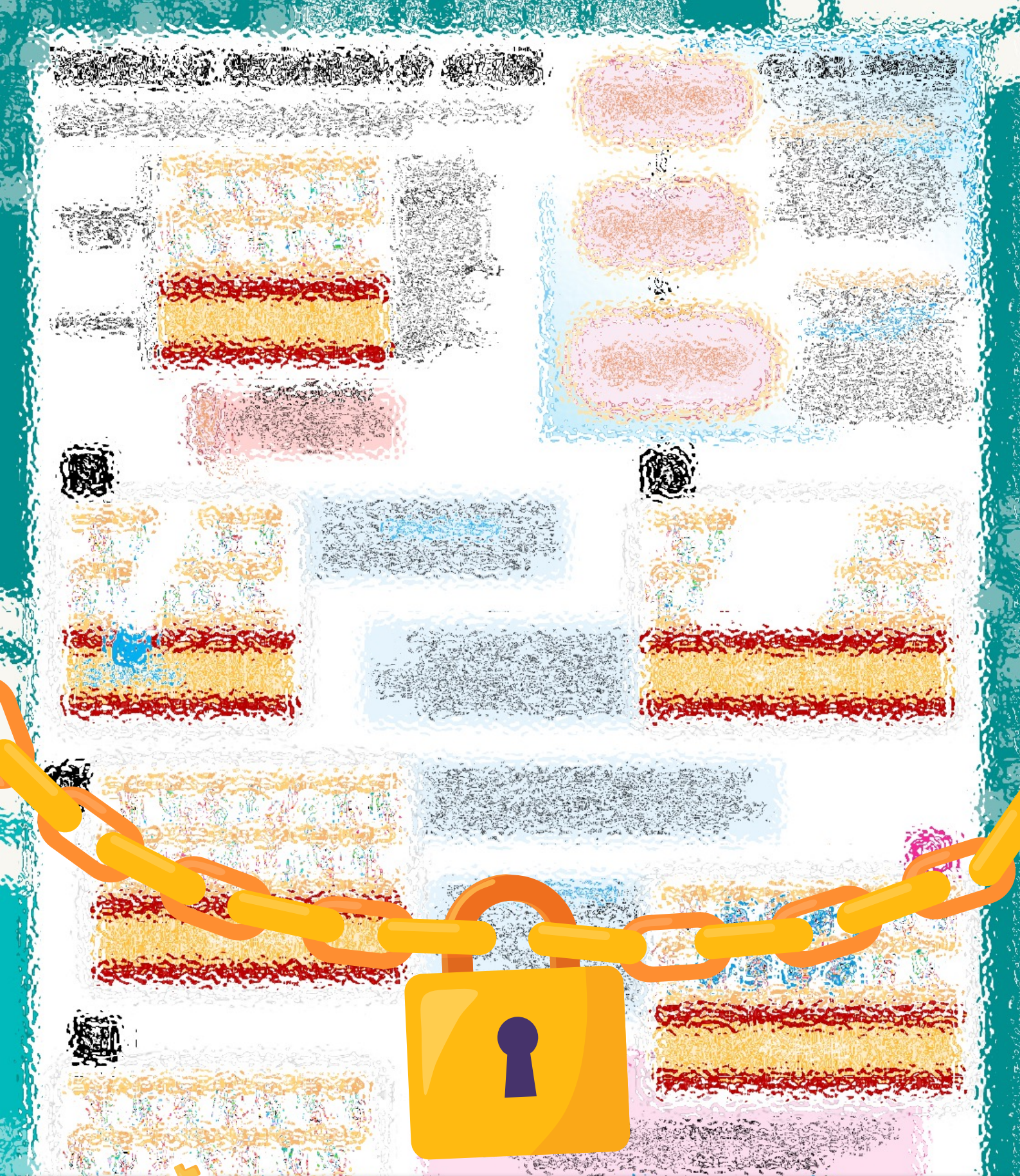


Inoculation
Intentionally depositing microbes into any growth medium.

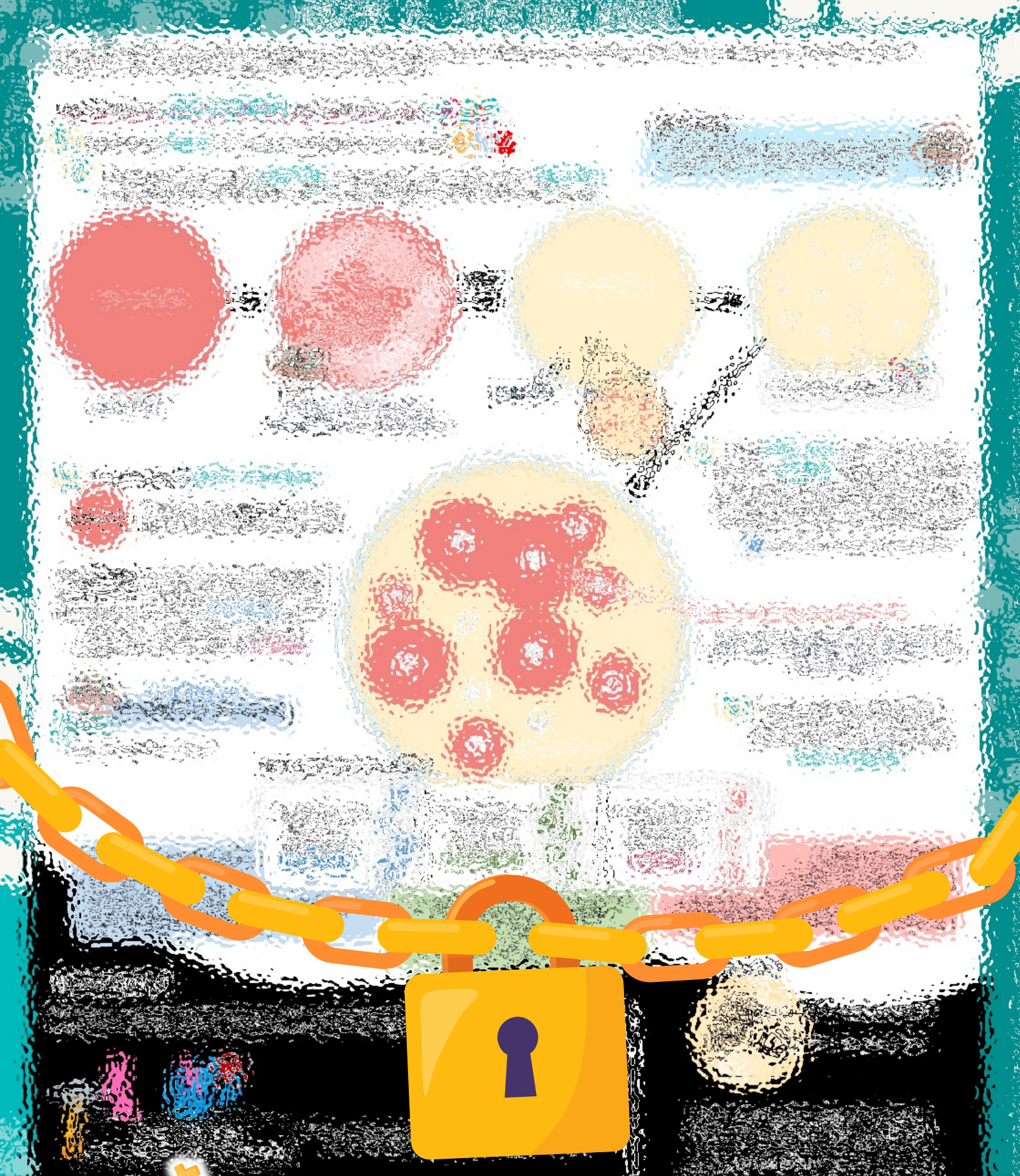




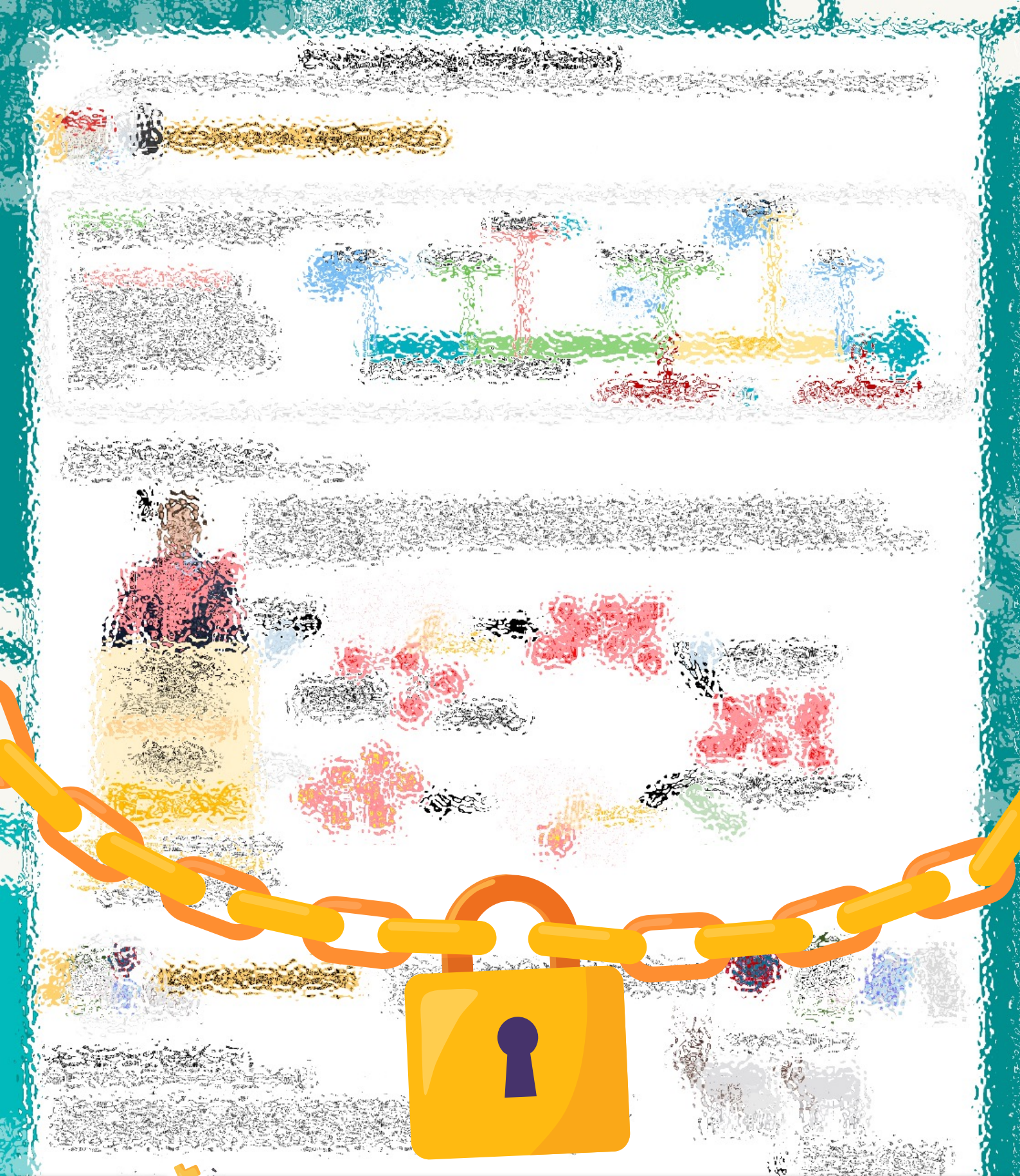
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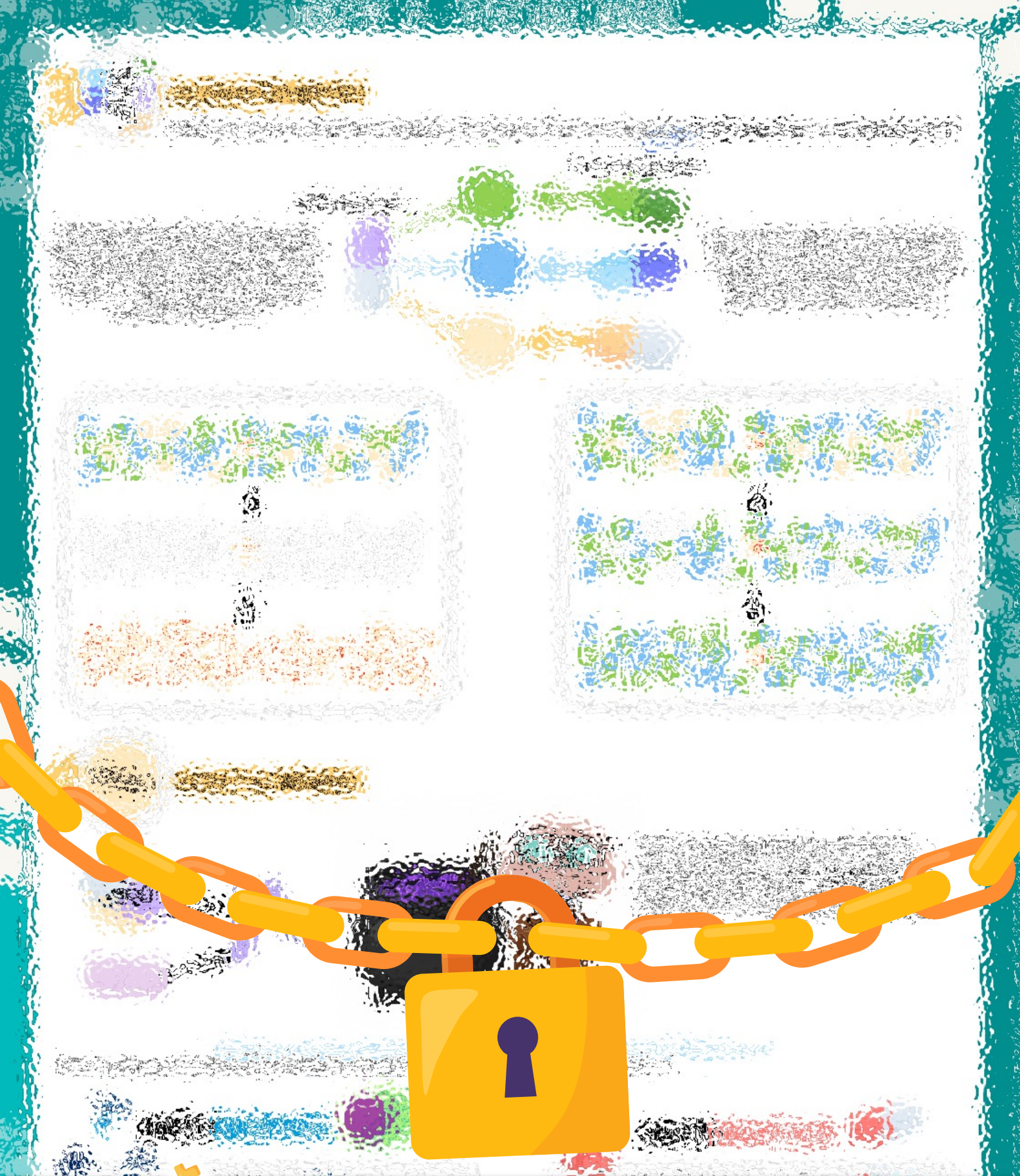
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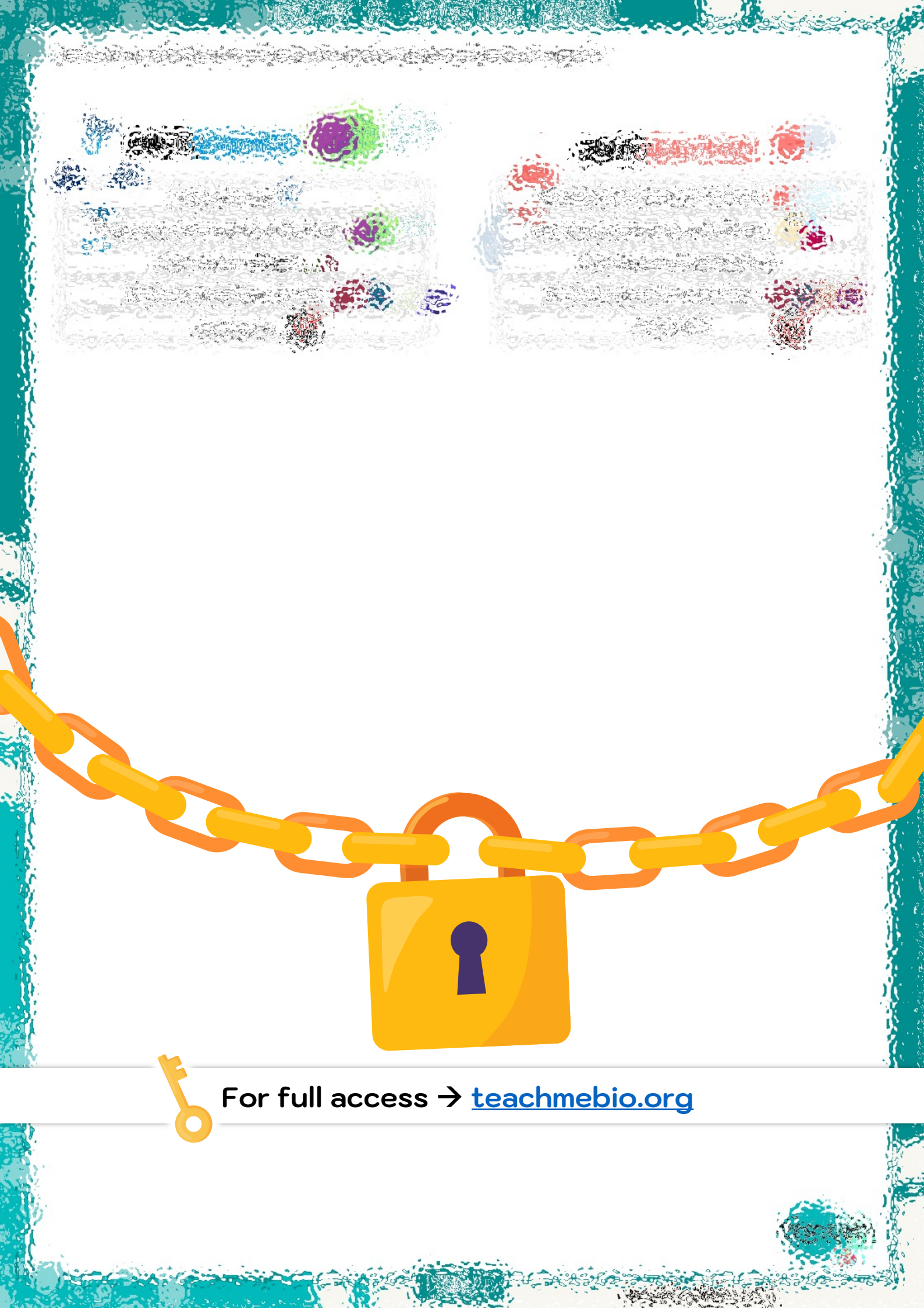
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CELLS

Cells are the basic units of life. They are the smallest structures that can carry out all the processes of life. Cells are found in all living organisms, from the simplest single-celled organisms to the most complex multi-celled organisms. Cells are made up of various parts, each with a specific function. The main parts of a cell are the nucleus, cytoplasm, and cell membrane. The nucleus contains the genetic material (DNA) and controls the cell's activities. The cytoplasm is the fluid-filled space inside the cell where most of the chemical reactions take place. The cell membrane is the boundary that separates the cell from its surroundings. It controls what enters and leaves the cell.



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