

## Reading Guide Packet: Chapter 11: Cell Growth & Division

Biology A

Name \_\_\_\_\_ Period \_\_\_\_\_

### Ch 11.1: Cell Growth, Division & Reproduction

1. What are some of the difficulties a cell faces as it increases in size?
2. What happens to the ratio of cell surface area to volume as the cell increases in size? Why is this eventually a problem?
3. What is *cell division*?
4. How do *asexual reproduction* and *sexual reproduction* compare?

### Ch 11.2: The Process of Cell Division

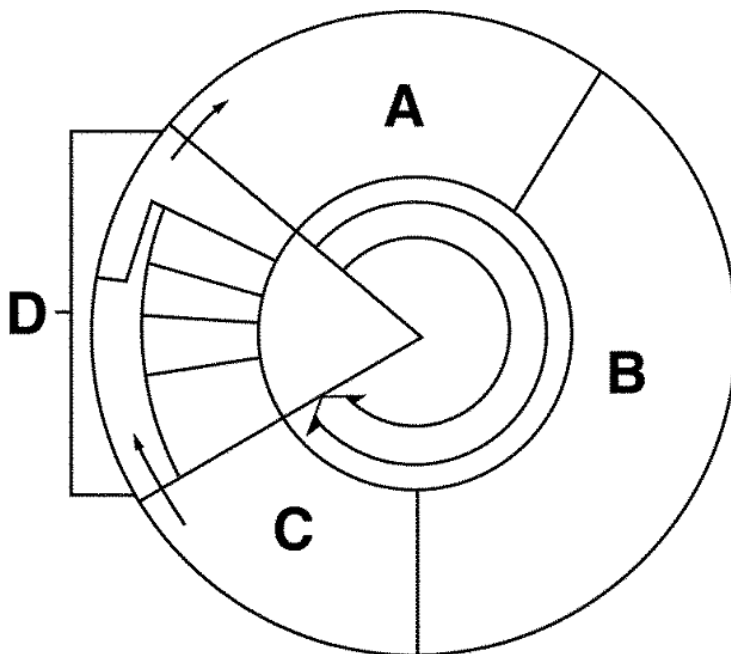
5. What is the name of the structure consisting of genetic information bundled into packages of DNA and proteins?
6. What is *chromatin*?
7. What happens to *chromosomes* during cell division?

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8. What happens during the *cell cycle*?

9. What happens during *interphase*?

10. Label the diagram of the cell cycle below.



11. What is the division of the cell nucleus called?

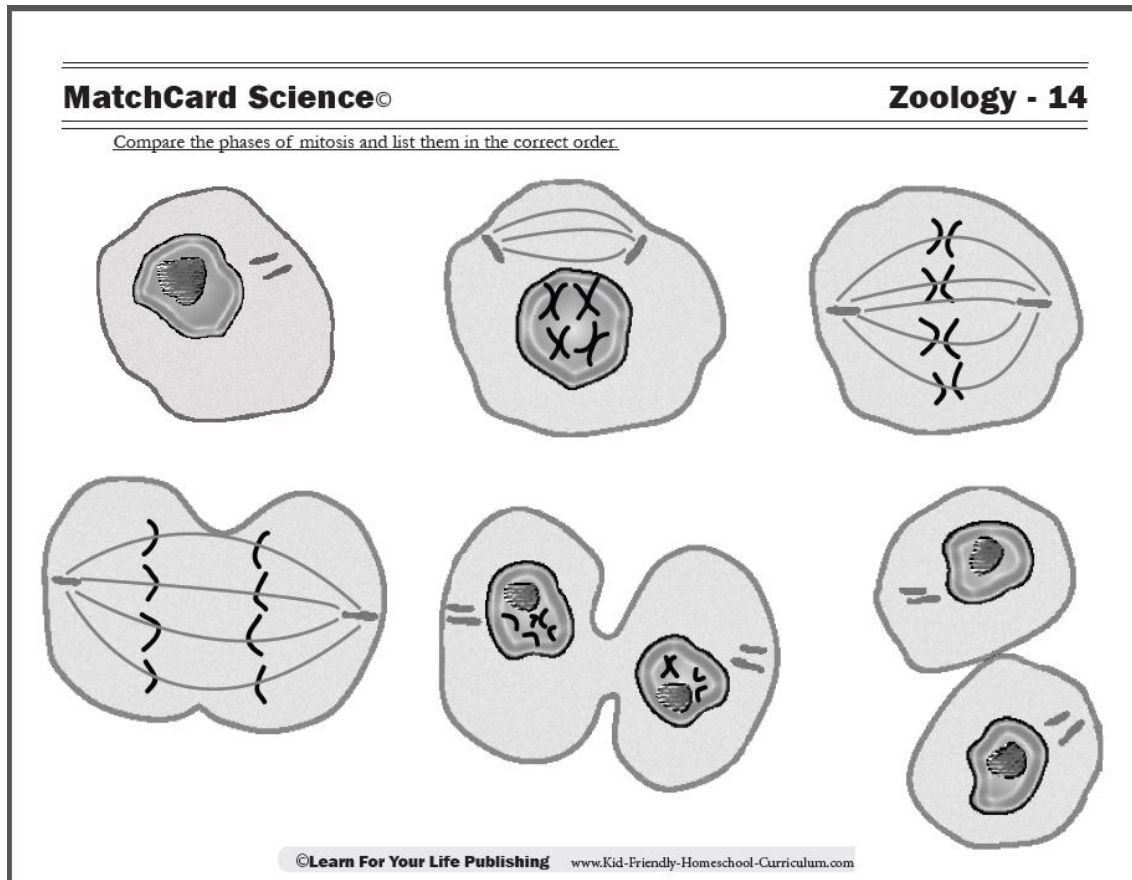
12. How do daughter cells split apart after the process named in question 11 is concluded?

13. How is the process named in question 12 different in plant cells and animal cells?

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14. Label the stages of mitosis below.



### Ch 11.3: Regulating the cell cycle

15. How is the cell cycle regulated?

16. What are *growth factors*? When are they especially important?

17. What is *apoptosis*? What can happen if too much *apoptosis* occurs?

18. How do *cancer* cells differ from other cells?

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19. What is a *tumor*?

20. How can a deeper understanding of the *cell cycle* help to combat *cancer*?

### Ch 11.4: Cell Differentiation

21. What is *differentiation* in cells?

22. Why do biologists say that a zygote is *totipotent*?

23. What are *stem cells*? How are embryonic stem cells different from adult stem cells?

24. Why is human embryonic stem cell research controversial?