

TeachMe

STUDY NOTES

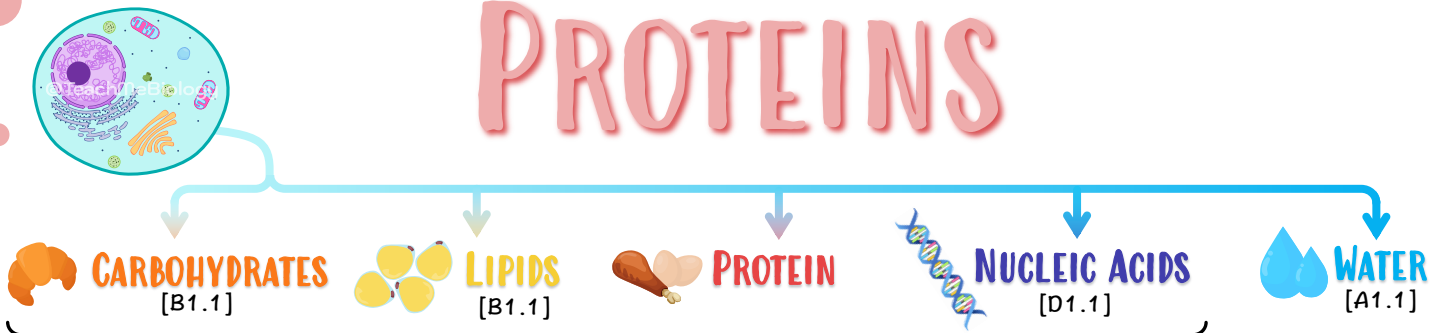


B1.2 PROTEINS

Teach Me

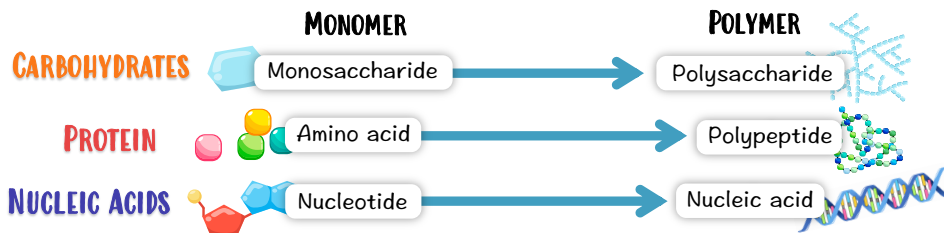
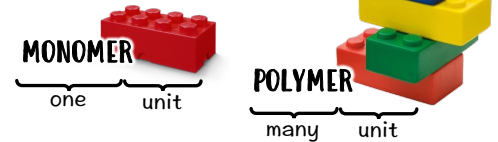


PROTEINS



Macromolecules

Macromolecules are large molecules built from smaller, repeating subunits known as **MONOMERS**. By linking many monomers together, you form a **POLYMER**.

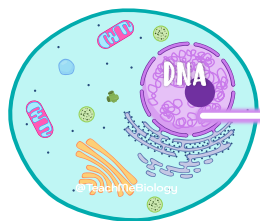


BIG BRAIN TIP!

You can think of a monomer as a single Lego piece, and when you join multiple together you get a large structure (polymer)

Most macromolecules (except lipids) follow this same principle, but each type uses different monomers. You should by now already be familiar with carbohydrates and lipids – now, let's focus on proteins!

DNA codes for proteins



AMINO ACID (AA)
(Monomer)

Protein synthesis
(D1.2)

PROTEIN
(Polymer)

There are

20

different types of amino acids

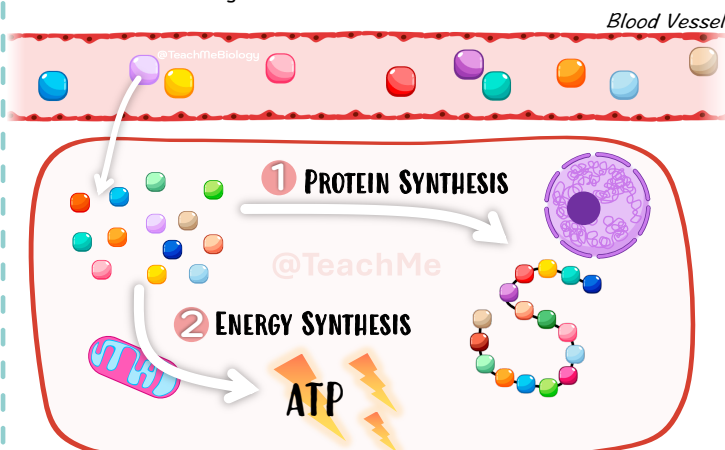
HUGE variety of proteins exist, differing in:

- Chain Length
 - AA sequence
- Influence Folding
(more in HL)

Each protein will be able to carry out its own specific function.

What are Amino Acids used for?

When an animal (you!) eats food which contains protein, it gets digested in the **digestive tract** and absorbed as monomers – amino acids – into the blood stream. These monomers then enter the cells of the body to fulfil two main functions:



- 1 Amino acids can be used to build larger molecules: proteins. These molecules can then carry out many different functions (see on the right).
- 2 Amino acids can get used by the mitochondria to generate ATP (energy) – C1.2.



HEMOGLOBIN

Oxygen-carrying protein found in red blood cells



MEMBRANE PROTEINS

Many functions; e.g., transport (B2.1)



HORMONES

E.g., Insulin & Glucagon. Regulate blood sugar

BIG BRAIN TIP!



Proteins are used as last resort for cellular energy generation, and do not produce as much energy as lipids and carbohydrates do.

Examples of proteins

COLLAGEN

Structural protein that adds strength. Found in bones, tendons, ligaments

ENZYMES

Catalyze chemical reactions (C1.1)

ANTIBODIES

Attack and destroy invading microorganism

ACTIN & MYOSIN

Responsible for muscle contraction

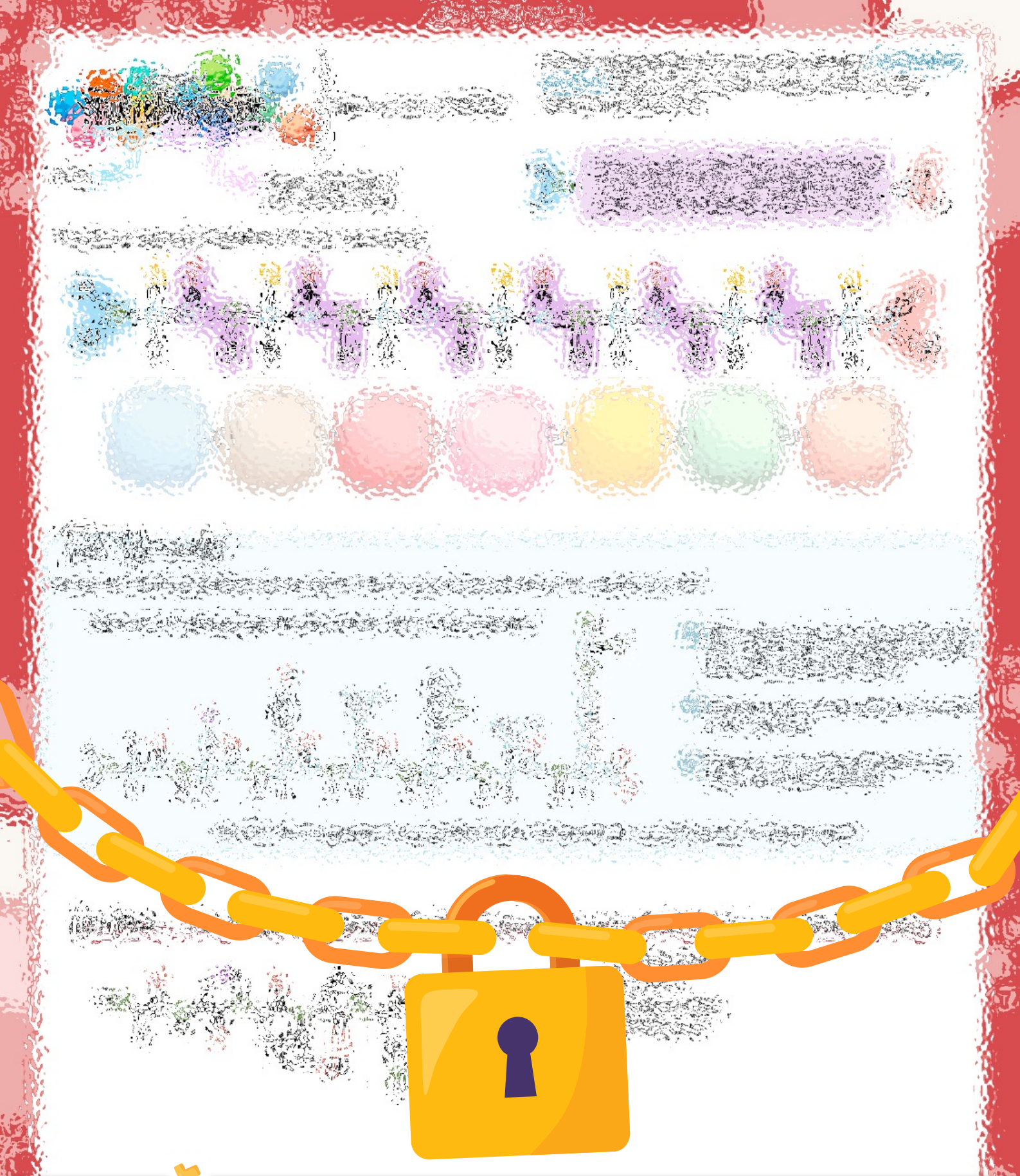
KERATIN

Hair, nails and surface layers of skin contain it

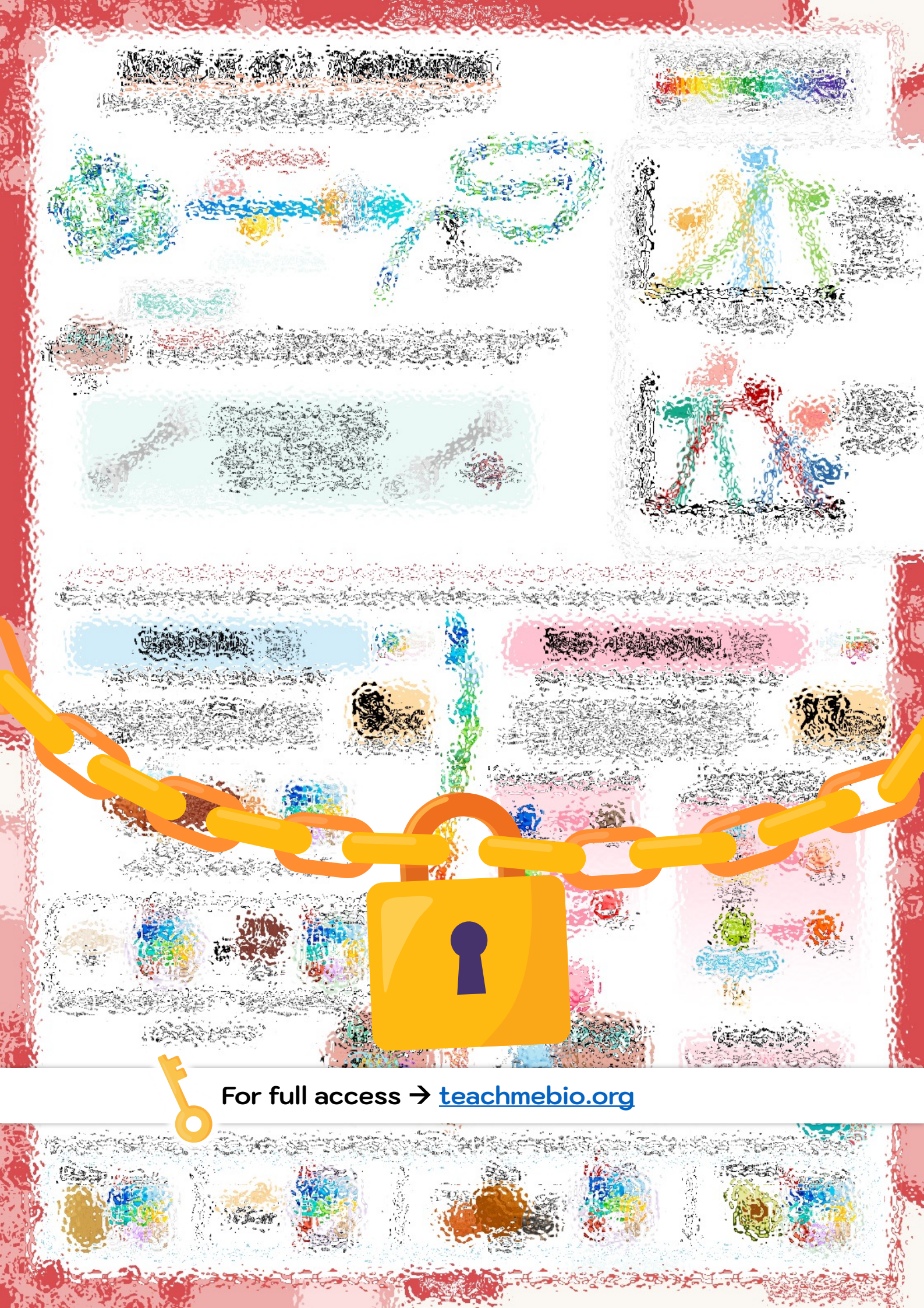




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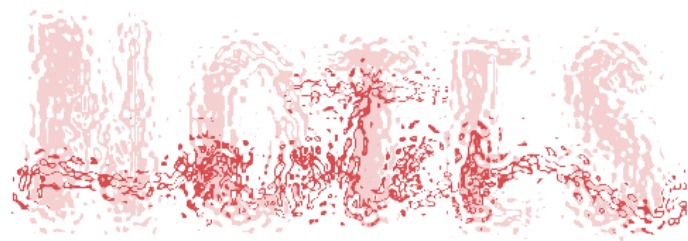
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