Transcription and Translation Explored

Part 1: How Cells Make Proteins
Cells use the information in DNA to make proteins.

- DNA Contains Information to Make Proteins
- Building Proteins: The Big Picture
- Overview: Transcription and Translation
- Transcription: Copying DNA into RNA
- Translation: Assembling Polypeptides
- See Gene Expression In Action
- Check Your Understanding
- Summary of Part 1

Part 2: Transcription and RNA Processing
Cells copy the information in DNA to a molecule of messenger RNA (mRNA) during transcription.

- What Happens During Transcription?
- Transcription Overview
- Coding and Template Strands
- Guide a Cell Through Transcription
- RNA Processing in Eukaryotic Cells
- Introns and Exons
- Alternative Splicing
- Check Your Understanding
- Summary of Part 2

Part 3: Translation
Cells decode the information in mRNA to make a protein during translation.

- Decoding Genetic Information to Make Proteins
- Translation Overview
- How Translation Works
- Guide a Cell to Build a Polypeptide
- Universal Genetic Code: The Codon Table
- Transcribed and Translated Regions
- Gene Expression: An Antibiotic Example
- The Central Dogma of Molecular Biology
- Prokaryotes vs. Eukaryotes
- Check Your Understanding
- Summary of Part 3

Part 4: Mutations
The DNA in a gene can be altered by different kinds of mutations, which have varying effects on the resulting protein.

- Mutations, Disease, and Evolution
- Mutations Can Affect Proteins
- Point Mutations
- Sense vs. Missense Mutations
- Base Insertion Mutations
- Understanding Frameshift Mutations
- Mutations and Evolution
- Check Your Understanding
- Summary of Part 4

Part 5: Quiz Questions
Quiz Questions

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