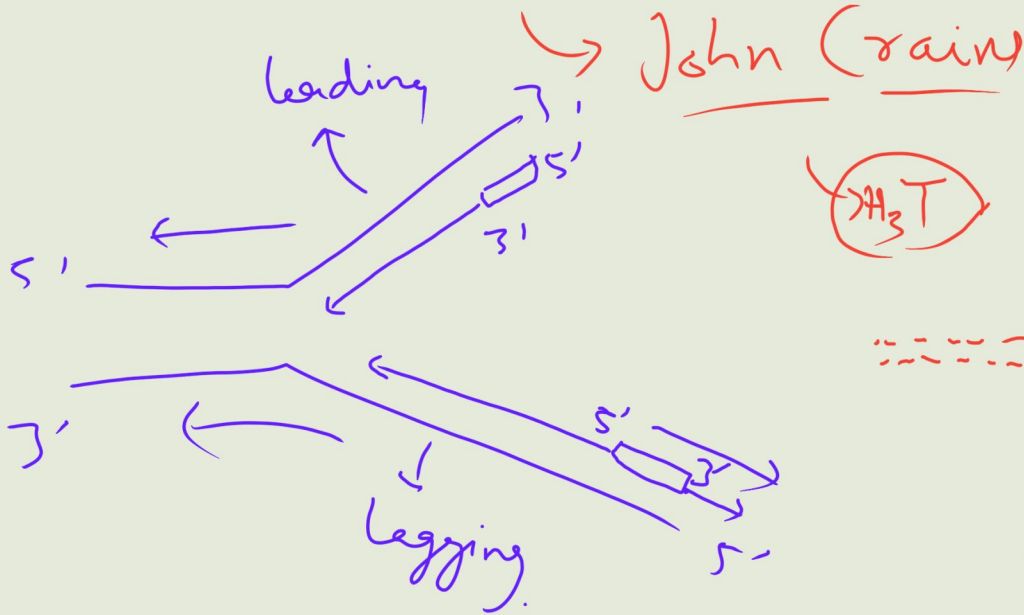


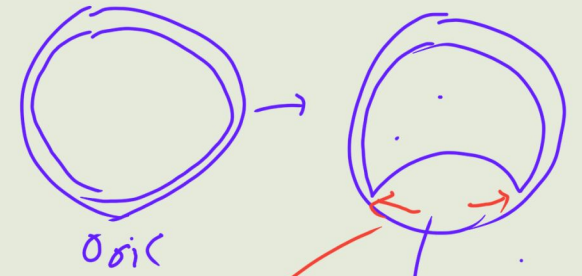
DNA Replication

1) Watson Crick Model

- Replication Semiconservative
- Bi-direction



OH₃T



Bidirectional

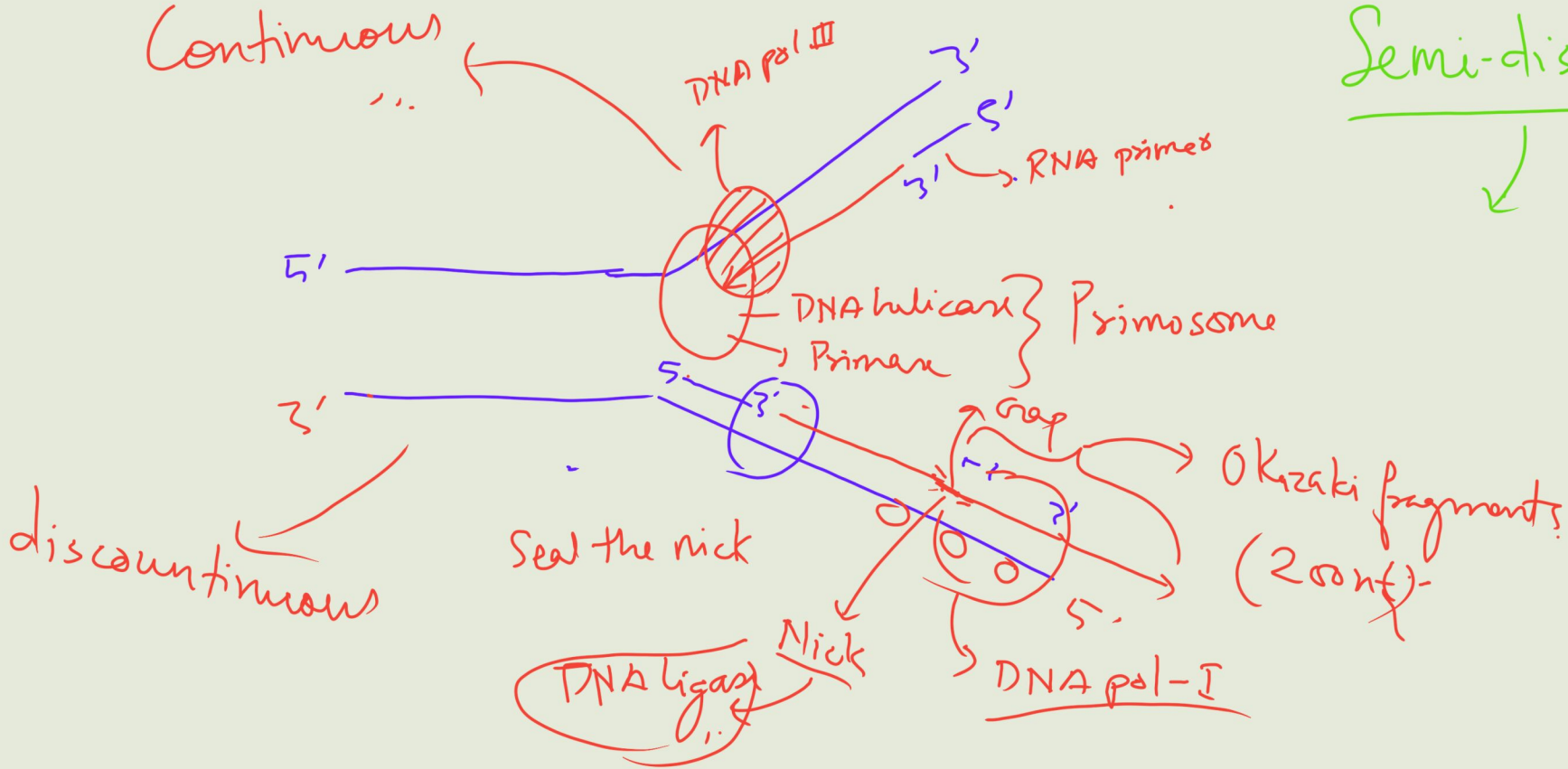
Replication
Bubble
fork

The diagram shows a bidirectional replication bubble. Two replication forks are shown moving away from a central origin, creating a bubble of newly synthesized DNA. The text 'Bidirectional' and 'Replication Bubble fork' is written in red.

Okazaki Fragments

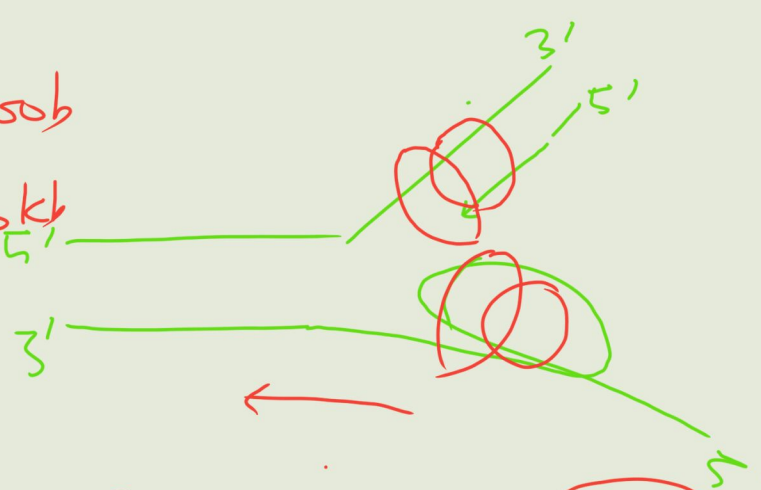
Continuous

Semi-discontinuous



DNA pol-III holoenzyme

b
 kb \rightarrow 1000b
 Mb \rightarrow 1000kb



Catalytic domain $\{ \alpha, \epsilon, \theta \}$
 $\alpha \rightarrow$ Pol γ
 $\epsilon \rightarrow$ 3' \rightarrow 5' exo
 $\theta \rightarrow$ enhance proofreading

τ = dimerization

β = sliding clamp

$\gamma, \delta, \chi, \psi, \delta' \rightarrow \gamma$ complex

Clamp loader

Fidelity
 $\frac{1000}{8} = 200$
 5×10^6 nt