Unit 4 Puzzle: Nucleic Acid Metabolism and Genetic Information Transfer

Puzzle: The Genetic Detective

You are a genetic detective investigating a mysterious case involving nucleic acids and their metabolism. Solve the clues below to reveal the final answer—a secret phrase related to Unit 4 topics.

Clues

Biosynthesis Mystery

- I am a purine nucleotide, synthesized from IMP, and I pair with cytosine in DNA. Who am I?
  Write the first letter of my name.

Catabolism Riddle

- My excessive accumulation in the blood leads to gout. What am I?
  Write the second letter of my name.

Genome Organization

- The basic repeating unit of chromatin, consisting of DNA wrapped around histone proteins, is called what?
  Write the third letter of this structure.

Structure Challenge

- I am the sugar found in RNA but not in DNA. What is my name?
  Write the first letter of my name.

Replication Code

- The model of DNA replication where each daughter molecule has one old and one new strand is called what?
  Write the first letter of this model.

Transcription Test

- The enzyme responsible for synthesizing RNA from a DNA template is called what?
  Write the first letter of the enzyme's name.

Genetic Code Puzzle

- The three-base sequence on mRNA that codes for an amino acid is called what?
  Write the first letter of this term.

Translation Trick

- The cellular structure where protein synthesis occurs is called what?
  Write the first letter of this structure.

Inhibitor Inquiry

- This antibiotic inhibits bacterial protein synthesis by binding to the 30S ribosomal subunit. What is it?
  Write the first letter of its name.

Instructions

- Write down the answer to each clue.
- Take the specified letter from each answer (as indicated).
- Put the letters together in order to form a secret phrase related to nucleic acid metabolism and genetic information transfer.

Can you decode the secret phrase?

This puzzle covers biosynthesis and catabolism of nucleotides, genetic diseases, genome organization, DNA/RNA structure and function, replication, transcription, translation, the genetic code, and inhibitors.