

DNA Replication Web Questions

Name: _____

Visit the website <http://www.dnafb.org/> and click the link for MOLECULES OF GENETICS. Follow the link for concept 20: [A half DNA ladder is a template for copying the whole.](#) Follow the link for the animation at the top of the page. Answer the following questions as you navigate through the animation.

1. What did Meselson and Stahl determine about DNA?
2. What is semi-conservative replication?
3. When did Meselson and Stahl perform their DNA replication experiments?
4. Sketch the results of their experiment below.
5. Explain how these results support semi-conservative DNA replication.
6. What three discoveries did Arthur Kornberg make with regards to DNA replication?
7. Describe how Kornberg determined the function of DNA polymerase.

Watch the animations and answer these questions as you go along –
http://highered.mcgraw-hill.com/sites/0072437316/student_view0/chapter14/animations.html#

How Nucleotides are added in DNA replication? (Animation)

1. List the proteins/enzymes involved in the process of replication.
2. How does replication start? Who prevents the unwound DNA from twisting back?
3. Which enzyme is the key player in Replication? What is this enzyme's limitation? How is this limitation overcome?
4. Why do the two strands of the helix have to be elongated by two slightly different mechanisms?
5. Explain the elongation stage of replication – your answer should include a discussion of the leading strand, the lagging strand, Okazaki fragments and RNA primers.

DNA replication fork (Animation)

6. Draw a picture of the replication fork and label all the components therein.
7. How are Okazaki fragments on the lagging strand joined into one continuous strand?
8. How do eukaryotes speed the process of replication – since they have multiple long chromosomes?