

8th Grade Science Blizzard Bag Day 1
Life Science

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1. *Mitosis is a type of cell division that produces cells that are identical to the parent cell. Meiosis is a different type of cell division that produces cells that carry half the genetic material of the parent cell.*

Based on the information provided, how do the purposes of mitosis and meiosis differ?

Mitosis produces cells used for growth and repair, while meiosis produces cells used for
 A. *reproduction.*

Mitosis is only used by single-celled organisms, while meiosis is only used by multicellular
 B. *organisms.*

Mitosis creates cells used for reproduction, while meiosis produces cells used for growth
 C. *and repair.*

Mitosis is only used by multicellular organisms, while meiosis is only used by single-celled
 D. *organisms.*

2. *Mitosis is a type of cell division that produces cells that are used for growth and repair. Meiosis is a different type of cell division that produces sex cells used for sexual reproduction.*

Based on the information provided, which of the following is a difference between mitosis and meiosis?

Mitosis produces cells that carry half of the genetic material of the parent cell, while
 A. *meiosis produces cells that are identical to the parent cell.*

Mitosis produces cells that carry twice as much genetic material as the parent cell, while
 B. *meiosis produces cells that identical to the parent cell.*

Mitosis produces cells that are identical to the parent cell, while meiosis produces cells
 C. *that carry twice as much genetic material as the parent cell.*

Mitosis produces cells that are identical to the parent cell, while meiosis produces cells
 D. *that carry half of the genetic material of the parent cell.*

3. The process of cell division that creates sex cells in sexually reproducing organisms is called

- A. mitosis.
 - B. translation.
 - C. meiosis.
 - D. replication.
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4. A cell divides to form two cells during a process called

- A. mitosis.
 - B. photosynthesis.
 - C. protein synthesis.
 - D. chemiosmosis.
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5. Which of the following is a characteristic of meiosis but not of mitosis?

- A. involves only one cell division
 - B. produces four daughter cells
 - C. separates one existing cell into two identical new cells
 - D. involves only single-celled organisms
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6. Hunter found some termites in a wooden board sitting in his backyard, so he sprayed some insecticide on the board to kill the termites. Hunter noticed that about 95% of the termites died, but 5% survived. What is the most likely explanation for this?

- A. The living termites were a different species than the dead termites.
The living termites knew that Hunter was going to spray the insecticide, so they
 - B. camouflaged themselves.
 - C. The living termites were males and the dead termites were females.
 - D. The living termites had genes that the dead termites did not have.
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7. *Organisms with advantageous adaptations are more likely to survive and reproduce than organisms without the advantageous adaptations. This phenomena is known as natural selection.*

In order for natural selection to occur

- A.** *one population must become extinct so another can be created.*
 - B.** *organisms within a population must have some genetic variation.*
 - C.** *there must be more male organisms than female organisms.*
 - D.** *all of the organisms within a population must be exactly the same.*
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8. *The climate and features of the Earth are always changing. Some populations have been able to survive by adapting to the changes. Which characteristic of a population is most vital for allowing adaptation?*

- A.** *population size*
 - B.** *immunity to disease*
 - C.** *genetic variation*
 - D.** *energy requirements*
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9. *Biological change over time accounts for the diversity of species. This diversity*

- A.** *develops through gradual processes over many generations.*
- B.** *develops only through sudden change over a single generation.*
- C.** *occurs in the animal kingdom but not in the plant kingdom.*
- D.** *occurs in the plant kingdom but not in the animal kingdom.*

10. *A botanist is studying pea plants. One of the pea plants that she is studying is tall and has yellow flowers.*

If the tall allele is represented by the letter T and the yellow allele is represented by the letter Y, which of the following could be the phenotype of the plant that she is studying?

- A.** *ttyy*
 - B.** *TTYy*
 - C.** *short and green*
 - D.** *tall and yellow*
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11. *A dog with brown fur breeds with a dog with gray fur. When the puppies are born, three of the puppies have brown fur, and one puppy has gray fur.*

Assuming that there are only two alleles that code for fur color, what is the most likely reason for the puppies' fur colors?

- A.** *The allele for brown fur mutated into the allele for gray fur.*
 - B.** *The allele for gray fur mixed with the allele for brown fur.*
 - C.** *The allele for gray fur is dominant, and the allele for brown fur is recessive.*
 - D.** *The allele for gray fur is recessive, and the allele for brown fur is dominant.*
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12. *Organisms typically have more than one form of each gene. If one form can mask the appearance of another form, that form is considered _____ the other form.*

- A.** *recessive to*
 - B.** *dominant over*
 - C.** *worse than*
 - D.** *better than*
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13. *Although the exact number of genes in human DNA is unknown, scientists estimate the number to be around 20,000 to 25,000.*

Which of the following is true about these genes?

- A.** *There is only one variation, or allele, of each gene.*
 - B.** *There are several variations, or alleles, of many genes.*
 - C.** *Each human has the exact same combination of alleles.*
 - D.** *Each human has completely different genes and alleles.*
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14. *Genes code for specific traits in living organisms. Alleles are different versions of a particular gene, and they are responsible for*

- A.** *acquired characteristics, such as scars.*
 - B.** *environmentally induced mutations.*
 - C.** *variations in inherited characteristics.*
 - D.** *changes in weather and climate.*
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