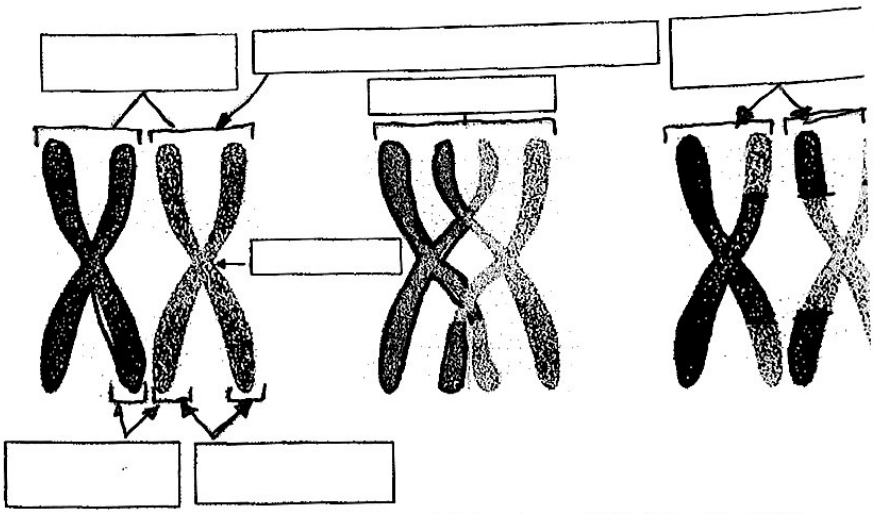
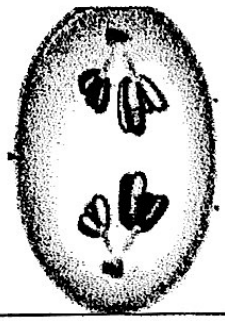
Key Unit 4 Meiosis Study Guide

1. Label the model using the word bank. There is one more word then there is space so one word will not be used.

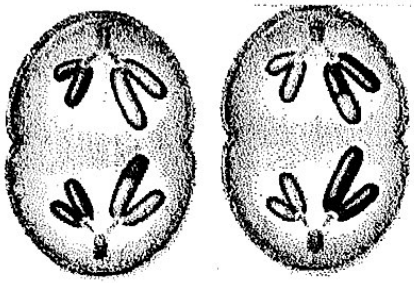
Homologous Chromosomes	Single Duplicated Chromosome
Crossing Over	Centromere
Non-Sister Chromatid	Recombinant Chromosome
Sister Chromatid	Gene



2. Label 1-8 with the following phases of meiosis. Notice that the depiction of Telophase 2 in this diagram is a little bit off as the cells are already divided to show the result of meiosis.



1.



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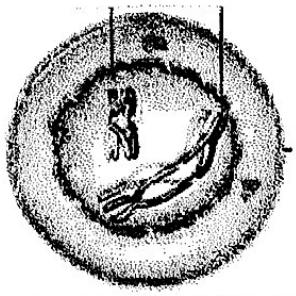

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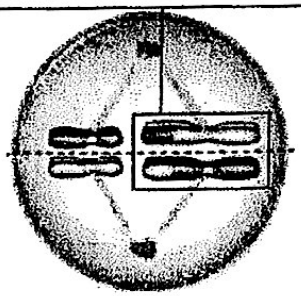

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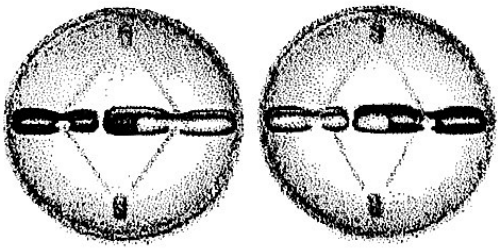

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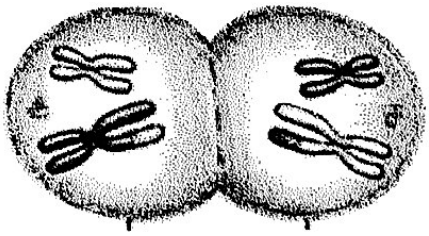

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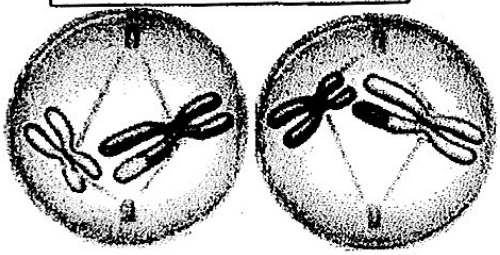

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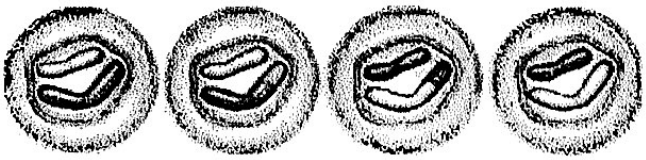

8.

3. What is the name of the structures that pull apart the chromosomes in anaphase 1 and 2?

_____

4. What has to happen to DNA prior to meiosis beginning? What is the name of the stage in which this occurs? _____
5. What are sister chromatids? In meiosis when do they get seperated? _____
6. What type of cells does mitosis make vs what type of cells does meiosis make? _____
7. What are gametes? _____
8. What is and what happens in Meiosis 1 and Meiosis 2? _____
9. How many chromosmoes are there in human somatic (body) cells vs gametes (sex) cells and why is that important? _____
10. *Circle the correct words that complete the sentences.* Meiosis is a process that begins with a single cell that has both sets of chromosomes called a **diploid/haploid** cell. As a result of meiosis **gametes/body cells** are produced.During this process **two/four** cells are produced. Each cell is genetically **identical/different** to the other cell(s). These cells have **half/double** the chromosomes of the original cell which makes them **diploid/haploid.**
11. Which variable is used to describe the number of chromosomes in a gamete? _____
12. Which number and variable is used to describe the number of chromosomes in a diploid organism such as a human? _____

Questions 13-15 are all asking the same exact thing. It is just different wording and vocabulary that you need to be familiar with to answer questions regardless of how they are worded.

13. If a human has 46 chromosomes (or 23 pairs) in a body cell which is diploid, how many chromosomes does it have in the gametes which are haploid? _____
14. If a dog has 78 chromosomes in diploid cells, how many chromosomes does it have in its haploid cells? _____
15. If an organism's diploid number is 24 what is its haploid number? _____
16. *Now work backwards.* If an organism's haploid number is 6 what is its diploid number? _____
17. What are homologous chromosomes and what types of cells have homologous chromosomes?
18. What is crossing over? When does it occur?
19. In the space below draw what crossing over looks like.