

Genetics and Evolution (KS3)

Section A – Recall (1–2 marks each)

Q1 (1 mark)
What is heredity?

Q2 (1 mark)
What is a gene?

Q3 (1 mark)
What is DNA?

Q4 (1 mark)
What is a chromosome?

Q5 (2 marks)
State TWO parts of the DNA model.

Q6 (2 marks)
State TWO scientists involved in the discovery of DNA structure.

Q7 (2 marks)
Define a species

Q8 (2 marks)
State how chromosomes, genes and DNA are related in heredity, and name one scientist involved in developing the DNA model.

Q9 (2 marks)

State TWO examples of continuous variation.

Q10 (2 marks)

State TWO examples of discontinuous variation.

Q11 (2 marks)

State TWO resources organisms compete for.

Section B – Understanding (2-3 marks each)

Q12 (3 marks)

Explain how genetic information is passed from parents to offspring.

Q13 (3 marks)

Explain the relationship between DNA, genes and chromosomes.

Q14 (2 marks)

Explain the difference between continuous and discontinuous variation.

Q15 (3 marks)

What are gene banks used for?

Q16 (3 marks)

Explain why some organisms are better at competing than others.

Q17 (2 marks)

Explain how environmental change can lead to extinction.

Section C – Application (4 marks each)

Q18 (4 marks)

A student at *Learntit* investigates variation in hand span in a group of Year 9 students. Explain how this investigation could show variation within a species and how data can be represented to show variation clearly.

Q19 (4 marks)

Explain how natural selection can occur in a population.

Q20 (4 marks)

Explain how environmental change can affect a species' survival.

Q21 (4 marks)

Explain why some individuals survive and reproduce more successfully than others.

Section D – Extended Response (6 marks each)

Q22 (6 marks)

Explain inheritance, chromosomes, DNA and genes, including the roles of Watson, Crick, Wilkins and Franklin in developing the DNA model.

Q23 (6 marks)

Explain how natural selection can lead to evolution and possible extinction.

Q24 (6 marks)

Explain why biodiversity is important and how gene banks help preserve hereditary (genetic) material.

Total: ____ / 68

Percentage: ____%