

The Molecular Basis of Inheritance
Chapter 16

1. Describe the model of DNA proposed by Watson and Crick. Include a description of what the monomers are and how they are connected together. Describe the antiparallel nature of the two strands.
2. Why do the purine and pyrimidine bases always pair together?
3. If a species has 35% adenine in its DNA, determine the percent of the other three bases.
4. Outline the process of DNA replication. Be sure to include all of the relevant enzymes.
5. Building DNA is an endergonic process. What is the source of energy?
6. DNA replication proceeds along both strands in both directions from the origin. What is the solution to the problem of the antiparallel strands?
7. Why are primers required in DNA replication?
8. How are the spaces between fragments on the lagging strand filled?
9. Explain how errors are corrected during and after DNA replication. Explain the importance of DNA proofreading and repair.
10. What makes complimentary base pairing so useful for DNA replication and detecting errors?
11. What is the problem associated with replicating the ends of chromosomes? How is the problem solved?