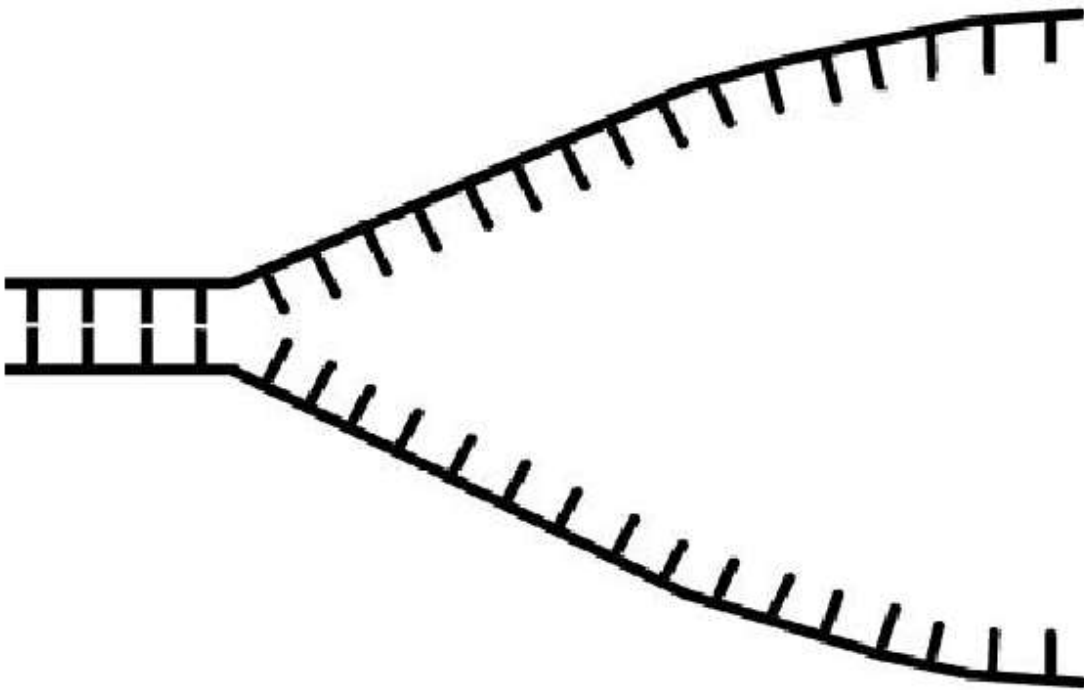


DNA Replication Drawing

Name: _____

Using pencil, you will draw a representation of DNA replication along the leading and lagging strands. Follow the directions below, drawing each element in its proper location along the replicating DNA strand. Once you are sure everything is in the correct place, complete your drawing by adding color to distinguish objects as separate.

1. On the diagram below, label the 5' and 3' ends of both parental DNA strands (you can make up which is which)
2. Label the replication fork
3. Draw and label helicase
4. Label the overall direction of DNA replication
5. Draw and label single stranded binding proteins
6. Draw and label the leading strand
7. Draw and label a single DNA polymerase III on the leading strand
8. Draw and label an RNA primer on the leading strand
9. Draw and label a DNA polymerase I on the leading strand
10. On the lagging strand, draw and label at least three Okazaki fragments
11. On the lagging strand, draw and label at least two DNA polymerase III enzymes
12. On the lagging strand, draw and label at least two RNA primers
13. On the lagging strand, draw and label at least one primase enzyme
14. On the lagging strand, draw and label at least one DNA polymerase I enzyme
15. On the lagging strand, draw and label at least one DNA ligase enzyme



1. What is the role of the Helicase?
2. What is the role of the RNA Primase?
3. Why is primase necessary?
4. What is the role of the DNA Polymerase III?
5. What two limitations does DNA polymerase III have?
6. What is the role of the DNA Polymerase I?
7. What is the role of the Ligase?
8. Is the leading strand being built toward or away from the replication fork?
9. Is the lagging strand being built toward or away from the replication fork?