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### Crash Course Biology #37: Genetic Mutations: Is Drinking Milk a Super Power?

Name: \_\_\_\_\_ Date: \_\_\_\_\_

You can access the video here → <https://youtu.be/BHHzUgumYE?si=PPoYtHbgw1hy8df>

1. Nearly all cells contain an identical copy of an organism's \_\_\_\_\_.
2. The process by which mutations occur in an organism's genetic code is called \_\_\_\_\_.
3. A \_\_\_\_\_ is a chemical or physical factor that can cause changes in DNA, such as UV radiation.
4. A mutation that does not affect the protein being produced is called a \_\_\_\_\_ mutation.
5. A mutation in which one nucleotide is swapped for another is called a \_\_\_\_\_ mutation.
6. A mutation that results in a stop codon forming prematurely is known as a \_\_\_\_\_ mutation.
7. A mutation that occurs in egg or sperm cells and can be passed to offspring is called a \_\_\_\_\_ mutation.
8. A mutation that alters the reading frame of a gene by inserting or deleting nucleotides is known as a \_\_\_\_\_ mutation.
9. The tool used by scientists to edit genes by making precise cuts in DNA is called \_\_\_\_\_.
10. The study of how genes affect the way medicines work in individuals is called \_\_\_\_\_.
11. A condition caused by a single nucleotide substitution in the hemoglobin gene is \_\_\_\_\_.
12. A process by which a virus can be used to introduce healthy copies of genes into cells is called \_\_\_\_\_ therapy.
13. The term used for genetic modifications that enhance an organism's survival, such as lactose tolerance, is \_\_\_\_\_.
14. The immune system used by bacteria to cut viral DNA, which inspired CRISPR technology, is called \_\_\_\_\_.
15. A mutation that occurs after conception and does not get passed to offspring is called a \_\_\_\_\_ mutation.

### Crash Course Biology #37: Genetic Mutations: Is Drinking Milk a Super Power? – KEY

1. Nearly all cells contain an identical copy of an organism's *genetic code*.
2. The process by which mutations occur in an organism's genetic code is called *mutation*.
3. A *mutagen* is a chemical or physical factor that can cause changes in DNA, such as UV radiation.
4. A mutation that does not affect the protein being produced is called a *silent mutation*.
5. A mutation in which one nucleotide is swapped for another is called a *substitution* mutation.
6. A mutation that results in a stop codon forming prematurely is known as a *nonsense* mutation.
7. A mutation that occurs in egg or sperm cells and can be passed to offspring is called a *de novo* mutation.
8. A mutation that alters the reading frame of a gene by inserting or deleting nucleotides is known as a *frameshift* mutation.
9. The tool used by scientists to edit genes by making precise cuts in DNA is called *CRISPR*.
10. The study of how genes affect the way medicines work in individuals is called *pharmacogenomics*.
11. A condition caused by a single nucleotide substitution in the hemoglobin gene is *sickle cell anemia*.
12. A process by which a virus can be used to introduce healthy copies of genes into cells is called *gene* therapy.
13. The term used for genetic modifications that enhance an organism's survival, such as lactose tolerance, is *beneficial mutation*.
14. The immune system used by bacteria to cut viral DNA, which inspired CRISPR technology, is called *CRISPR/Cas*.
15. A mutation that occurs after conception and does not get passed to offspring is called a *somatic* mutation.

15 Questions

Answer Key Included

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