

Name **KEY**

Date

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# Mitosis and Meiosis Study Guide

1. Genes are short segments of DNA and are located in the \_\_\_\_\_ of a cell.  
**~chromosomes**
2. What is the process by which the number of chromosomes is reduced by half to form sex cells?  
**~meiosis**
3. Fertilization is an important step in animal reproduction. What happens during fertilization?  
**~The sperm and egg cell join to create a new living thing.**
4. The process by which a cell creates an exact copy of itself, allowing an organism to grow is known as:  
**~mitosis**
5. What is mitosis?  
**~how cells reproduce**
6. What are genes?  
**~Segments of DNA that code for physical characteristics.**
7. In the offspring pictured to the right, what percentage of genes comes from the female parent?  
**~50% (half)**
8. How does your body grow as you get older?  
**~Your cells divide, producing new cells.**
9. When sex cells combine to produce offspring, how many chromosomes will each sex cell contribute?  
**~Half the number of chromosomes in the body cells.**
10. In mitosis, how does the number of chromosomes in a daughter cell compare to the number of chromosomes in a parent cell?  
**~The daughter cell has the exact same number of chromosomes as the parent cell.**
11. How does a sperm or egg cell differ from all the other cells in your body?  
**~Sperm and egg cells contain only half the number of chromosomes as other cells.**
12. In frogs there are 26 chromosomes in a fertilized egg. How many chromosomes are in the egg and sperm cells before fertilization?  
**~13 chromosomes in the egg cell and 13 chromosomes in the sperm cell.**
13. If an organism reproduces asexually, as in budding, how will the offspring compare genetically to the parent?  
**~The offspring will be genetically identical to the parent.**
14. How do mitosis and meiosis differ with regards to daughter cells?  
**~Mitosis produces 2 identical daughter cells, while meiosis produces 4 genetically different cells.**
15. What type of reproduction results in offspring that are genetically identical to the parent?  
**~asexual reproduction (budding, fragmentation, binary fission)**