

CONCEPT: TRANSCRIPTION: mRNA SYNTHESIS

- Transcription copies genetic information from a _____ to RNA.

① RNA polymerase _____ to the DNA and _____ the double helix.

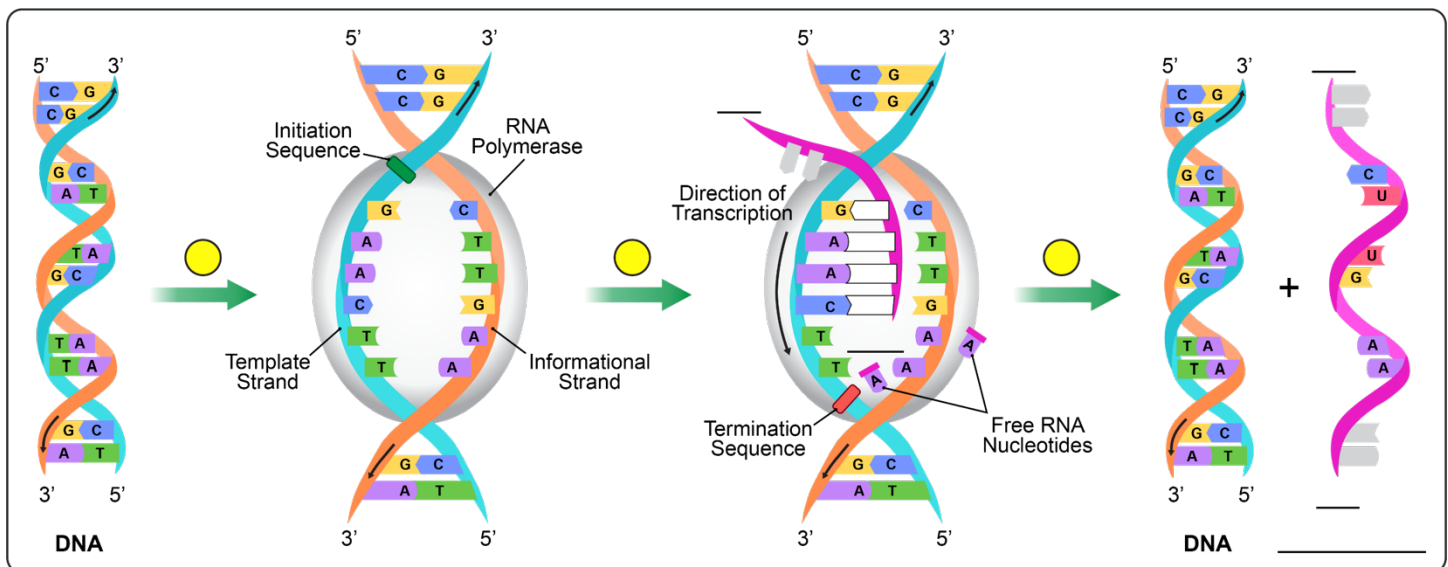
- **Informational strand:** ____ to ____ strand.
- **Template strand:** ____ to ____ strand.

② Pre-mRNA (____ RNA) is synthesized on the _____ strand using complementary bases.

- Transcription starts from the _____ sequence (start).
- Transcribed **pre-mRNA** is a _____ of the **informational strand**, except that ____ replaces ____.

Terminology Tips:

- 1) **Gene:** DNA segment containing code for protein synthesis.
- 2) **Pre-mRNA:** precursor mRNA processed into mature mRNA.



③ Transcription stops when RNA polymerase reaches a _____ sequence (stop).

- **pre-mRNA** is released and DNA _____ into the double helix.

EXAMPLE: Write the sequence of pre-mRNA produced from the following DNA template strand.

5' GCCATGACAGTA 3'

- a) 5' CGGTACTGTCAT 3'
- b) 5' TACTGTCATGGC 3'
- c) 5' CGGUACUGUCAU 3'
- d) 5' UACUGUCAUGGC 3'

PRACTICE: Write the sequence of pre-mRNA produced from the following DNA informational strand.

5' AATCAGTGACGT 3'

- a) 5' UUAGUCACUGUA 3'
- b) 5' AAUCAGUGACGU 3'
- c) 3' UGCAGUGACUAA 5'
- d) 5' AAUCAGTGACGU 3'