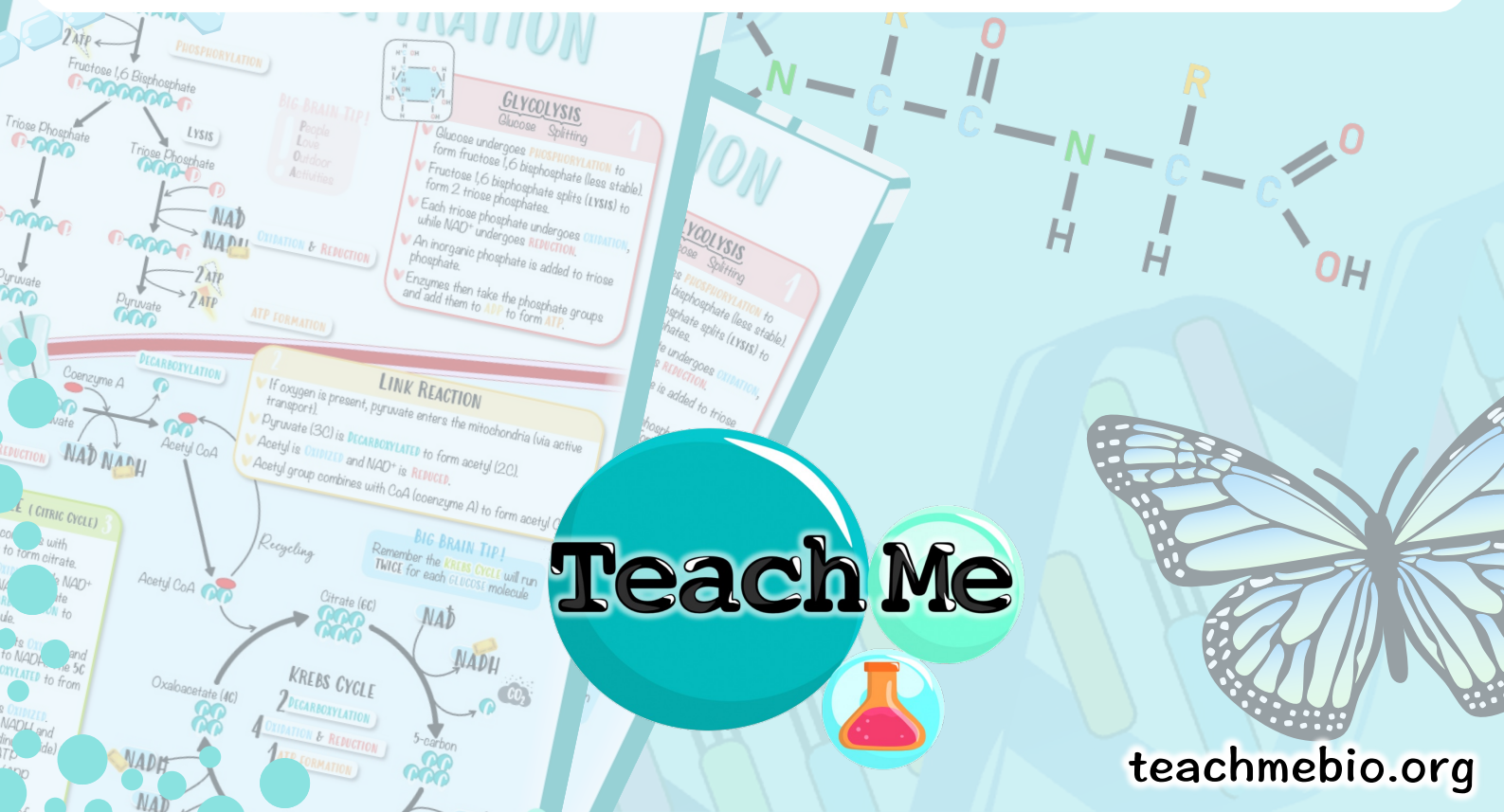


TeachMe

STUDY NOTES

UNIT 2 - CELLS

2.4/2.5/2.6 MEMBRANE TRANSPORT



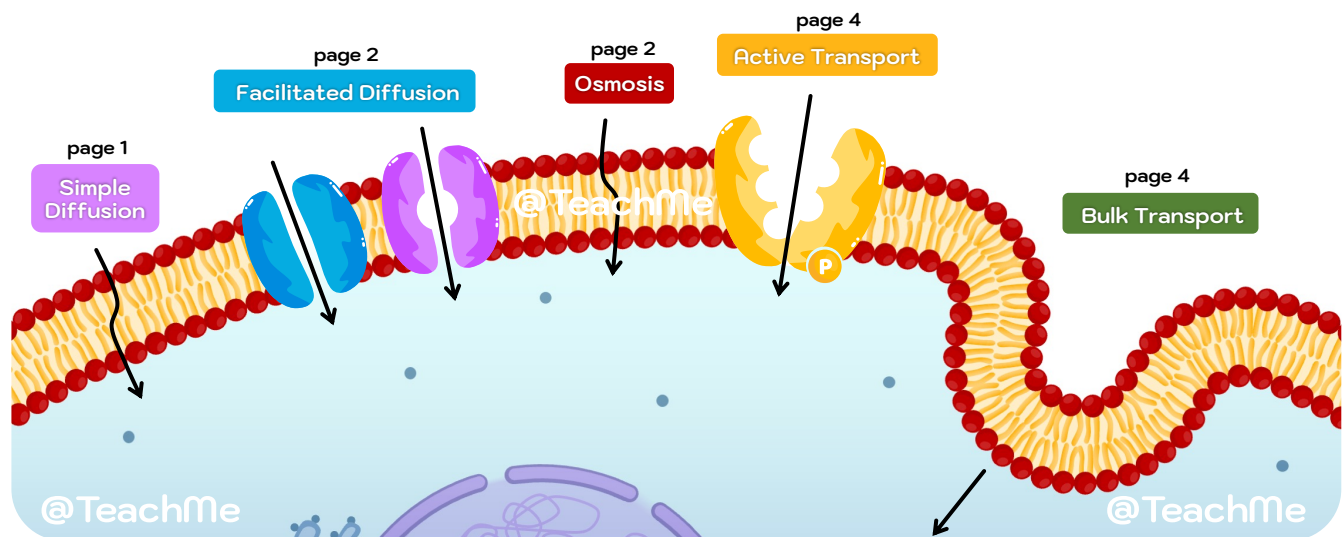
Membrane Transport

Membrane transport is the movement of substances **across** the **cell membrane**.

There are two main types:

Passive transport – movement of substances without energy (ATP), usually down their concentration gradient.

Active transport – movement of substances using energy (ATP), often against their concentration gradient.



SIMPLE DIFFUSION

The **net movement** of a substance from a region of its **higher** concentration to a region of its **lower** concentration without the need for transport proteins or cellular energy (ATP).

Key features:

Transport Proteins	Concentration Gradient	ATP requirement
 no	 DOWN	 ATP NO

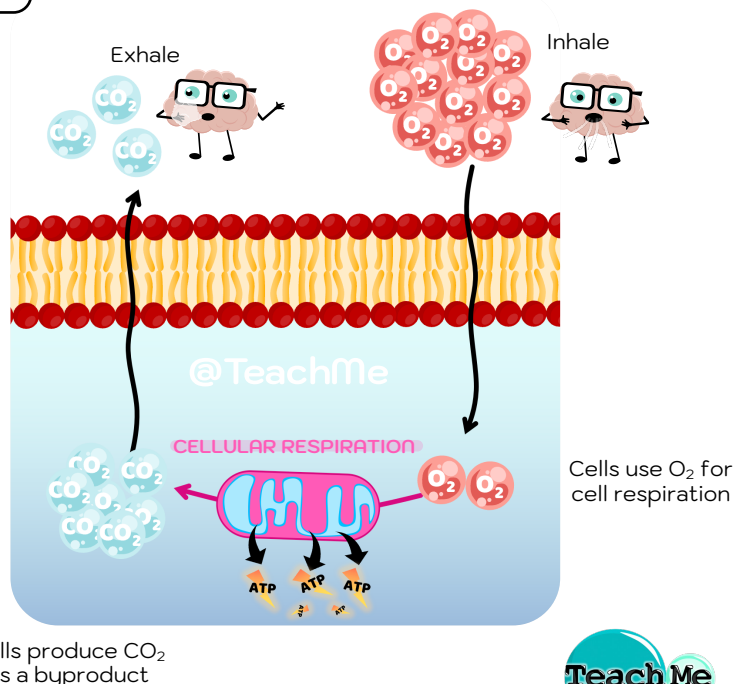
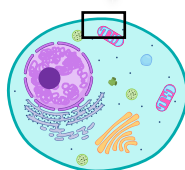
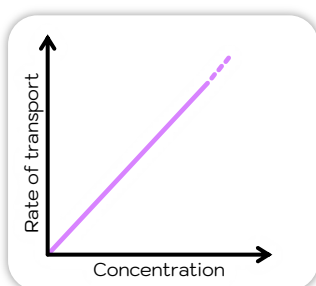
Example – Cells produce CO_2 as a byproduct of cellular respiration to make ATP, this causes a high concentration of CO_2 to accumulate into the cell. It will diffuse out of the cell as air is expelled during expiration. Inspiration then brings in O_2 , which will diffuse into the cell as it gets used up during cellular respiration.

Typical substances:



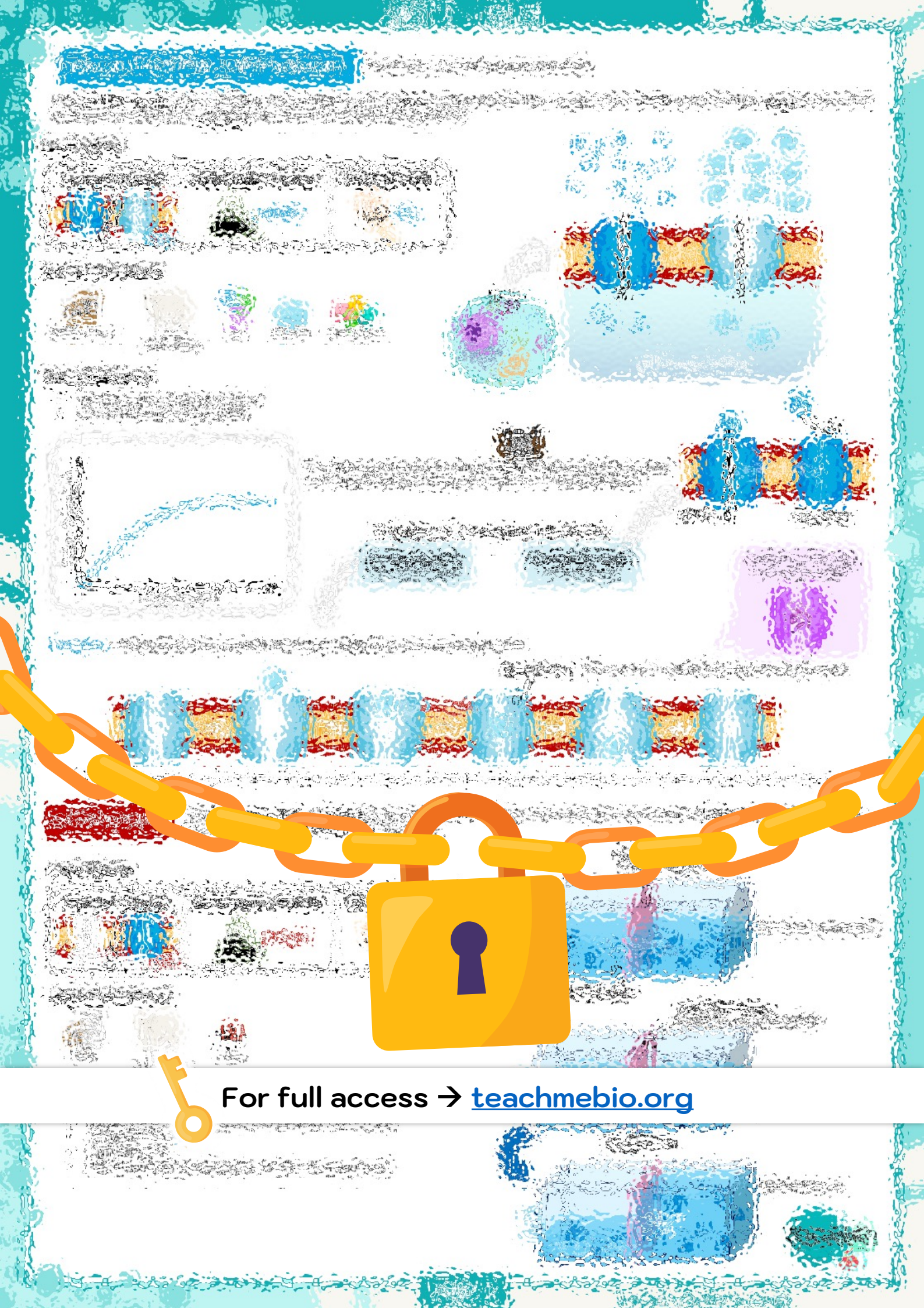
Rate Of Diffusion:

- Steepness of the concentration gradient
- Temperature 🌡️
- Nature of molecule (E.g., Size, polarity)
- Surface area



Cells produce CO_2 as a byproduct

Cells use O_2 for cell respiration



For full access → teachmebio.org



For full access → teachmebio.org



For full access → teachmebio.org

UNIT 3

Unit 3: The Cell
The cell is the basic unit of life. It is the smallest unit of an organism that can perform all the functions of life. Cells are found in all living organisms, from the simplest bacteria to the most complex plants and animals. The cell is often compared to a factory, where different parts perform different functions. The nucleus is the control center of the cell, containing the genetic material. 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 environment. The cell wall is a rigid structure that provides support and protection to the cell. The cell is the building block of life, and understanding its structure and function is essential for understanding the principles of biology.



For full access → teachmebio.org