

Name _____ Date _____ Period _____

MEIOSIS NOTES ORGANIZER

1. Meiosis is necessary for (asexual / sexual) reproduction.
2. Cell Numbers
 - a. Human body cells (**somatic**) have _____ chromosomes.
 - i. How many chromosomes are contributed by *each parent*?
3. Describe **homologous chromosomes**.
4. A pair of homologous chromosomes have what features in **common**?
5. What are **gametes**?
 - a. How many chromosomes will you find in human **gametes** (egg and sperm)?
6. Define the following and *identify cells* which are diploid and haploid.
 - a. **Diploid** –

 - b. **Haploid** –
7. Why it is important for sexually reproducing organisms, such as humans, to produce gametes?
8. _____ is the process which **produces gametes**!
 - a. If gametes are haploid, with half the number of chromosomes, when is the number of chromosomes restored?

9. Meiosis

- a. Reduces the chromosome number by _____ through the separation of _____ chromosomes.
- b. **Big picture:** How many times is **DNA duplicated** prior to meiosis?
- c. **Big picture:** How many **cell divisions** occur during meiosis?
- d. **Big picture:** Meiosis produces _____ *daughter cells* that are genetically (identical / different).

10. What occurs during **Interphase** of Meiosis?

11. Outline the process of Meiosis in males. Draw a picture and describe what is occurring in each phase.

Meiosis I

Prophase I	Prophase I
Metaphase I	Metaphase I
Anaphase I	Anaphase I

Telophase I	Telophase I
--------------------	--------------------

Following **Cytokinesis of Meiosis I**, you have:

- How many cells?
- Are they haploid or diploid?

Meiosis II

Prophase II	Prophase II
--------------------	--------------------

Metaphase II	Metaphase II
---------------------	---------------------

Anaphase II	Anaphase II
--------------------	--------------------

Telophase II	Telophase II
---------------------	---------------------

Following **Cytokinesis of the cells in Meiosis II**, you have:

- How many cells?
- Are they haploid or diploid?

12. Summarize the *importance of Meiosis*:

13. How does meiosis create genetic variation? Why is this important?

14. Asexual vs. Sexual Reproduction

- a. Asexual Reproduction
- b. Sexual Reproduction

15. Fill in the following venn diagram, comparing and contrasting the processes of mitosis and meiosis.

