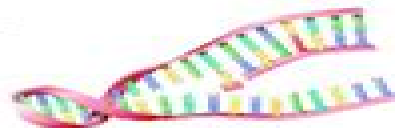


NAME _____

Mutations Worksheet

Deletion, Insertion & Substitution



There are several types of mutations:

- **DELETION** (a base is lost/deleted)
 - Deletion & insertion may cause what's called a **FRAMESHIFT** mutation, meaning the **reading "frame"** changes, thus changing the amino acid sequence from this point forward
- **INSERTION** (an extra base is added/inserted)
 - Deletion & insertion may cause what's called a **FRAMESHIFT** mutation, meaning the **reading "frame"** changes, thus changing the amino acid sequence from this point forward
- **SUBSTITUTION** (one base is substituted for another)
 - If a substitution **changes** the amino acid, it's called a **MISSENSE** mutation
 - If a substitution **does not change** the amino acid, it's called a **SILENT** mutation
 - If a substitution **changes the amino acid to a "stop,"** it's called a **NONSENSE** mutation



Complete the boxes below. Classify each as **Deletion**, **Insertion** or **Substitution** **AND** as either **frameshift**, **missense**, **silent** or **nonsense** (**Hint**: Deletion & Insertion will always be frameshift).

Original DNA Sequence: **T A C A C C T T G G C G A C G A C T ...**

mRNA Sequence: **A U G U G G A A C C G C U G C U G A**

Amino Acid Sequence: **MET - TRP - ASN - ARG - CYS - STOP**

Mutated DNA Sequence #1 **T A C A T C T T G G C G A C G A C T ...**

What's the mRNA sequence? **A U G U A G A A C C G C U G C U G A** (Circle the change)

amino acid sequence? **MET - STOP**

Will there likely be effects? **yes** What type of mutation is this? **point mutation - nonsense**

Mutated DNA Sequence #2 **T A C G A C C T T G G C G A C G A C T ...**

What's the mRNA sequence? **A U G C U G G A A C C G C U G C U G A** (Circle the change)

amino acid sequence? **MET - LEU - GLU - PRO - LEU - LEU**

Will there likely be effects? **yes** What type of mutation is this? **insertion - frameshift**

Mutated DNA Sequence #3 **T A C A C C T T A G C G A C G A C T ...**

What's the mRNA sequence? **A U G U G G A A T C G C U G C U G A** (Circle the change)

amino acid sequence? **MET-TRP-ASN- ARG- CYS - STOP**

Will there likely be effects? **no** What type of mutation is this? **point mutation - silent**

Mutated DNA Sequence #4 **T A C A C C T T G G C G A C T A C T ...**

What's the mRNA sequence? **A U G U G G A A C C G C U G A U G A** (Circle the change)

amino acid sequence? **MET - TRP - ASN - ARG - STOP**

Will there likely be effects? **yes** What type of mutation is this? **point mutation - nonsense**

Genetic Mutation Worksheet Answers

Yijin Wang



Genetic Mutation Worksheet Answers:

The book delves into Genetic Mutation Worksheet Answers. Genetic Mutation Worksheet Answers is an essential topic that must be grasped by everyone, from students and scholars to the general public. The book will furnish comprehensive and in-depth insights into Genetic Mutation Worksheet Answers, encompassing both the fundamentals and more intricate discussions.

1. This book is structured into several chapters, namely:
 - Chapter 1: Introduction to Genetic Mutation Worksheet Answers
 - Chapter 2: Essential Elements of Genetic Mutation Worksheet Answers
 - Chapter 3: Genetic Mutation Worksheet Answers in Everyday Life
 - Chapter 4: Genetic Mutation Worksheet Answers in Specific Contexts
 - Chapter 5: Conclusion
 2. In chapter 1, the author will provide an overview of Genetic Mutation Worksheet Answers. The first chapter will explore what Genetic Mutation Worksheet Answers is, why Genetic Mutation Worksheet Answers is vital, and how to effectively learn about Genetic Mutation Worksheet Answers.
 3. In chapter 2, the author will delve into the foundational concepts of Genetic Mutation Worksheet Answers. The second chapter will elucidate the essential principles that must be understood to grasp Genetic Mutation Worksheet Answers in its entirety.
 4. In chapter 3, the author will examine the practical applications of Genetic Mutation Worksheet Answers in daily life. This chapter will showcase real-world examples of how Genetic Mutation Worksheet Answers can be effectively utilized in everyday scenarios.
 5. In chapter 4, this book will scrutinize the relevance of Genetic Mutation Worksheet Answers in specific contexts. The fourth chapter will explore how Genetic Mutation Worksheet Answers is applied in specialized fields, such as education, business, and technology.
 6. In chapter 5, this book will draw a conclusion about Genetic Mutation Worksheet Answers. The final chapter will summarize the key points that have been discussed throughout the book.
- The book is crafted in an easy-to-understand language and is complemented by engaging illustrations. This book is highly recommended for anyone seeking to gain a comprehensive understanding of Genetic Mutation Worksheet Answers.

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