

Name: _____ Period: _____

Study Guide for Meiosis Quiz/Test

Know the following:

- 1. The relationship between sex cells and body cells** - body cells reproduce by Mitosis, while sex cells reproduce by Meiosis. Body cells contain the complete set of chromosomes, while sex cells have half the set of chromosomes.
- 2. Number of chromosomes a human body and sex cell contains-** a human body cell contains 46 chromosomes, while a sex cell contains 23 chromosomes.
- 3. Be able to compare and contrast Mitosis and Meiosis.**

<u>Characteristic</u>	<u>Mitosis</u>	<u>Meiosis</u>
Type of cells that divide	Body Cells	Sex Cells
The number of chromosomes before the cell begins to reproduce	The same as the parent cell.	The same as the parent cell.
Metaphase	Sister chromatids line up at the center of the cell.	(Metaphase 1): The homologous Pairs line up at the center of the cell. (Metaphase 2): The sister chromatids line up at the center of the cell.
Anaphase	The sister chromatids separate from their copies.	(Anaphase 1): The homologous pairs separate from each other. (Anaphase 2): The sister chromatids separate from their copies.

<u>Characteristic</u>	<u>Mitosis</u>	<u>Meiosis</u>
Number of chromosomes in each cell at the end of reproduction.	The same as the parent cell.	Half the amount of the parent cell.
Total Number of Phases	4	8
Number of Daughter Cells Produced	2	4

4. Stages of Meiosis -in detail-

(NOT PART OF MEIOSIS, BUT PART OF CELL CYCLE:

Interphase - In Interphase, the cell prepares to divide by growth and replication of DNA and organelles.)

STAGE 1 - Prophase I - In Prophase I, DNA condenses, the nucleus disappears and spindles form

STAGE 2 - Metaphase I - In Metaphase I, the **Homologous Pairs/Chromosomes** line up in the middle of the cell.

STAGE 3 - Anaphase I - In Anaphase I, the **Homologous Pairs/Chromosomes** separate and move to opposite ends of the cell.

STAGE 4 - Telophase I - In Telophase I, the **Homologous Pairs/Chromosomes** decondense and the nucleus reappears in both cells. (Cytokinesis occurs during Telophase) In animal cells, the cytoplasm pinches in and in plant cells a new cell wall is built.

STAGE 5 - Prophase II - In Prophase II, DNA condenses, the nucleus disappears and spindles form

STAGE 6 - Metaphase II, In Metaphase II, the **Sister Chromatids** line up in the middle of the cell.

STAGE 7 - Anaphase II - In Anaphase II, the **Sister Chromatids** separate and move to opposite ends of the cell.

STAGE 4 - Telophase II - In Telophase II, the **Sister Chromatids** decondense and the nucleus reappears in both cells. (Cytokinesis occurs during Telophase) In animal cells, the cytoplasm pinches in and in plant cells a new cell wall is built.

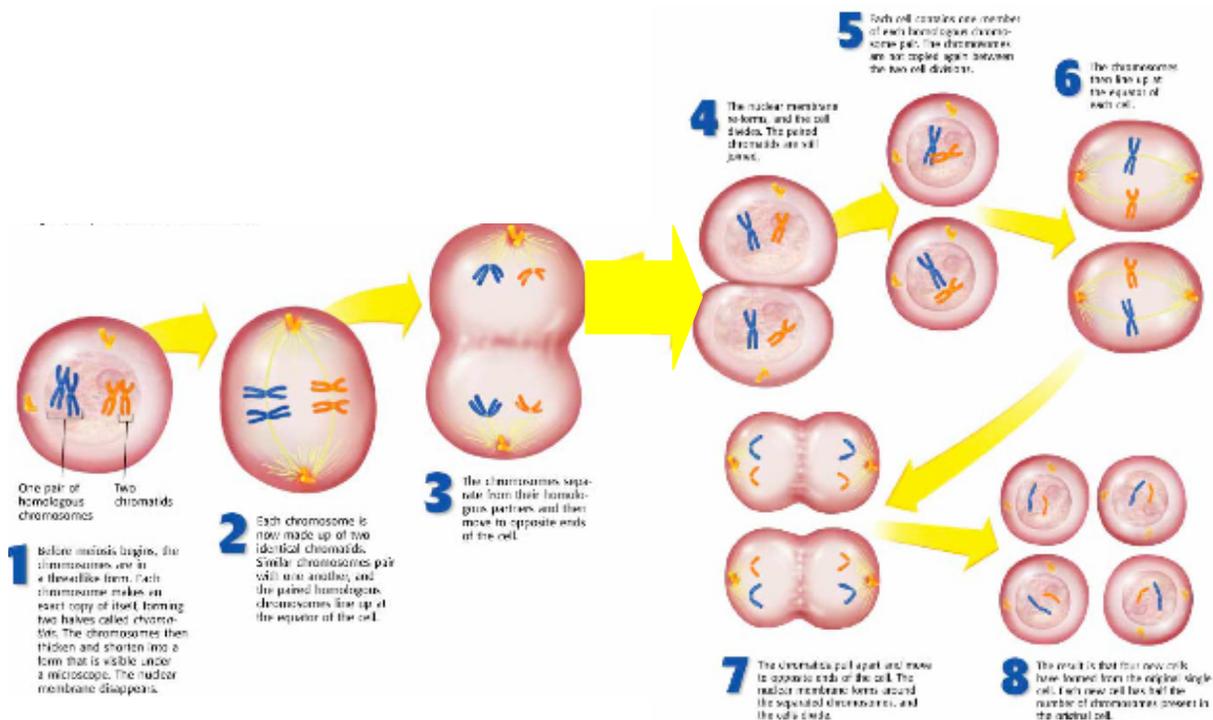
5. Know the vocabulary – see practice tests and vocabulary sheet.
The vocabulary is similar to Mitosis.

6. Be able to put the stages of Meiosis in chronological order.

- 1.) Prophase I
 - 2.) Metaphase I
 - 3.) Anaphase I
 - 4.) Telophase I
 - 5.) Prophase II
 - 6.) Metaphase II
 - 7.) Anaphase II
 - 8.) Telophase II
- (REMEMBER! PMAT)

7. Be able to label the stages of Meiosis from a diagram.

SEE THE PHASES OF MITOSIS HANDOUTS FOR LARGER DIAGRAMS!



8. Gonads and Gametes

Gonads: Sex Organs - for males - testis and for females - the ovary

Gametes: Sex Cells - for males - sperm and for females - eggs

☺ Review all journals, notes, labs and worksheets! ☺