

Name \_\_\_\_\_

Period \_\_\_\_\_

Ms. Foglia

Date \_\_\_\_\_

**AP: CHAPTER 16: THE MOLECULAR BASIS OF INHERITANCE**

1. After Morgan and fellow scientists developed the Chromosomal Theory of Inheritance, the search was on for the chemical mechanism of inheritance. What are the two components of the chromosome?

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2. From initial logic, which component would be the most likely candidate for the genetic material and why?

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3. What did Griffith, Avery, and others accomplish with bacteria?

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4. Define transformation. \_\_\_\_\_

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5. What did the experiments done by Alfred Hershey and Martha Chase show?

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6. What are Chargaff's rules?

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7. If a species has 35% adenine in its DNA, determine the percent of the other three bases.

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8. What was the role of Maurice Wilkins and Rosalind Franklin in determining the structure of DNA?

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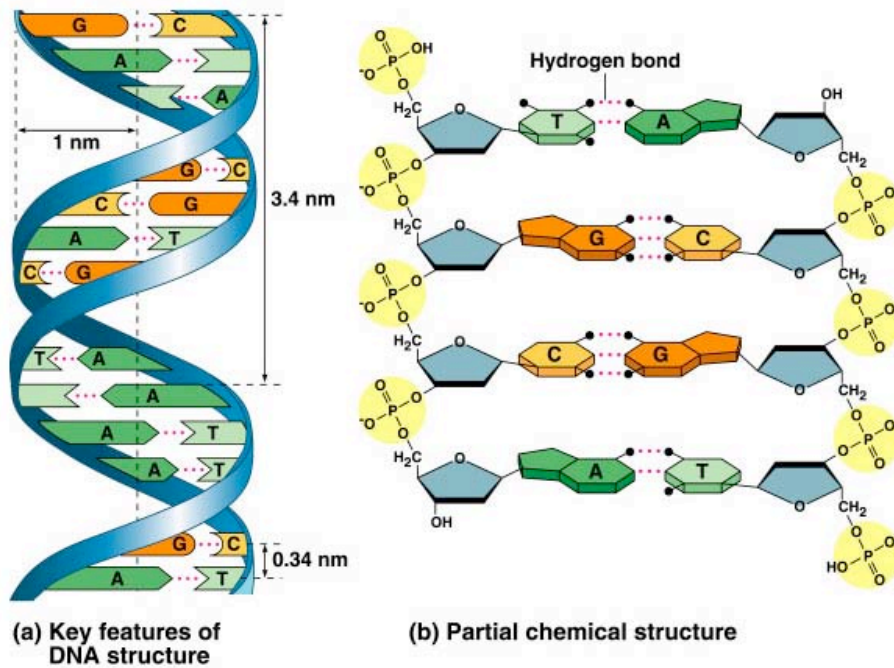


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9. Use the diagram to describe the structure of DNA. Include several comments.



10. What is the advantage of the double stranded aspect of the DNA? \_\_\_\_\_

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11. Which model of DNA replication is accepted? \_\_\_\_\_

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12. What happens at the DNA replication fork?

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13. Make a list of the enzymes involved in replication and their role.

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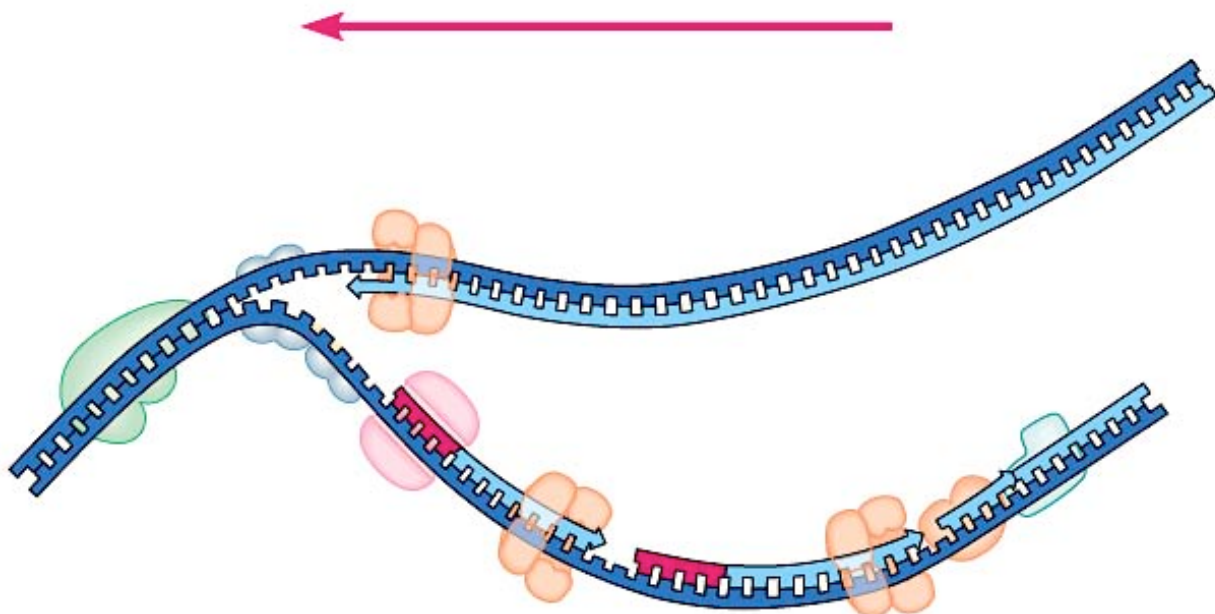
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14. Why does the DNA have to add nucleotides in the 5' to 3' direction?

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15. Label the diagram of DNA replication. Include the directions and the terms.



16. Describe the "priming of the DNA" before replication. \_\_\_\_\_

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17. List some of the steps involved in DNA repair. \_\_\_\_\_

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18. What is the problem that occurs at the ends of the chromosome during replication?

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19. What is a telomere and its role in cell division. \_\_\_\_\_

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20. Why was there no selection pressure for prokaryotes to evolve a telomere-like solution on their chromosome? \_\_\_\_\_

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21. Why is telomerase an active area in cancer research? \_\_\_\_\_

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