**Replication Worksheet** **Name** _____ .

You will draw out the steps of the S phase of Interphase, DNA replication. In each box, draw the event described. You will use 3 different colors: one for the original strands of DNA, one for the leading strand, and one for the lagging strand. You must label all the bold words in each drawing and indicate the **5' and 3' ends of each strand with direction arrows**. Use the drawing on the back to help you.

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|---|---|---|---|---|
| 1. Draw the DNA double helix, with the sequence on the 5' to 3' strand: ACCGTATTGATC, then write its complementary bases on the other strand. | 2. **Helicase** ( ■ ) begins to unwind the DNA at the **replication fork**. | 3. **DNA polymerase** adds complementary bases in the 5' to 3' direction to form the **leading strand**. | 4. **DNA polymerase** adds complementary bases discontinuously in the 5' to 3' direction to form **Okazaki fragments** on the **lagging strand** & are joined by **DNA ligase**. | 5. Two DNA double helices are formed, showing **semiconservative replication** (show what this means). Be sure to include bases on all strands. |

DNA Strands KEY: ☐ = original. ☐ = leading strand ☐ = lagging strand

**S Phase: Replication Fork**

On the following drawing, label the directions (**5'** and **3'**) on <u>both</u> strands. Also label: **leading strand**, **lagging strand**, **Okazaki fragments**, **replication fork,** and **DNA polymerase**.