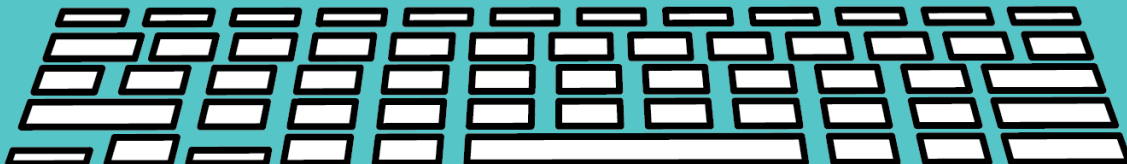
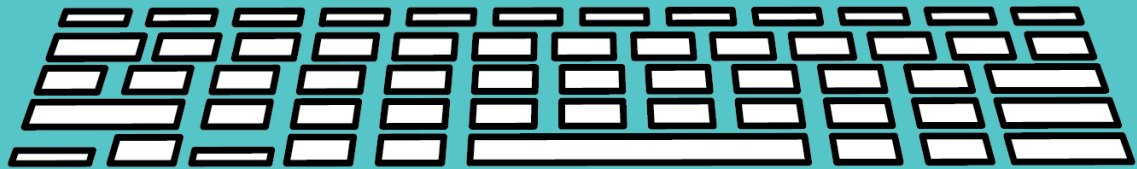


TO BE NEARLY  
SOMETIMES  
NAMED A  
UNIT OF  
REPRODUCTION

Short Answer	Type Answer Here
1. What color blood cells carry oxygen through the body?	
2. What term is used for the process of cells duplicating?	
3. What is the first phase of mitosis called?	
4. What do cells contain, which is like a fingerprint?	
5. What is another term for cell cleavage?	
6. What animal lays the largest known cell of all?	
7. What is the last phase of mitosis called?	
8. How many kinds of cell division are there?	



Short Answer	Type Answer Here	Fill in the Blank	Type Answer Here
1. What color do red blood cells carry oxygen through the body?		9. The cell is the basic structure of living organisms and ____.	
2. What term is used for the process of cells duplicating?		10. Skin, blood, and ____ cells multiply by mitosis.	
3. What is the first phase of mitosis called?		11. Cells have a ____ on the outside.	
4. What do cells contain, which is like a fingerprint?		12. One of the main goals of a cell is to ____.	
5. What is another term for cell cleavage?		13. ____ division occurs with simple organisms like bacteria.	
6. What animal lays the largest known cell of all?		14. The ____ cell membrane and the cytoplasm ____.	
7. What is the last phase of mitosis called?		15. An adult human has approximately 37.2 ____ cells.	
8. How many kinds of cell division are there?		16. Skin cells constantly ____ and reproduce.	



# CELL CYCLE

The cell is the basic structure of living organisms and biology. The body survives, grows, and develops thanks to cells. Some living beings have a single cell, while others are multicellular, like a human being. An adult has approximately 100 trillion cells.

Cells perform a variety of functions to survive. Various cell types have different purposes. Cells cannot function properly if they are too big, so they divide when needed. Human beings have multiple types of cells:

- Red blood cells carry oxygen throughout the body.
  - Specific cells work in the immune system.
  - Some cells stay in the placenta, attached to a mother.
  - Skin cells constantly divide and reproduce.
  - Nerve cells are another kind of cell in the human body.
- Groups of cells create tissue and organs.

Cells have a membrane on the outside. Imagine a plastic bag with many small holes. These holes allow things to enter and out of the cell. The bag contains fluid and cell fragments.

Inside the cell membrane are the cytoplasm and nucleus. Cytoplasm is a fluid that surrounds the nucleus and transforms energy while fulfilling the cell functions. The nucleus contains genetic material and elements that cause division and reproduction.

Cells contain DNA, which is a cell's fingerprint. Like a fingerprint, DNA is different from person to person.

Cells constantly make new cells that grow or replace dead cells. Yet, some cells don't divide as often. There are three kinds of cell division: binary fission, mitosis, and meiosis.

Binary fission occurs with simple organisms like bacteria. DNA doubles, and the cell doubles its size. From here, the duplicate DNA strands shift to opposite sides of the cell. Now the cell wall pinches in the middle to create two separate cells.

The cell cycle highlights how cells are constantly dividing.

1. G1 phase - The cell cycle begins with phase G1. Here the cell rests, grows, and does its job. Some cells stop here and enter phase G0. They don't divide for a long time or even permanently.
2. S phase - Other cells duplicate DNA in the S phase in preparation for cell division.

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3. G2 phase - The cell prepares to divide.
4. M phase (mitosis phase) - This is when the cell physically divides.
5. Mitosis is the process of cells duplicating. Skin, blood, and muscle cells multiply by mitosis. This process ends with a mother cell and daughter cells. Everything, including the DNA, functions, and genetic code repeats.

Mitosis (M phase) has its own cycle:

1. Prophase,
2. Metaphase,
3. Anaphase, and
4. Telophase

Interphase is a cell under normal conditions. This is when the cell rests and makes energy for mitosis. During interphase, the genetic material is copied. G1, S, and G2 phases are part of the interphase.

When it is time to multiply, the cell enters the first stage of mitosis - prophase. DNA copies itself and makes X shaped bunches of material called chromosomes. At this point, the nuclear membrane and nucleolus breaks down and disappears.

The next stage is the metaphase. Chromosomes form a line in the middle of the cell. The cell is preparing for a "tug of war" in the next phase.

The next phase is next when the centerline of chromosomes separate. The edges of the cell "reach" for chromosomes like a fisherman.

Chromosomes shift to the center of the cell and opposite sides of the cell. The next phase is telophase happens next when the cell starts to pinch in two. Two new nuclear membranes form around each set of chromosomes. Nucleoli reappear, and chromosomes unwind into chromatin.

Finally, the cell enters cytokinesis (cell cleavage) occurs. The cell splits in half, and two daughter cells develop.

Meiosis is another part of the cell cycle that differs from mitosis because it produces four daughter cells, not two. Also, these new cells contain half the DNA of the original cell. Cells using meiosis create sperm and egg reproduction cells.

Motor neurons are the longest cells in the human body, extending from the lower spinal cord to the big toe. The longest cell in the human body is a fertilized egg. Yet, you still cannot see it with your eyes. The smallest known cell of all is the ostrich egg that can weigh up to three pounds. The final fun fact - humans carry more bacteria in their body than cells!

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