

CELL DIVISION

(use with PowerPoint Presentation)

UNICELLULAR VS MULTICELLULAR

Unicellular organisms are made of only one _____.

Ex. _____, _____, _____.

Multicellular organisms are made of more than one _____.

Ex. _____, _____, _____.

WHY DO CELLS DIVIDE?

1. Replace _____ or _____ cells.
2. Stay small enough for efficient _____, _____ and _____ diffusion.
3. Enable an organism to _____ and become _____. A _____ cell divides and daughter cells _____ to perform one particular role in the body.

HOW DO CELLS DIVIDE?

The two forms of cell division are:

1. _____
2. _____

The purpose of _____ is to create TWO _____ identical daughter cells from ONE _____ cell. Most cells reproduce by _____. Mitosis produces _____ cells (not _____ cells) so it is referred to as _____ cell division. Mitosis produces new _____ cells, _____ cells, _____ tip cells, etc.

MITOSIS

The four phases of mitosis are:

1. _____
2. _____
3. _____
4. _____

Mitosis only involves _____ events, ie. separation of the _____. BEFORE Mitosis, the cell is in _____ (grows, _____, replicates _____). AFTER Mitosis, the cytoplasm splits by _____.

MEIOSIS

The purpose of Meiosis is to create FOUR _____ sex cells (_____) so when these gametes combine (_____), the offspring are _____ different from the parents. Gametes are only produced in the _____ (sex organs), so Meiosis occurs in the _____ and _____ of animals. The gametes produced by Meiosis are transferred during _____ reproduction in plants, animals and many other organisms.

Meiosis consists of _____ major phases (compared to _____ in Mitosis) and is somewhat more complex.

Meiosis I: Prophase I, _____ I, Anaphase I, _____ I
Meiosis II: _____ II, Metaphase II, _____ II, Telophase II

The end result is:

- _____ daughter cells (instead of _____ cells)
- daughter cells are genetically _____ (_____ changes)
- daughter cells are _____ (half the number of chromosomes)

MITOSIS VS. MEIOSIS

Mitosis produces _____ cells (body cells). Human somatic cells have _____ chromosomes. During Interphase, _____ chromosomes are produced by _____. After Mitosis, each daughter cell is _____ with _____ chromosomes and the cells are genetically _____ to the parent cell.

Meiosis produces _____ (sex cells, _____ and _____) in the ovaries and testes. Meiosis is _____ as long as Mitosis and daughter cells (gametes) are genetically unique (genetic _____).

Daughter cells produced by Meiosis have _____ the number of chromosomes compared to the parent cell (ie. haploid with _____ chromosomes in humans). When gametes unite in fertilization, the fertilized egg (_____) will have 46 chromosomes. More or less than this number causes a genetic _____.