

# 12.2 Replication of DNA

Objective: Describe the process of semi-conservative replication in a DNA molecule

# VOCABULARY:

semiconservative replication

DNA helicase

DNA polymerase

template

DNA ligase

Okazaki fragment

antiparallel

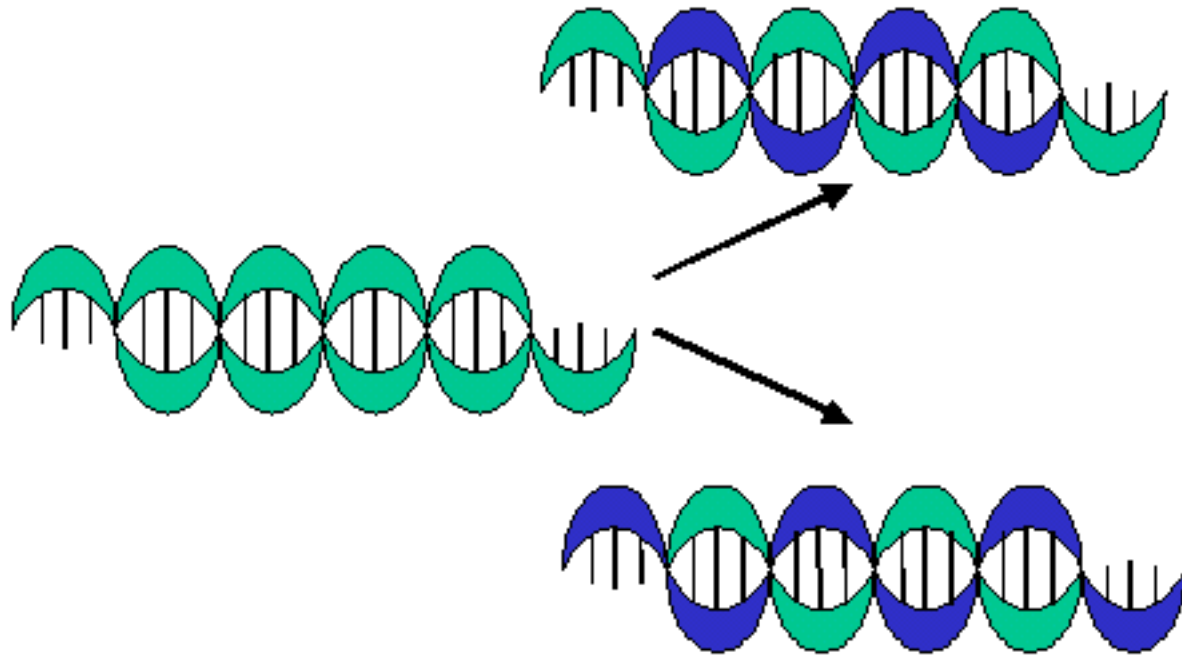
replication fork

5' and 3' ends

leading strand

lagging strand

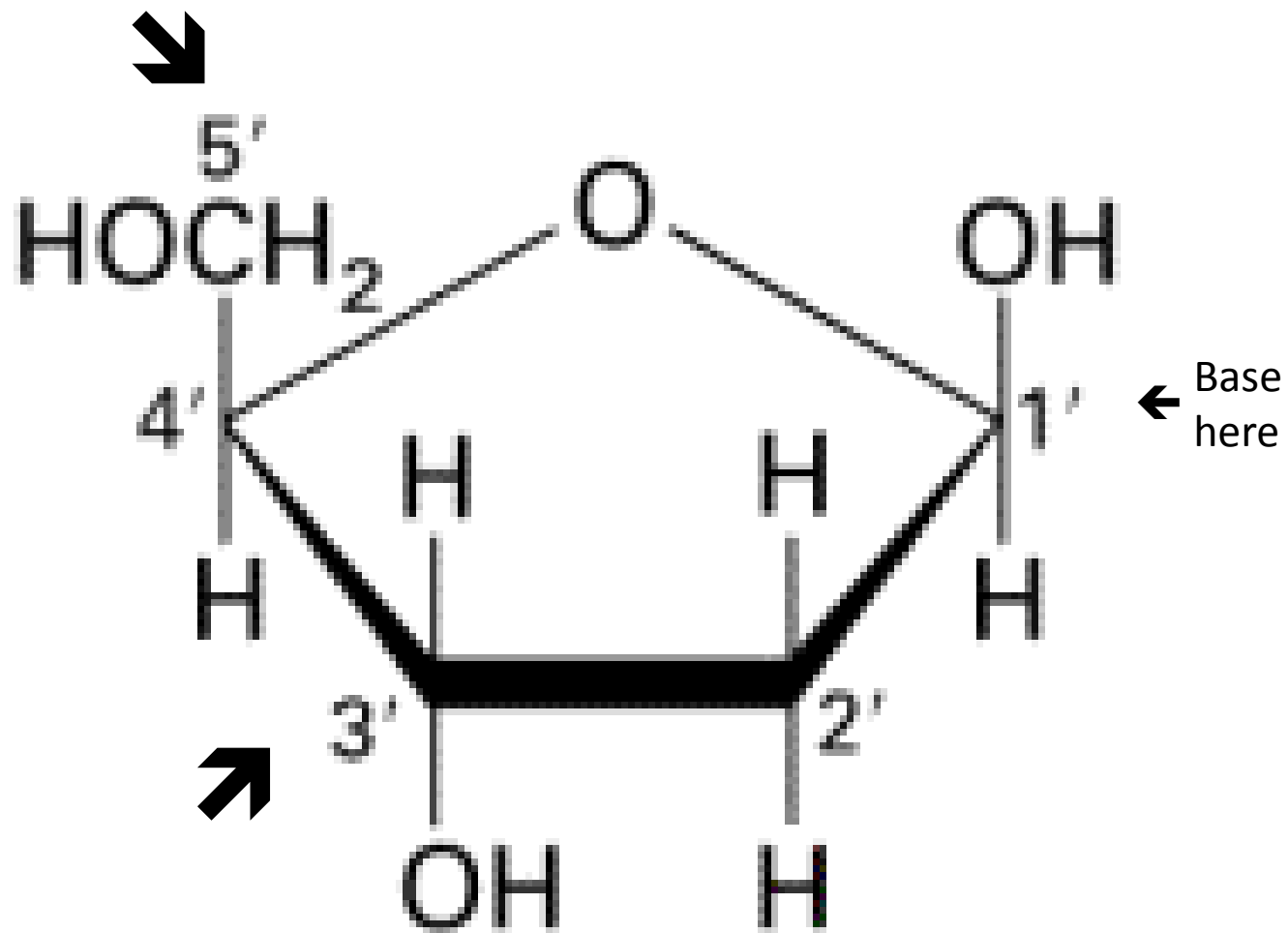
C. So why is it called semiconservative?



Because half of the old DNA is conserved  
as part of the new DNA strand

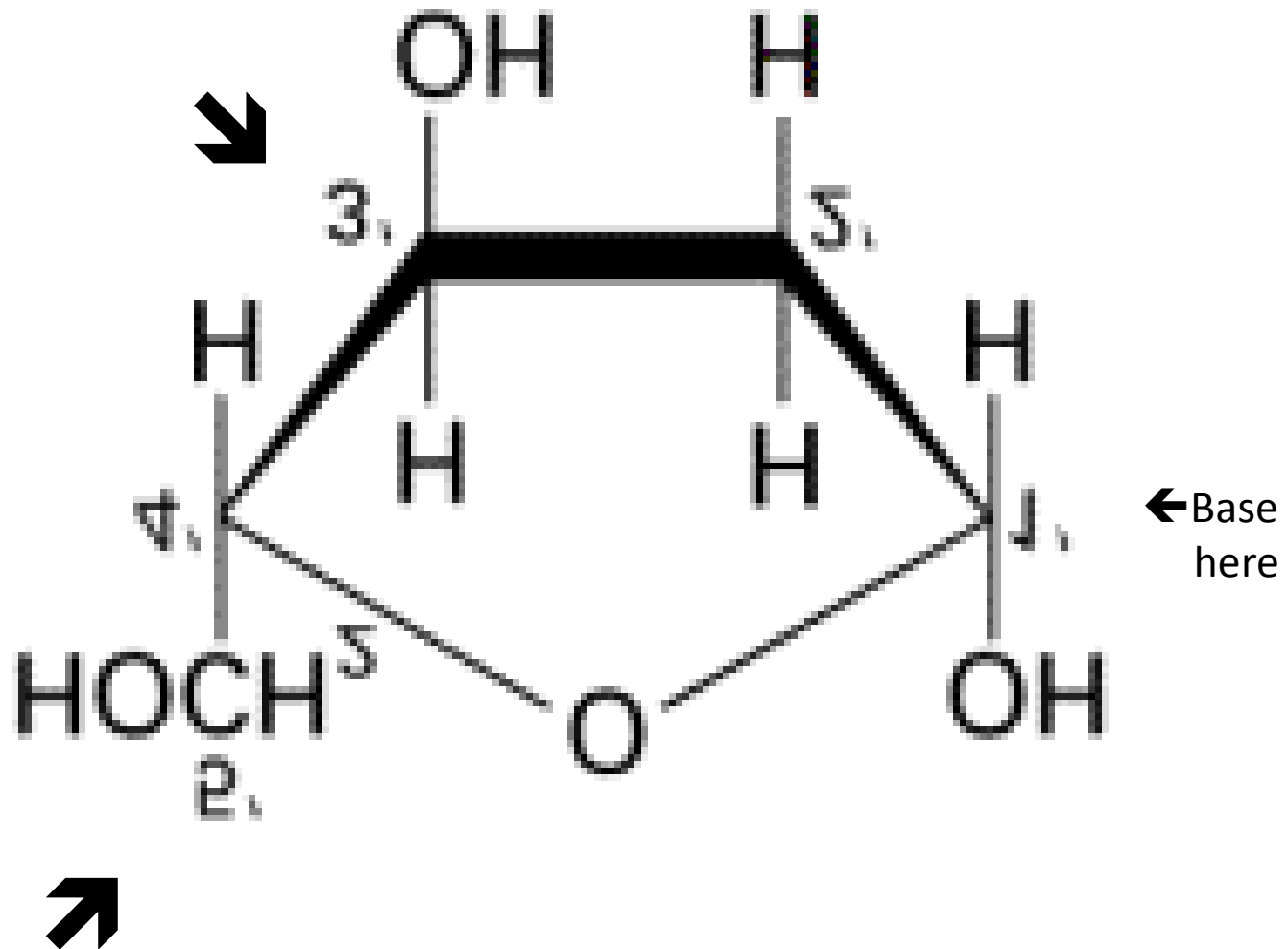
# A. What is antiparallel?

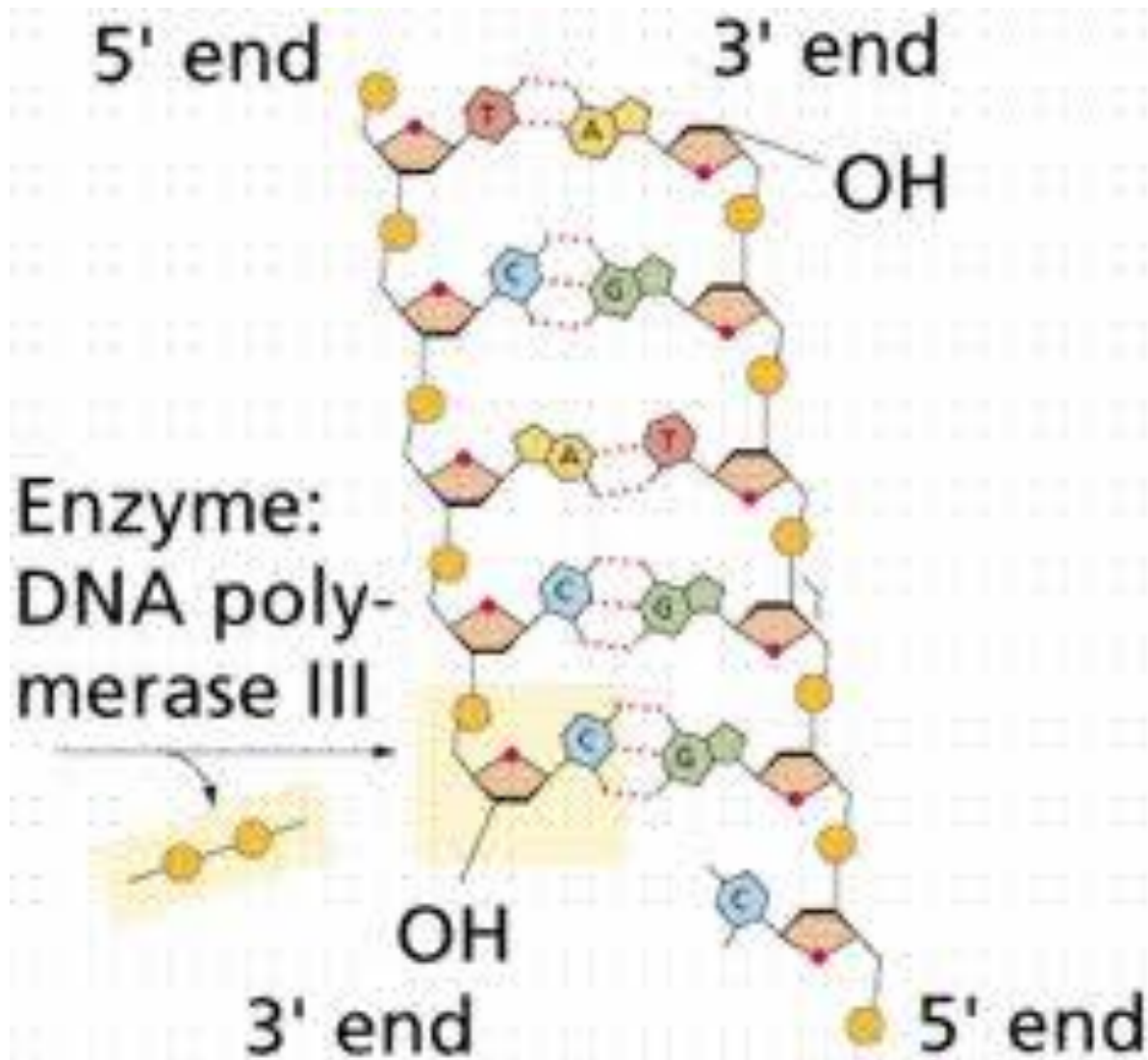
1. "Orientation" paragraph on p.331
2. The 5-C sugar points 5<sup>th</sup> C up or 5<sup>th</sup> C down
3. Each strand runs in the opposite direction



**2-Deoxyribose**

# 5-Deoxyribose

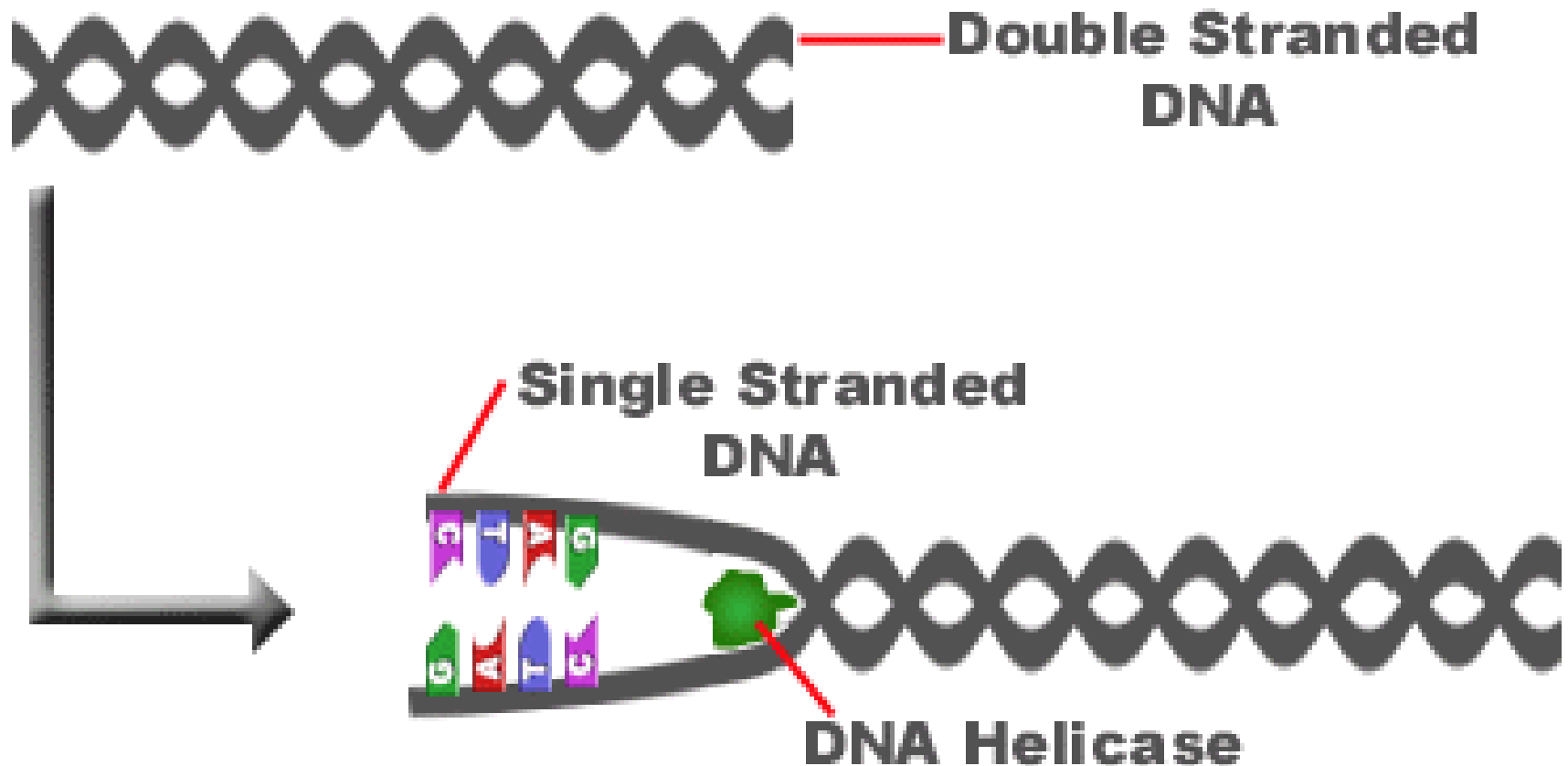




**ANTIPARALLEL**

## B. Enzyme action

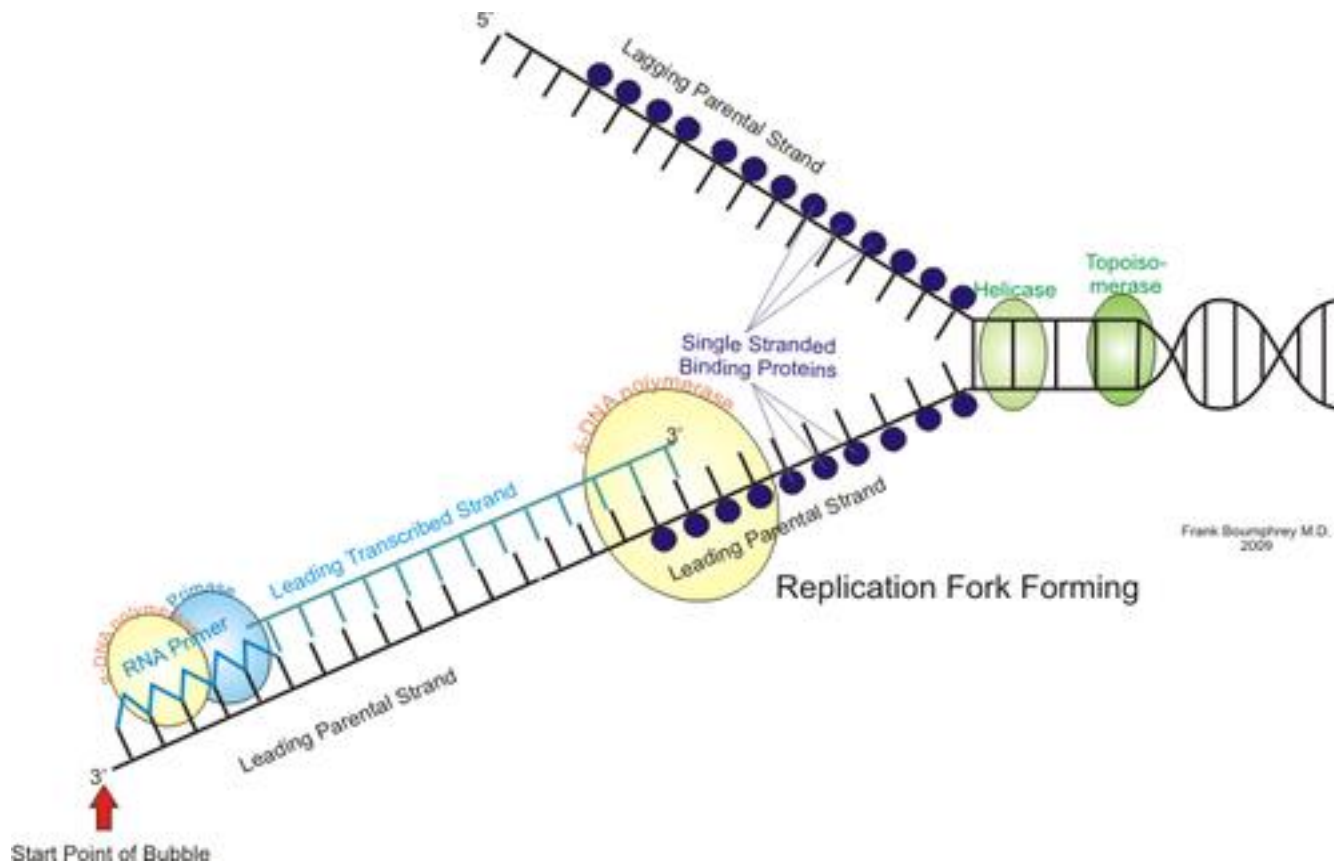
### 1. DNA helicase: unzips the double helix





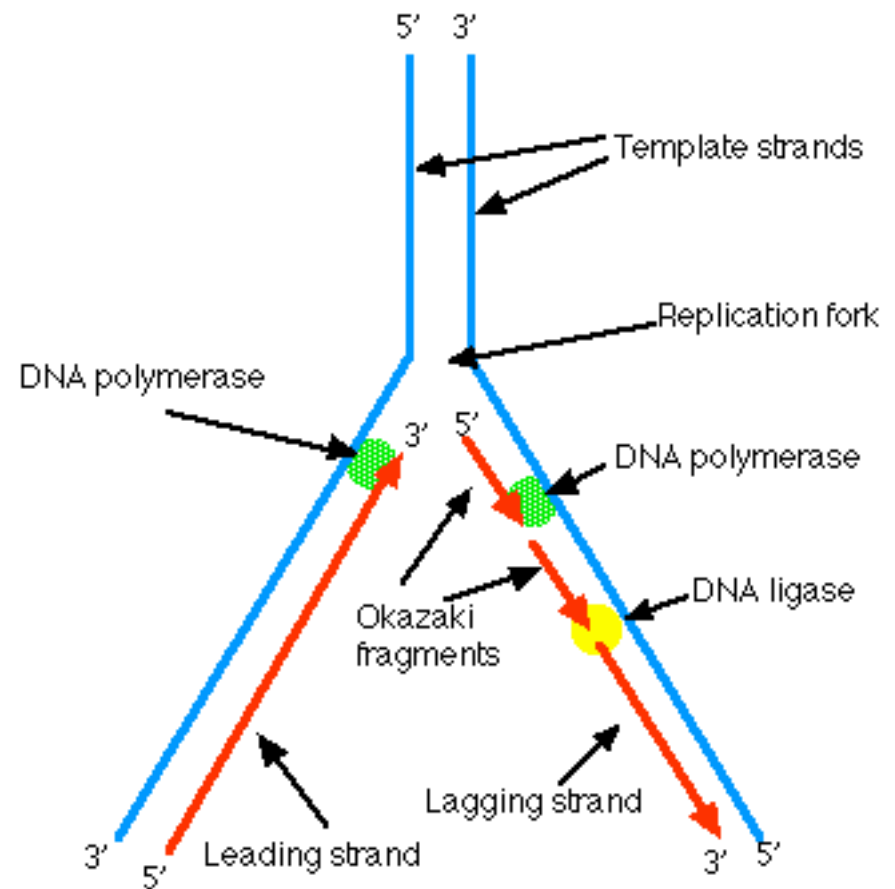
# B. Enzyme action

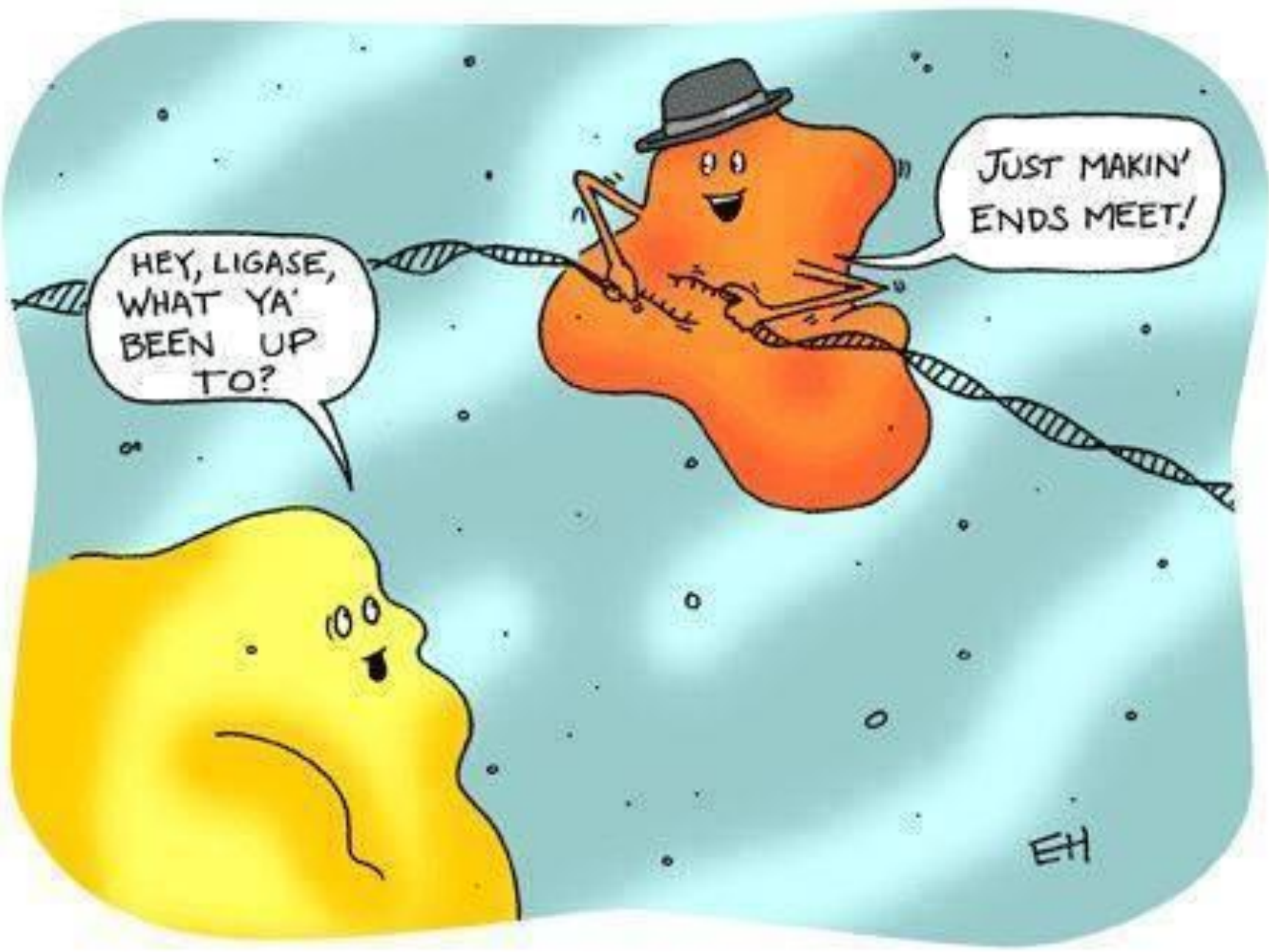
2. DNA polymerase: adds monomers (nucleotides) to make the new strand for the DNA (polymer)



## B. Enzyme action

### 3. DNA ligase: proofreads new strand for mistakes





HEY, LIGASE,  
WHAT YA'  
BEEN UP  
TO?

JUST MAKIN'  
ENDS MEET!

EH

5'...3'...leading...lagging...Okazaki fragments  
...replication fork...template...Oh My!!

