

DNA Replication

What does the term replicate mean?

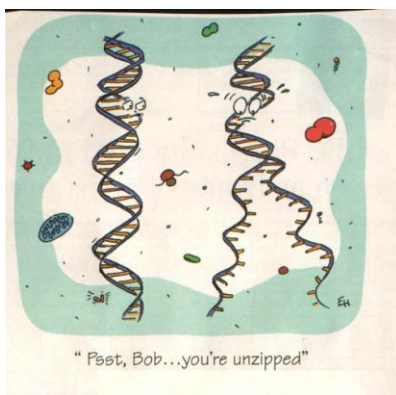
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Why is it necessary for DNA to replicate?

DNA REPLICATES TO PASS ON A COMPLETE SET OF GENETIC MATERIAL TO NEWLY FORMED CELLS DURING REPRODUCTION (SUCH AS MITOSIS- CELL DIVISION)

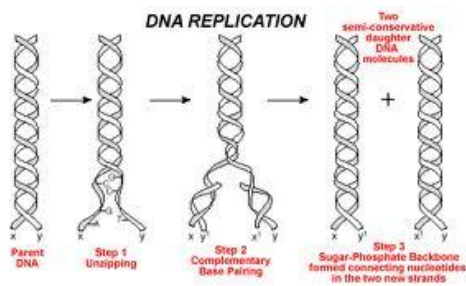
Overview:

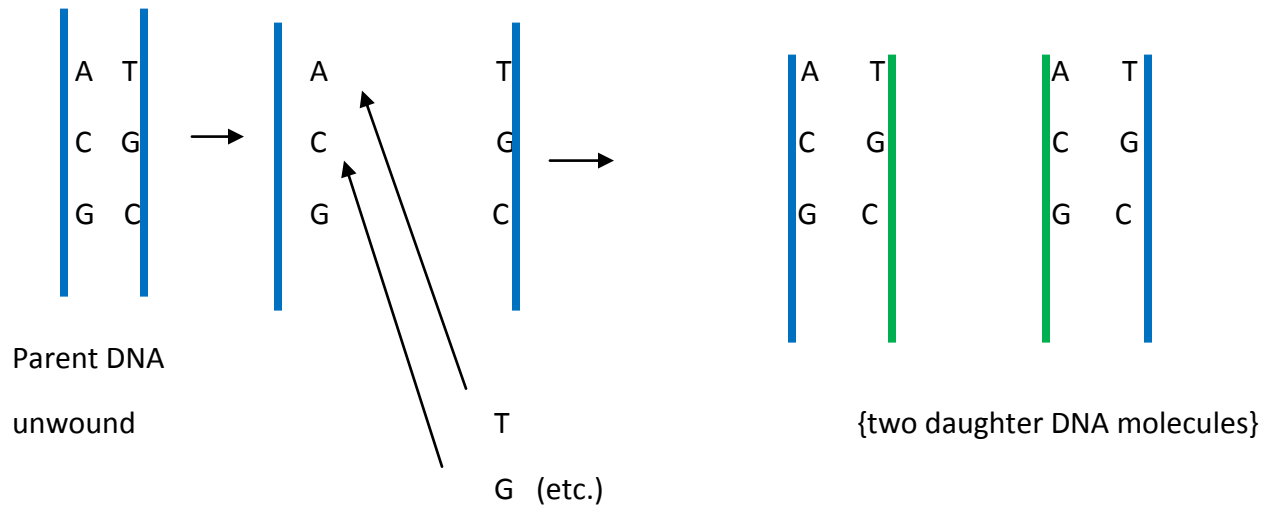
Recall that DNA is a double helix; in order to copy each of the strands, two events must first occur



- unwinding- **UNTWISTS TO FORM STRAIGHT LADDER**
- unzipping- **DOUBLE-STRANDED PARENT DNA SEPARATES INTO TWO SEPARATE STRANDS**

- Once the DNA is separated into the two parent strands, free nucleotides can pair up with complimentary nucleotides to form a second strand along each original parent strand





Questions

1. What two events must occur prior to DNA replication?

DNA MUST UNWIND AND UNZIP PRIOR TO DNA REPLICATION

2. Why are these two steps necessary?

DNA MUST UNWIND AND UNZIP SO THAT THE NITROGEN BASE CODE CAN BE ACCESSED

3. How do the two daughter DNA molecules compare to each other and to the parent?

THE TWO DAUGHTER DNA MOLECULES ARE IDENTICAL TO EACH OTHER AND TO THE PARENT DNA MOLECULE.

4. Why do you think this method of replication is called semi-conservative?

THIS METHOD IS CONSIDERED SEMI-CONSERVATIVE BECAUSE EACH DAUGHTER DNA MOLECULE IS MADE UP OF ONE STRAND FROM THE PARENT DNA MOLECULE AND ONE STRAND THAT IS NEWLY FORMED DURING REPLICATION.