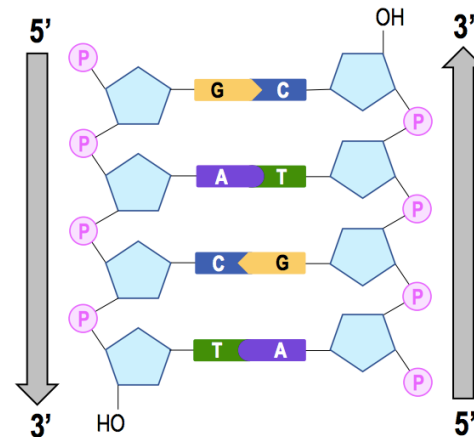
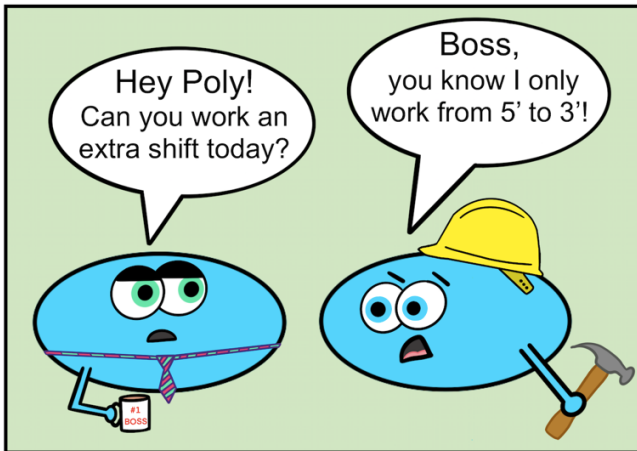


## CONCEPT: DNA POLYMERASES

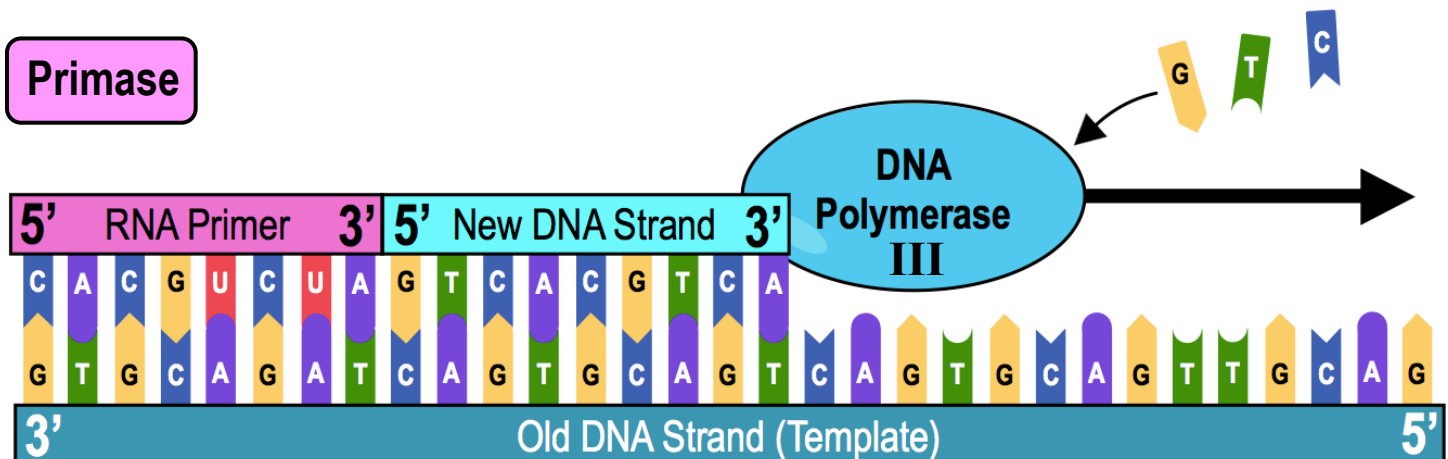
- The primary enzyme responsible for building new DNA strands are \_\_\_\_\_ polymerases.
  - Organisms contain \_\_\_\_\_ types of DNA polymerases with slightly different functions.
  - New DNA strands always built in the \_\_\_\_\_ → \_\_\_\_\_ direction (elongating from its free 3' \_\_\_\_\_ group).



## DNA Polymerase Requirements

- In prokaryotes, **DNA Polymerase** \_\_\_\_\_ is the primary enzyme for elongating/building new DNA Strands.
- All DNA Polymerases have \_\_\_\_\_ central requirements:
  - 1) a \_\_\_\_\_: the \_\_\_\_\_/parent DNA strand that acts as a guide for building new strands.
  - 2) a \_\_\_\_\_: small RNA molecule that acts as the \_\_\_\_\_ point for DNA polymerase.
    - \_\_\_\_\_ enzyme builds RNA primers.
    - Ultimately the RNA primer is *converted to* \_\_\_\_\_ to be part of newly built DNA strand.

## Primase



**PRACTICE:** If the sequence of the 5'-3' strand is AATGCTAC, the complementary sequence has the following sequence:

- a) 3'-AATGCTAC-5'      b) 3'-CATCGTAA-5'      c) 3'-TTACGATG-5'      d) 3'-GTAGCATT-5'