D1.3 Mutation and gene editing (HL)

What the Cell · DP Biology · note-taking sheet · HL statements D1.3.8–10

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. 643–647) where you want more detail.

Guiding questions. How do mutations in genes arise? What effects do gene mutations have?

D1.3.8 Gene knockout

What is a knockout, and how does it reveal a gene's function? Two examples. Why use model organisms, and what are the limits?

D1.3.9 CRISPR-Cas9

Draw the steps of CRISPR-Cas9 editing. Label the guide RNA and Cas9.

One successful use:

D1.3.10 Conserved sequences

Conserved and highly conserved sequences, with examples. Two hypotheses to explain them.

Before you finish

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

- ☐ Gene knockout
- ☐ Model organisms
- ☐ Knockout libraries
- ☐ Guide RNA
- ☐ Cas9
- ☐ Example of CRISPR use
- ☐ Conserved sequences
- ☐ Two hypotheses

What the Cell. Original material written for this course.