

5.3 The Cell and Inheritance

Date _____

Last Name _____ First _____ period _____

1. Who developed the gene theory? _____

2. What are the two parts of the "Gene Theory?"
 - a. _____ are passed from _____ to _____.
 - b. _____ are structures in the cell that produce _____.

3. What was Walter Sutton's Hypothesis?
 - a. Walter Sutton hypothesized that _____ were the _____ of _____.
 - b. Genes are found on _____.

4. How are chromosomes found in cells? _____
 - a. How many chromosomes do human cells have? _____
 - b. How many chromosomes do grasshopper cells have? _____

6. What are the special cells produced by the body for the purpose of reproduction called?
 - a. _____ are cells for reproduction.

7. What kind of cells are gametes? _____
 - a. What kind of gamete do **males** produce? _____
 - b. What kind of gamete do **females** ? _____

8. How are embryos produced?
 - a. a _____ cell _____ with an _____ cell to produce an _____.
 - b. Draw a sketch of a sperm uniting with an egg below:

9. What are the two kinds of cell division, and what do each produce?

a. _____ produces → _____ body cells

1. draw a basic diagram of mitosis.

b. _____ produces → _____ non identical sex cells

1. draw a basic diagram of meiosis.

c. How many chromosomes do body cells end up with? _____%

d. How many chromosomes do sex cells end up with? _____%

12. What are the 4 stages of Meiosis and what happens at each stage?

a. **Beginning** - A _____ copy of each _____ is made.

b. **Meiosis I** - Chromosomes _____ up and line up in the _____. Pairs _____ and move to each _____ of the cell.

c. **Meiosis II** - _____

d. **End of Meiosis** _____

13. Label your drawing of meiosis in 11b above with the four stages.

14. Your turn. Compare and contrast **mitosis** and **meiosis**. Write a paragraph. Start by writing a topic sentence and then continue the paragraph with details. Remember when you compare and contrast you are explaining similarities between the two and differences between the two.