D1.2 Protein synthesis

What the Cell · DP Biology · note-taking sheet · SL statements D1.2.1–11

Name _____ **Date** _____

How to use this sheet: go through the slides and videos with it, then close them and write from memory. Use your own words and add page numbers from the book (pp. 615–624) where you want more detail.

Guiding questions. How does a cell turn a DNA base sequence into a chain of amino acids? What keeps protein synthesis reliable?

D1.2.1–2 Transcription

List what RNA polymerase does, in order.

Strand	Bases
DNA template	T A C C G A
mRNA	

D1.2.3–4 Stable templates and gene expression

Why must DNA stay unchanged in a neuron? Why is transcription a good point at which to control a gene?

D1.2.5–7 Translation

Molecule	Role in translation
mRNA	
Ribosome	
tRNA	

Define **codon** and **anticodon**.

D1.2.8–9 The genetic code

Feature	What it means, with a reason or example
Triplet	
Degenerate	
Universal	

Use a codon table to deduce the amino acids for: A U G G G C A A A U G A

D1.2.10 Building the polypeptide

Draw a ribosome on mRNA. Show two tRNAs, a growing chain, a peptide bond and the direction of movement.

D1.2.11 Mutations that change protein structure

Trace sickle cell anaemia from a single base to its symptoms.

Before you finish

Tick the ones you can explain without notes. Circle anything to ask about.

☐ RNA polymerase
☐ A pairs with U
☐ Stable templates
☐ Switching genes on and off
☐ Roles in translation
☐ Codon and anticodon
☐ Features of the code
☐ Using a codon table
☐ Elongation
☐ Sickle cell anaemia