D2.2 Gene expression (HL)

What the Cell · DP Biology · note-taking sheet · HL statements D2.2.1–11

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. 670–680) where you want more detail.

Guiding questions. How can a cell change which genes it expresses? How are patterns of gene expression passed on?

D2.2.1–3 Controlling expression

Gene to phenotype in four steps:

Sketch a gene with its promoter and an enhancer. Show how an activator increases transcription.

How does mRNA breakdown control translation?

D2.2.4–6 Epigenesis and tags

	What it is	Same in every cell?
Genome		
Transcriptome		
Proteome		

DNA methylation and histone methylation: where, and what effect?

D2.2.7–11 Inheritance, environment and signals

How are tags passed to daughter cells? Why are most removed in gametes? Ligers and tigons:

Two environmental examples, and what twin studies show:

How lactose switches on genes in *E. coli*; how a hormone switches on genes in a target cell:

Before you finish

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

- ☐ Promoter
- ☐ Enhancer
- ☐ Transcription factor
- ☐ mRNA breakdown
- ☐ Epigenesis
- ☐ Transcriptome
- ☐ Methylation
- ☐ Epigenetic inheritance
- ☐ Air pollution
- ☐ Imprinting
- ☐ Twin studies
- ☐ Lac operon