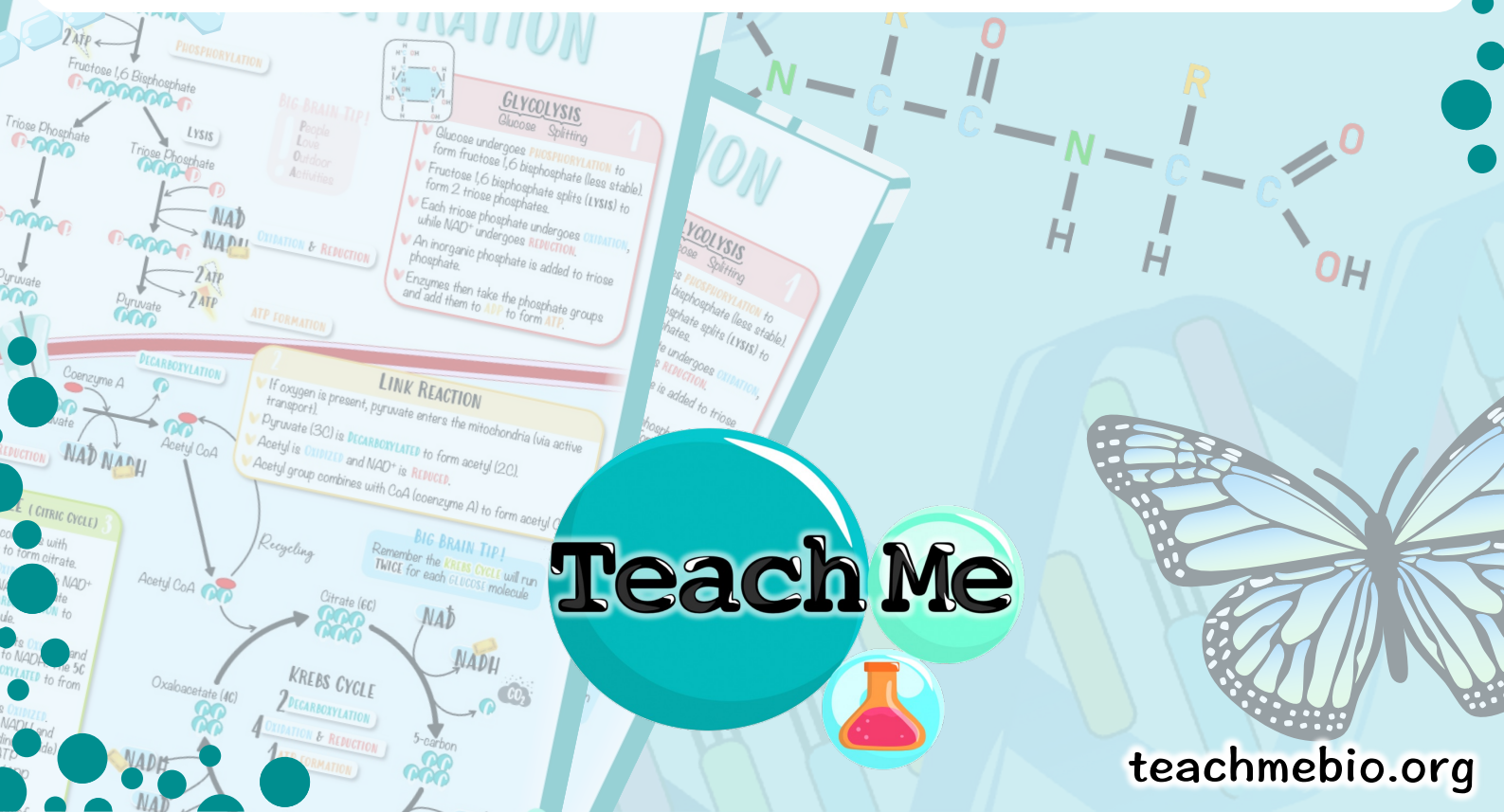


TeachMe

STUDY NOTES



CHAPTER 5 - THE MITOTIC CELL CYCLE STEM CELLS & cancer



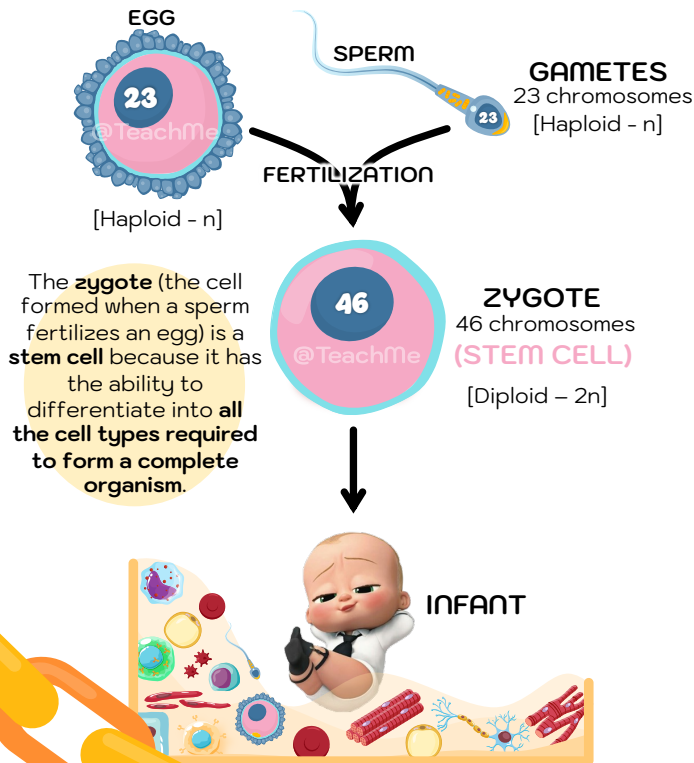
STEM CELLS & CANCER

STEM CELLS

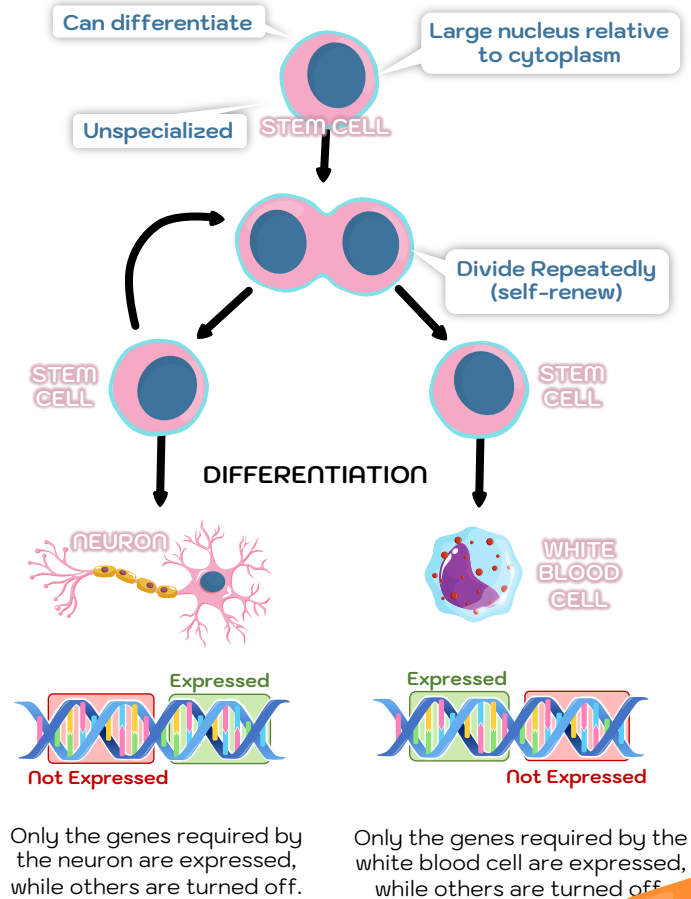
Stem cells are **UNSPECIALIZED** cells that retain their ability to:

- **Divide** indefinitely (an unlimited number of times)
- **Differentiate** (become specialized)

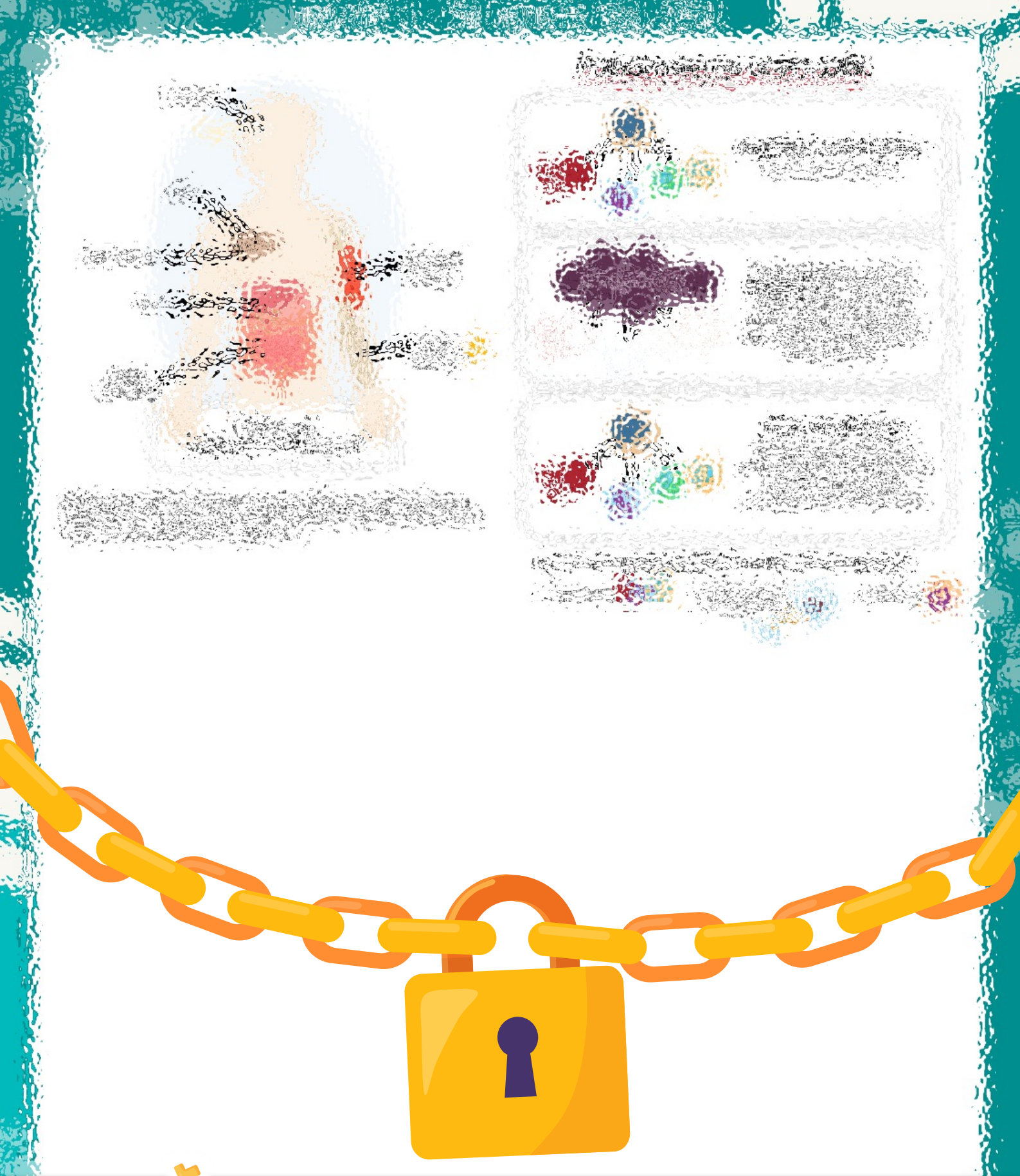
Differentiation involves the **expression** of some genes from the organism's genome in the cell, but not others.



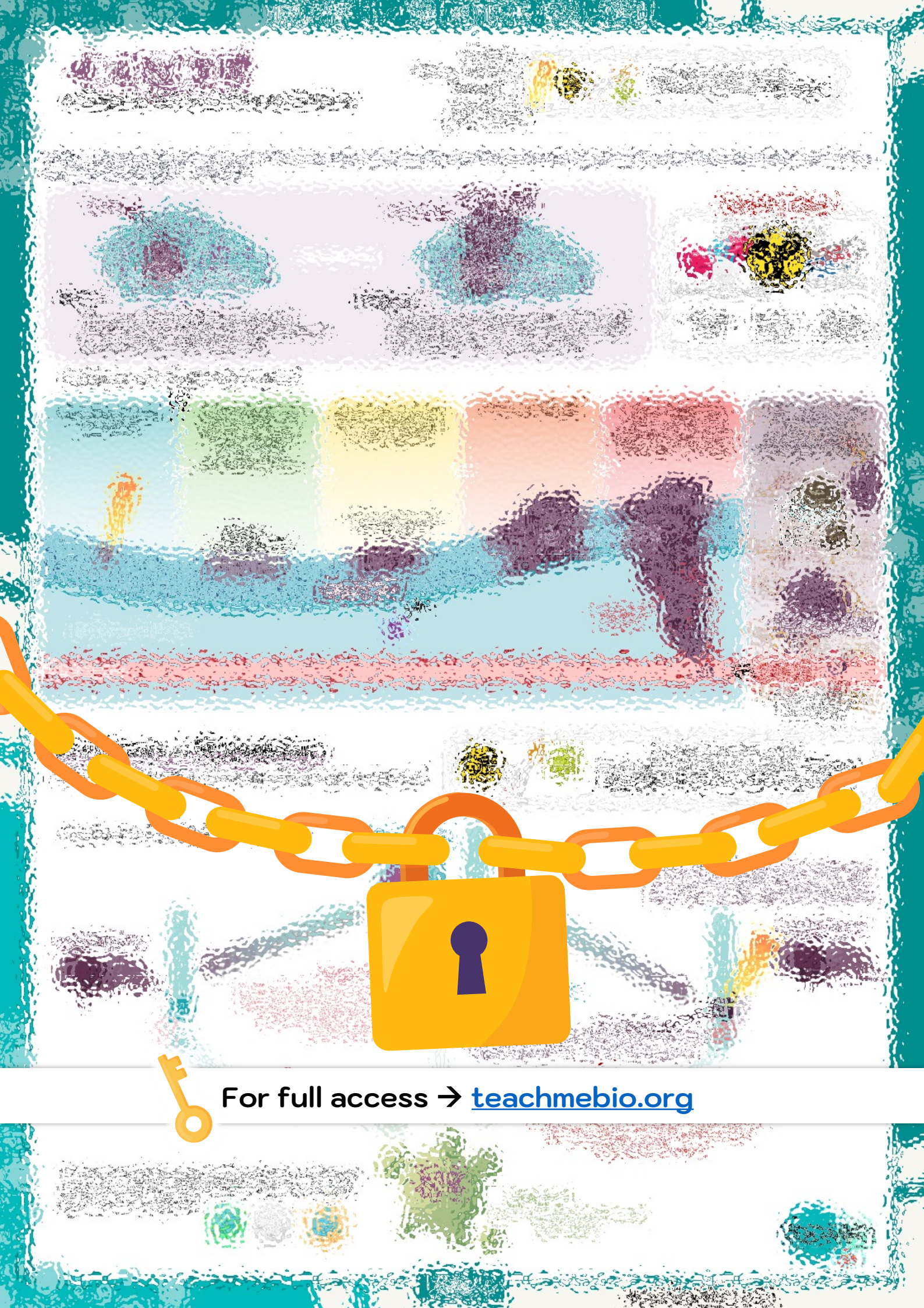
Features of Stem Cells



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UNIT 1

Unit 1: The structure and function of the cell. This unit covers the basic structure and function of the cell, including the cell membrane, nucleus, and organelles. It also discusses the process of cell division and the role of the cell in the body.

The cell is the basic unit of life. It is a small, specialized structure that carries out the functions of life. The cell is made up of various parts, each with a specific function. The cell membrane is the outer boundary of the cell. It controls what enters and leaves the cell. The nucleus is the control center of the cell. It contains the genetic material, which is passed on from parent to offspring. The organelles are the specialized structures within the cell that carry out specific functions. For example, the mitochondria are the powerhouses of the cell, producing energy for the cell to use. The Golgi apparatus is responsible for packaging and distributing the products of the cell. The lysosomes are the recycling centers of the cell, breaking down waste and recycling the components.

Cell division is the process by which a cell divides into two daughter cells. This is how the cell grows and reproduces. There are two main types of cell division: mitosis and meiosis. Mitosis is the process by which a cell divides to produce two identical daughter cells. Meiosis is the process by which a cell divides to produce four daughter cells, each with half the genetic material of the parent cell. This is how the body produces gametes (sperm and egg cells) for sexual reproduction.

The cell plays a vital role in the body. It is the basic unit of structure and function. Without cells, life would not be possible. The cell is responsible for all the functions of life, from growth and development to reproduction and death. Understanding the structure and function of the cell is essential for understanding life itself.



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