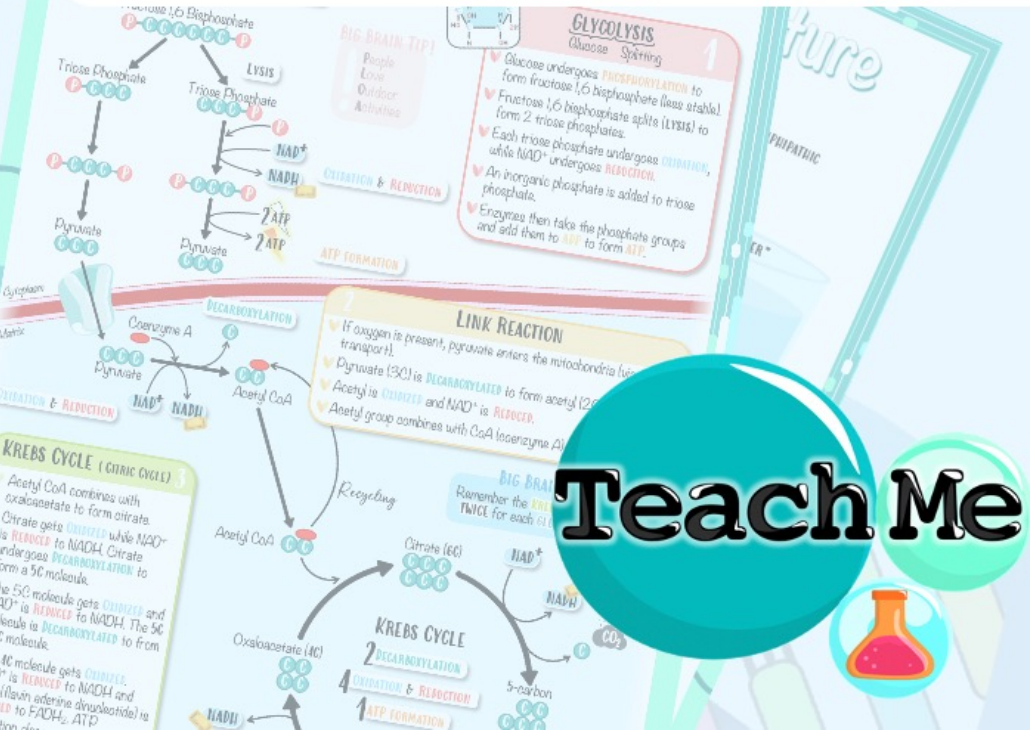
TeachMe

STUDY NOTES

B3.1 Gas Exchange (HL)



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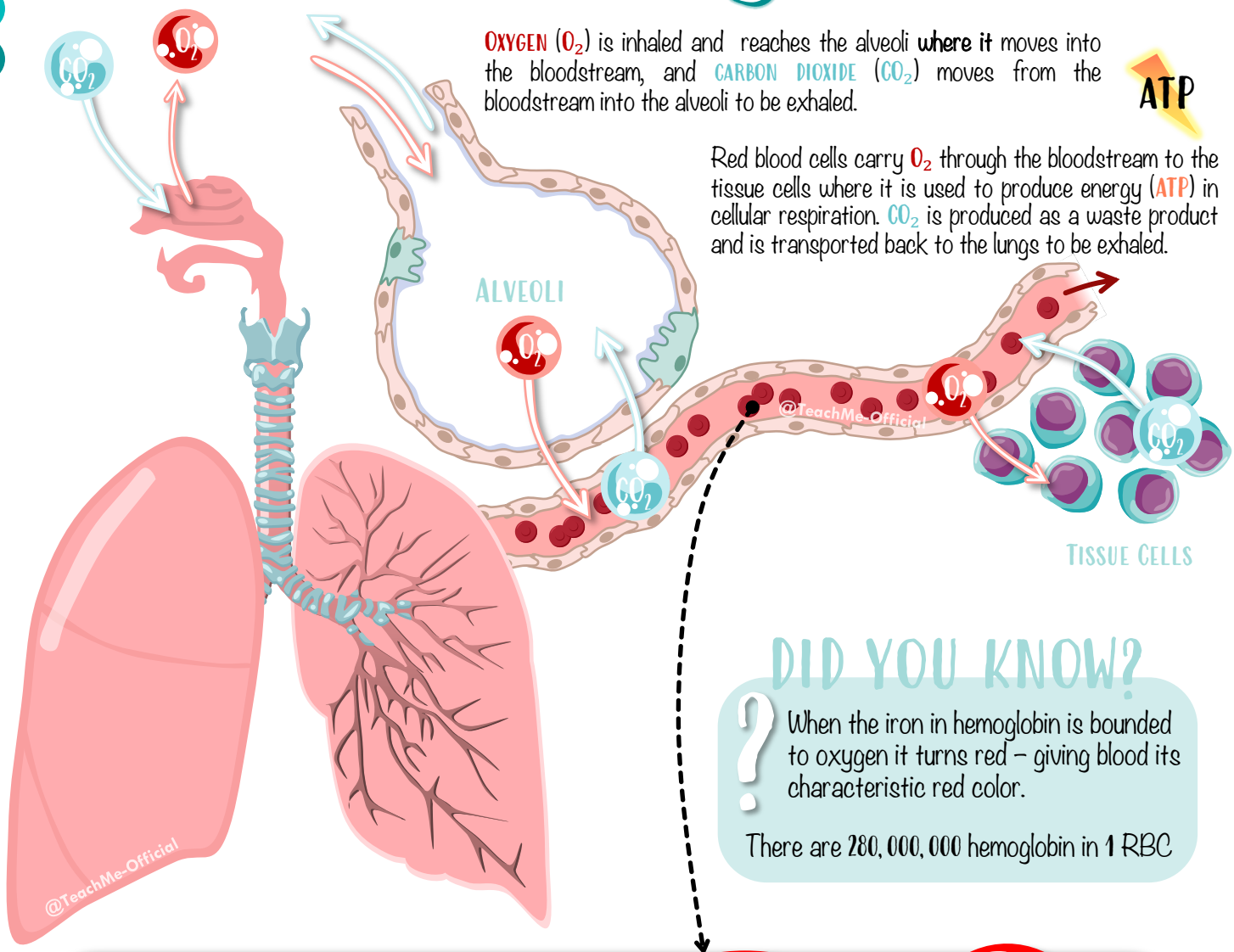
Gas Exchange (HL)

OXYGEN (O_2) is inhaled and reaches the alveoli **where it** moves into the bloodstream, and CARBON DIOXIDE (CO_2) moves from the bloodstream into the alveoli to be exhaled.

ATP

Red blood cells carry O_2 through the bloodstream to the tissue cells where it is used to produce energy (ATP) in cellular respiration. CO_2 is produced as a waste product and is transported back to the lungs to be exhaled.

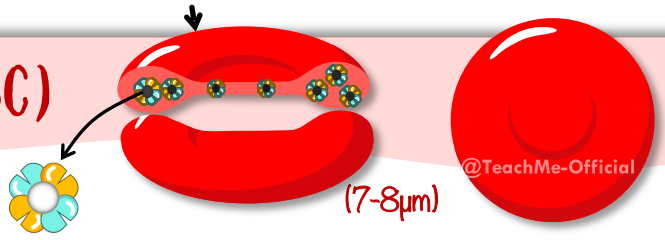


DID YOU KNOW?

When the iron in hemoglobin is bounded to oxygen it turns red – giving blood its characteristic red color.

There are 280, 000, 000 hemoglobin in 1 RBC

ERYTHROCYTES (RBC)

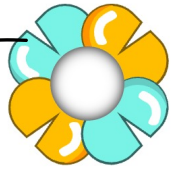


HEMOGLOBIN

Found in Erythrocytes

Reversibly bind O_2 & CO_2

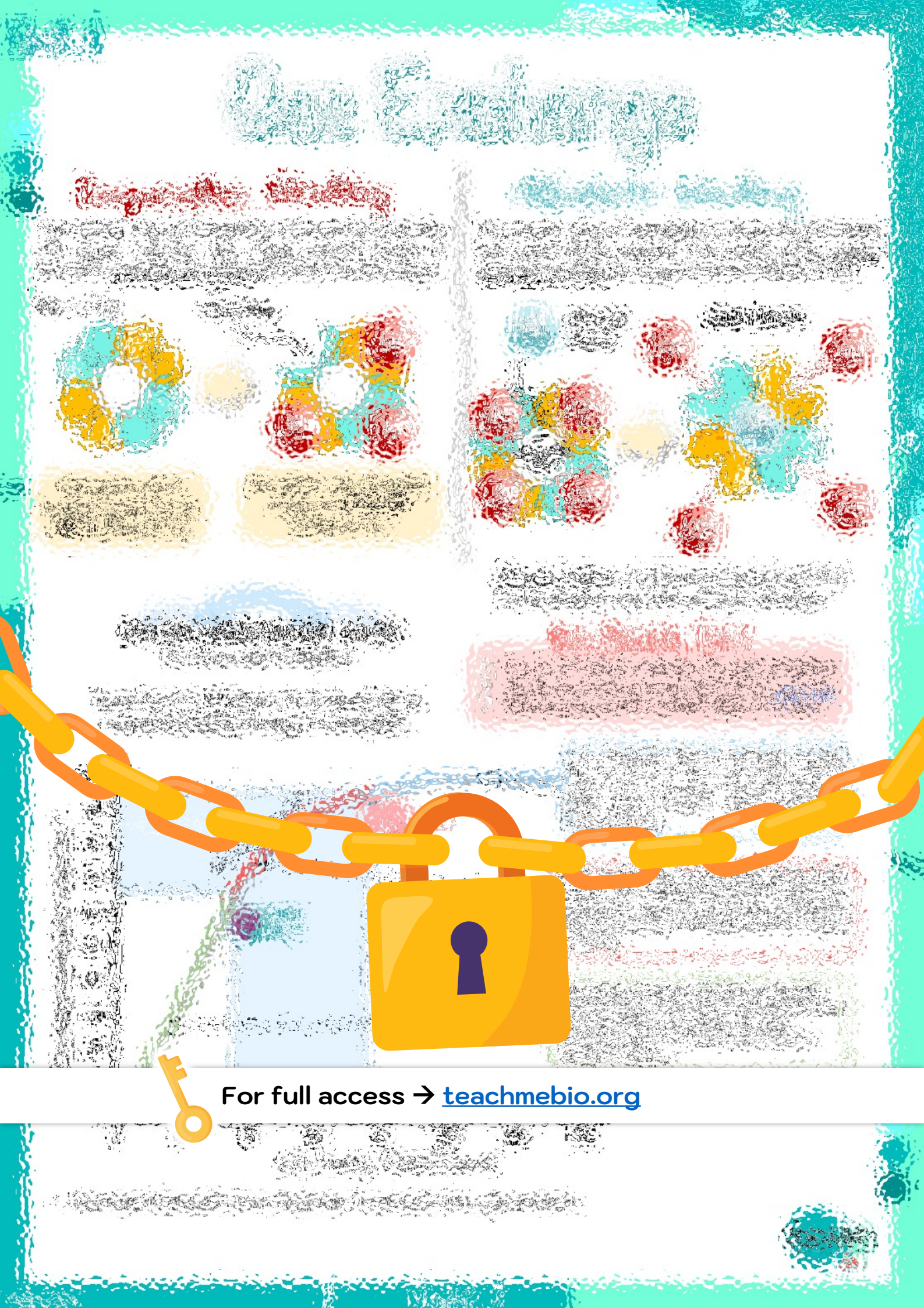
Conjugated Protein
- 4 polypeptides (protein)
- 4 Heme groups (each has an iron)

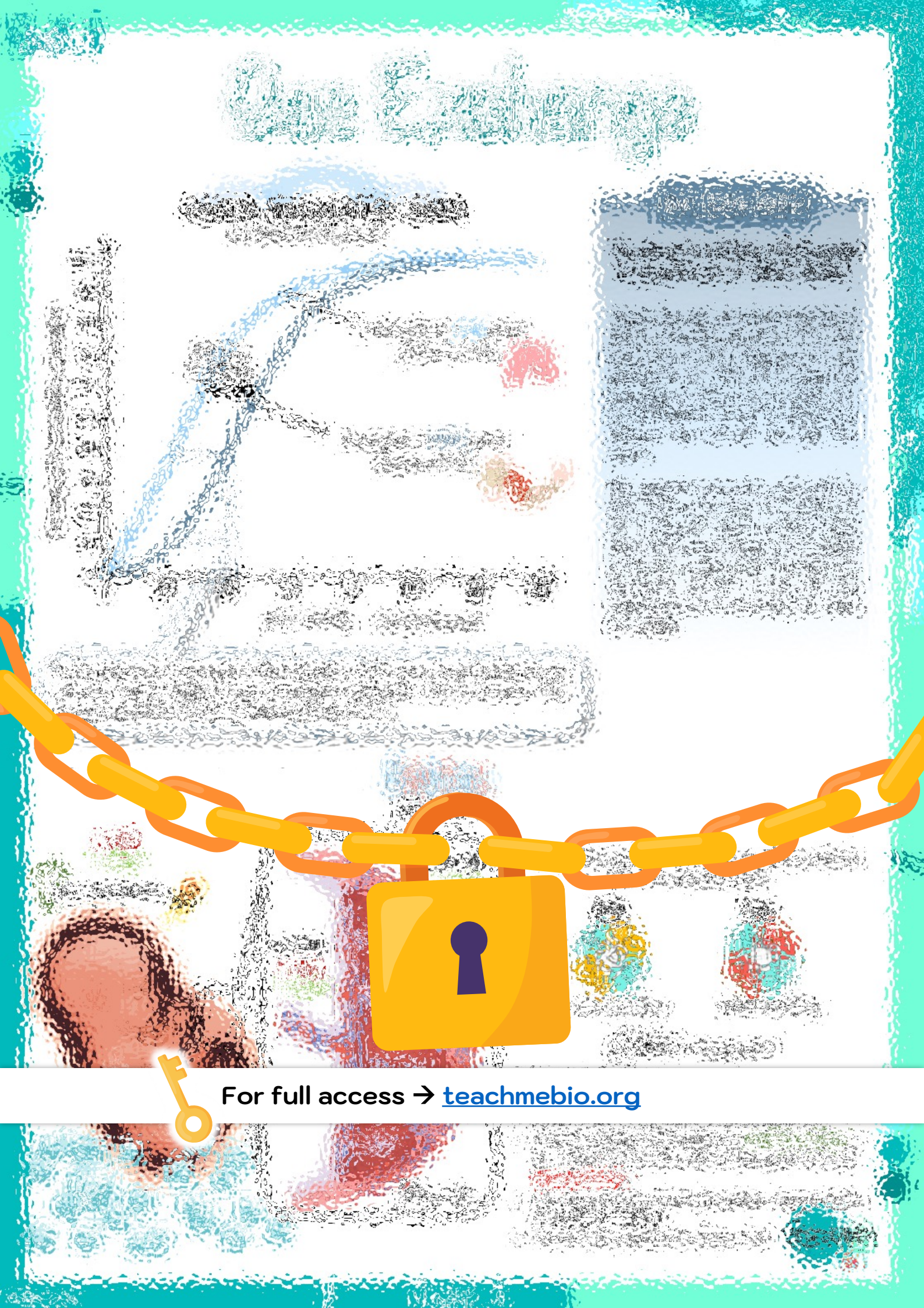


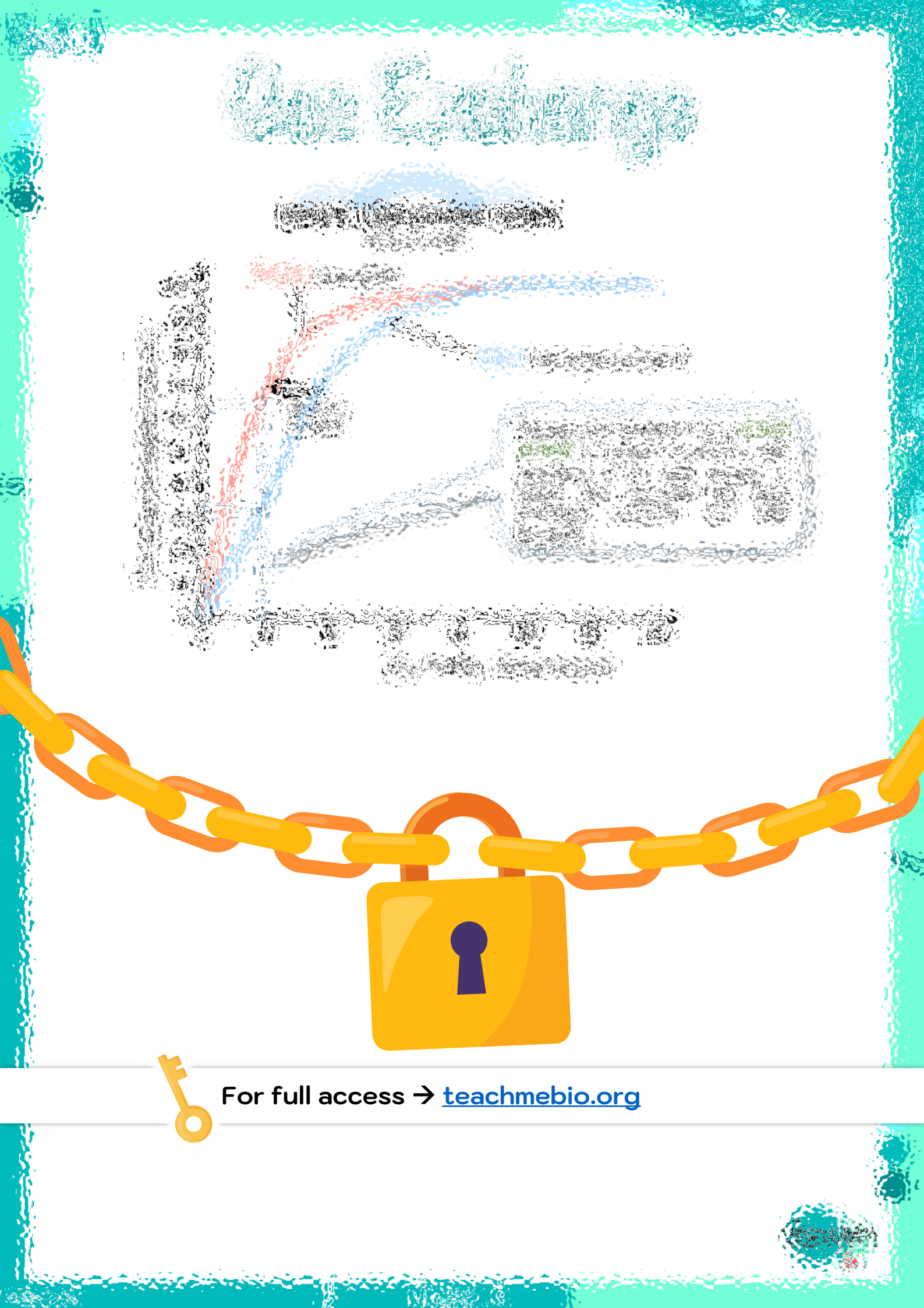
- **Biconcave shape** – More efficient gas exchange
- **No nucleus** - More space for hemoglobin.
- **Small & flexible** - Pass tiny capillaries

When hemoglobin reversibly binds to an oxygen molecules, it is the iron atom within the heme group that is bonding with oxygen.

Hemoglobin has a total of four iron atoms (one per heme group); hence it can carry four oxygen molecules (saturated).







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