DNA Replication Foldable

Materials Preparation:

- Copy ne foldable per student printed/copied 2-sided

Instructions:

- Fold paper in half long ways along the dotted line (hotdog style)
- Label the 3’ and 5’ ends of all of the DNA strands on the image (there are four 3’ ends and four 5’ ends to label)
- Fill in the blanks in the shaded box on the left side of the image.
- Cut along the 7 vertical dashed lines up to the fold in the paper.
- Fill in the blanks on the inside of each tab of the foldable.
- Use the foldable to quiz yourself or others about the components and processes of DNA Replication.

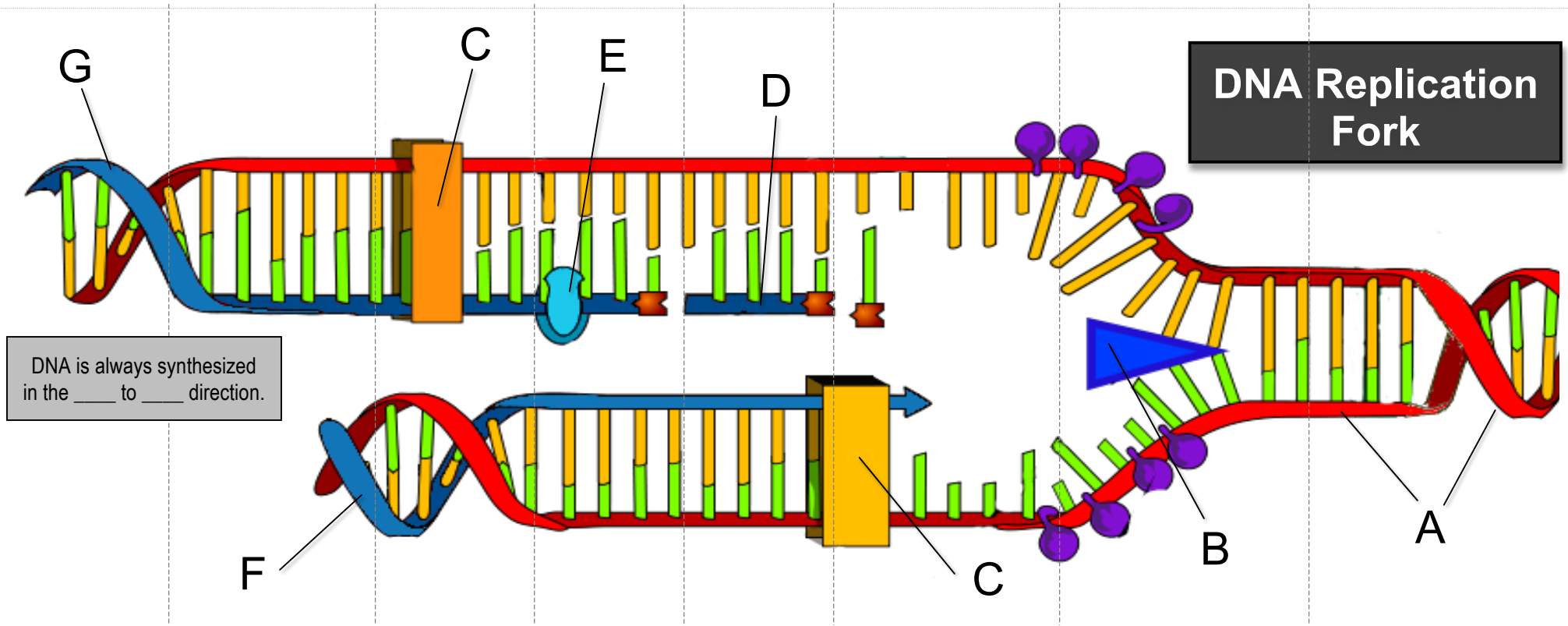
Image Source:

- http://commons.wikimedia.org/wiki/File%3ADNA_replication_en.svg. By LadyofHats Mariana Ruiz [Public domain], via Wikimedia Commons

Parent DNA (Original DNA)	The original DNA helix is called the parent DNA, and the two resulting helices are called "daughter" helices. Each of these two daughter helices is nearly an exact copy of the parent DNA (it is not 100% the same due to mutations). DNA replication creates daughter DNA by using the parent strands of DNA as a template or guide.
DNA Helicase	This enzyme unwinds the DNA double helix at the replication fork.
DNA Polymerase	Builds new DNA by reading the parent DNA template and adding new complementary nucleotides in the 5' to 3' direction to the leading and lagging daughter DNA strands.
Okazaki Fragments	Short, newly synthesized DNA fragments that are formed on the lagging template strand during DNA replication.
DNA Ligase	An enzyme that joins Okazaki Fragments of the lagging strand.
DNA Polymerase	Builds new DNA by adding new nucleotides in the 5' to 3' direction.
Leading Strand (New DNA Strand)	The strand of new DNA which is being synthesized in the same direction as the growing replication fork.
Lagging Template Strand (New DNA Stand)	The strand of new DNA whose direction of synthesis is opposite to the direction of the growing replication fork. Because of this, replication of the lagging strand is more complicated than that of the leading strand.

A. _____ DNA (Original DNA)	The _____ DNA helix is called the parent DNA, and the two resulting helices are called "daughter" helices. Each of these two daughter helices are nearly an exact copy of the _____ DNA (it is not 100% the same due to _____). DNA replication creates daughter DNA by using the parent strands of DNA as a _____ or guide.
B. DNA _____	This enzyme _____ the DNA double helix at the replication fork.
C. DNA _____	Builds new DNA by reading the parent DNA _____ and adding new complementary _____ in the 5' to 3' direction to the leading and lagging daughter DNA strands.
D. Okazaki Fragments	Short, newly synthesized DNA fragments that are formed on the _____ template strand during DNA replication.
E. DNA Ligase	An enzyme that _____ Okazaki Fragments of the lagging strand.
C. DNA _____	Builds new DNA by adding new _____ in the 5' to 3' direction.
F. Leading Strand (New DNA Strand)	The strand of new DNA that is being synthesized in the _____ direction as the growing replication fork.
G. Lagging Template Strand (New DNA Stand)	The direction of synthesis of the new strand of DNA is _____ to the direction of the growing replication fork. Because of this, replication of the lagging strand is more complicated than that of the leading strand.

DNA Replication Fork



DNA is always synthesized in the ____ to ____ direction.