Replication Drawing Task

You will draw out the steps of the S phase of Interphase (DNA replication). In each box, draw the event(s) described. You will use 4 different colors: 1) for the original strands of DNA, 2) for the leading strand, 3) for the lagging strand, and 4) RNA. You must label all the **bold** words in each drawing, indicate the **5' and 3' ends** and **arrows** to show **direction** enzymes move.

5' 3'				
1. Draw the parent DNA with the sequence 5' ACCGTATTGATC 3' 2. Add its complementary strand. *Draw hydrogen bonds with single line.*	3. **Helicase** unwinds DNA and creates a **replication fork** (bottom of diagram). *Separate the bottom 7 bases only.* 4. **SSBs** block the reannealing of nitrogenous bases	5. **Primase** adds RNA primer (2 bases) at the 5' end of each daughter strand. 6. **DNA polymerase III** adds complementary bases to both strands. *Parent DNA still only open at bottom 7 bases.*	7. Helicase opens the rest of the DNA strand 8. **RNA primase** adds another 2 base RNA primer to the lagging strand & **DNA polymerase III** fishiness adding complementary bases to both strands.	9. RNA primers are replaced with DNA by **DNA polymerase I** 10. **Okazaki fragments** on the lagging strand & are joined by **DNA ligase**.

DNA Strands Colour KEY: ☐ = original (parent). ☐ = leading strand. ☐ = lagging strand. ☐ = RNA