

Cell Division

Cell division occurs for _____ reasons:

- 1) To _____ an organism's cell count allowing the organism to _____.
- 2) To _____ new cells to replace _____ ones.
- 3) To make sex cells: _____ or _____ **AND** _____.

Cell division is a process that is essential to the production of new cells for the purpose of:

- _____
- _____
- _____

Cells , however, are not constantly dividing.

Most of the time they perform valuable functions to ensure that the organism is in good working order i.e. _____.

The period when they are not dividing is called _____.

By the end of interphase, a cell prepares to divide by duplicating its DNA.

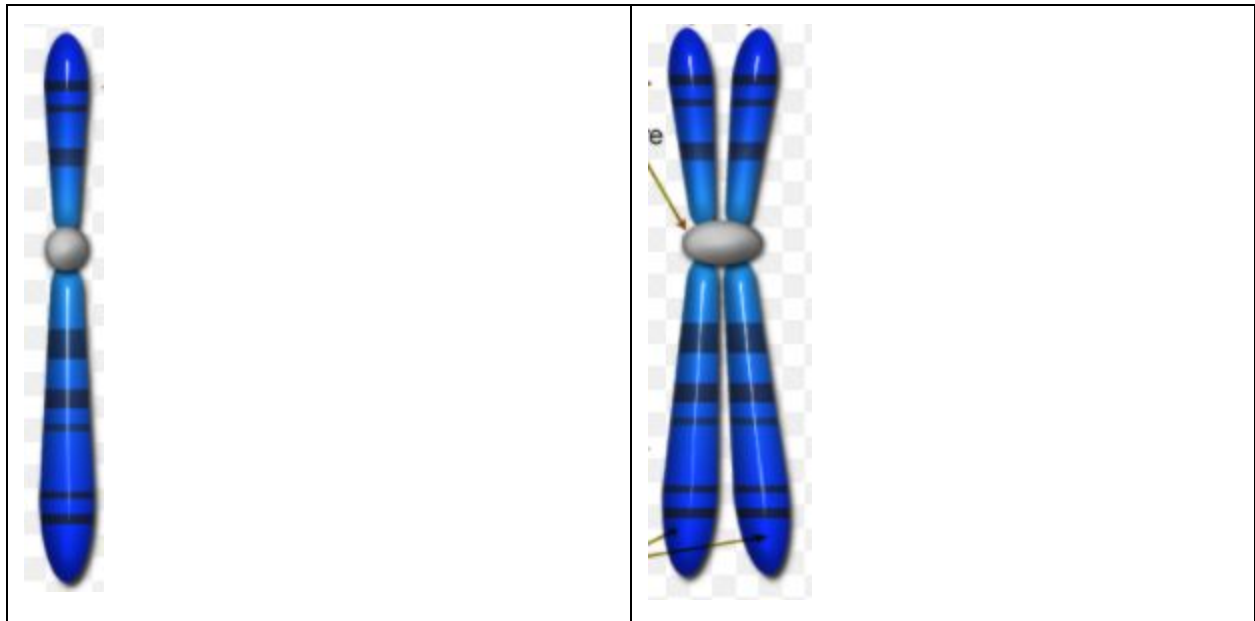
This copying of the DNA is referred to as _____.

As replication begins the DNA strands coil and condense to form what are called

_____.

Chromosomes are shaped like an _____ because 2 chromatids are joined in the centre by a _____.

By replication, each chromatid is an exact copy of the other.



Each person has _____ chromosomes.

Half of them you got from your biological mother and half from your biological father.

The number of pairs of chromosomes in different organisms varies.

Homo sapiens (human beings) have _____ pairs of chromosomes.

The **23rd pair** determines the sex of the individual:

_____ = female

_____ = male

Even though we look and act differently, there is only 99.8 % difference in our DNA from human to human.

When cells replicate they make a copy of the _____ for the new cell.

This is how every cell in our bodies contains a complete set of instructions for making you.

There are **2 types** of cell division: _____ AND _____.

Mitosis

Mitosis results in the formation of _____ cells which means that each cell contains _____ copies of the same gene--one from each parent.

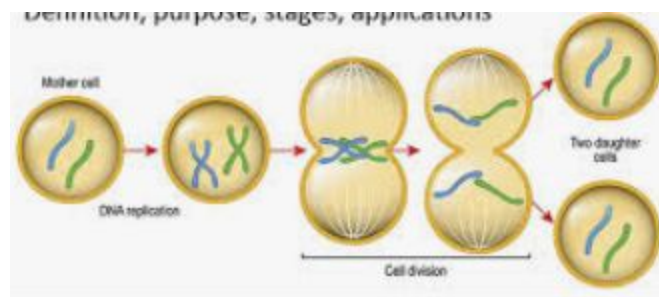
All cells in the human body except for _____ are diploid.

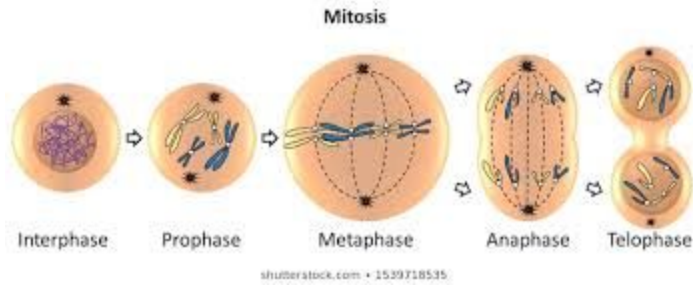
Mitosis is a process of cell division in which cells _____ in

order to ensure _____ and _____

_____.

Mitosis consists of different **PHASES**:





Cell division is good except...

Cancer

- Results from uncontrolled cell division--when cells keep dividing when they should not!!
- In 1775 an English surgeon reported on the unusual occurrence of scrotal cancer in men who had worked as chimney sweeps as boys and he speculated that the soot, tars and dirt to which the chimney sweeps were chronically exposed may have played a role.
- Another Englishman warned that excessive use of snuff or chewing tobacco might lead to nasal cancer or cancers of the mouth, tongue or lip.

There are many environmental factors that you can avoid to protect yourself from cancer!!!

Cells contain _____ and DNA which condenses to form _____ in the _____ of the cell.

When unravelled, the structure of DNA is a _____

Made of _____ different nucleotide bases. The complete set of base pairs for a species is called its _____. These base are grouped together to form sections of DNA called _____ which are the instructions for making _____ that result in our genetic _____

like eye colour, hair colour, height etc. The DNA in each cell gets there as a result of a cell _____. There are _____ types of cell division.

_____ is when the cell copies its DNA, splits once and produces _____ identical _____ cells which are _____ (46 chromosomes for humans).