

Assess Your Understanding

The Genetic Code

What Forms the Genetic Code?

- 1a. **IDENTIFY** These letters represent the nitrogen bases on one strand of DNA: GGCTATCCA. What letters would form the other strand of the helix? _____

- b. **EXPLAIN** How can a parent pass a trait such as eye color to its offspring? _____

got it?.....

- I get it! Now I know that the genetic code of nitrogen bases specifies _____

- I need extra help with _____

How Does DNA Copy Itself?

- 2a. **REVIEW** The (nitrogen base pattern/number of genes/size of DNA) determines how DNA is replicated.
- b. **DESCRIBE** Where in the cell does DNA replication take place? _____

- c. **CHALLENGE** What do you think would happen if the DNA code in a daughter cell did not match the code in the parent cell? _____

got it?.....

- I get it! Now I know that DNA replication is the process in which _____

- I need extra help with _____

Lesson Quiz

The Genetic Code

Fill in the blank to complete each statement.

1. The sides of a DNA molecule are made up of sugar molecules alternating with _____ molecules.
2. Chromosomes are made up mostly of _____.
3. In DNA, adenine always pairs with _____.
4. Each _____ on a chromosome contains the information to code for one specific protein.
5. Each group of three DNA bases on a gene codes for a single _____.

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

6. _____ Each gene is located at a specific place on a(n) protein.
7. _____ DNA synthesis is the process by which DNA copies itself.
8. _____ The process of DNA copying itself begins when the two sides of the DNA molecule unwind and separate.
9. _____ The genetic code is determined by the sizes of the nitrogen bases.
10. _____ Nitrogen bases are molecules that contain nitrogen and other elements.


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Assess Your Understanding

How Cells Make Proteins

How Does a Cell Make Proteins?

1a. REVIEW (Messenger RNA/Transfer RNA) carries the genetic information in DNA from the nucleus to the cytoplasm.

b. ANSWER  What does DNA do? _____

got it?

I get it! Now I know that protein synthesis is the process in which _____

I need extra help with _____

Lesson Quiz

How Cells Make Proteins

Fill in the blank to complete each statement.

1. The process of making proteins is called protein _____.
2. Proteins are made of smaller molecules called _____.
3. In RNA, adenine pairs with _____.
4. The sides of RNA and DNA molecules are made up of different _____.
5. The genetic code in DNA is copied and carried to the ribosomes by _____.

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

6. _____ After an amino acid is added to a protein, the transfer RNA picks up another amino acid.
7. _____ RNA is a(n) double strand.
8. _____ Changes to the type or order of amino acids can result in a different protein.
9. _____ Amino acids are carried to a ribosome by messenger RNA.
10. _____ A transfer RNA with the bases CGA will line up with a section of messenger RNA with the bases CGU.

Assess Your Understanding

Mutations

How Can Mutations Affect an Organism?

1a. **EXPLAIN** Mutations that occur in body cells (can/cannot) be passed on to offspring. Mutations that occur in sex cells (can/cannot) be passed on to offspring.

b. **APPLY CONCEPTS** Drug resistance in bacteria is a beneficial mutation for the bacteria, but how can it be harmful for humans? _____

got it?

I get it! Now I know that mutations affect an organism's traits by _____

I need extra help with _____

How Is Cancer Related to Mutations and the Cell Cycle?

1a. **LIST** What are the options for treating cancer? _____

b. **DRAW CONCLUSIONS** Based on the fact that people can get cancer regardless of their genetics, what are some things you can do to lower your risk of getting cancer? _____

got it?

I get it! Now I know that cancer is related to mutations and the cell cycle because _____

I need extra help with _____

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Lesson Quiz

Mutations

Fill in the blank to complete each statement.

1. The use of drugs to treat disease is called _____.
2. A mutation can be passed to offspring only if it takes place in a(n) _____ cell.
3. A mutation is any change in the _____ of a gene or chromosome.
4. Cancer is treated with surgery, _____, and drugs that destroy the cancer cells.
5. A mutation can occur if a base pair is _____, deleted, or substituted for another.

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

6. _____ Mutations are sometimes helpful to the organism.
7. _____ Cancer is a disease in which cells divide slowly.
8. _____ If chromosomes do not separate correctly during the formation of sex cells, the organism that forms can end up with too many or too few chromosomes.
9. _____ Cancer causes the growth of tumors.
10. _____ Scientists think that cancer begins when something damages a cell's proteins.

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