

**Year 12 General Biology**

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| **Task 4: Extended Response – Genetic Variation Part A** | | | **Weighting**  10% |
| Marks Received | Marks Available | Percentage | |
|  | 10 |  | |

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Task 4: Extended Response – Genetic Variation**

**Student Instructions:**

This extended answer is 10 marks and worth 10% of your year grade. You can use notes and the Part B extended response will be completed under test conditions. You will have 50 minutes to complete Part B based on the research you have made in the previous lesson.

**Extended Response Question:**

Genetic variation is a prerequisite for evolution. Mutation is one source of genetic variation and meiosis is another. Genetic diversity in specific species within a population is due to mutation and meiosis. In the answer section below, **identify** and **explain** how meiosis and mutation produce genetic variation, **explaining** how these processes contributed to natural selection and **providing** a detailed example.

**In your notes make sure you include the following topics in your notes:**  
-Process of meiosis (1 mark)

-Labelled diagram of the stages of meiosis (2 marks)

-Homologous chromosomes (1 mark)

-Chromosome crossover (1 mark)

-How mutations occur in genes (1 mark)

-The process of natural selection (1 mark)

-Factors that influence natural selection (1 mark)

-Speciation (1 mark)

-References (1 mark)