

Cornell Notes Ch 6, L1 pgs 188-193



Key Question 1:



Key Question 2:

What Forms the Genetic Code?

The Structure of DNA

nitrogen bases

Chromosomes, Genes, and DNA

Order of the Bases

How Does DNA Copy Itself?

DNA replication



What Forms the Genetic Code?



How Does DNA Copy Itself?

Summary #1: (3-5 sentences per summary)

Summary #2:

Cornell Notes Ch 6, L1 pgs 188-193



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What Forms the Genetic Code?



How Does DNA Copy Itself?

The order of the nitrogen bases along a gene forms a genetic code that specifies what type of protein will be produced.

a twisted ladder structure: “double helix;” sides are made up of alternating sugar (deoxyribose) molecules with phosphate molecules ; rungs are made of nitrogen bases

molecules that contain nitrogen and other elements; DNA has 4 kinds of bases: adenine (A), thymine (T), guanine (G), cytosine (C) ; known as “bases”

a gene is a section of the DNA molecule that contains the information to code for one specific protein; bases in a gene are in a specific order; each gene is located at a specific place on a chromosome; DNA is in all cells except for red blood cells

nitrogen bases are in an order along a gene and form the genetic code that determines what type of protein will be produced; the order of the three-base code unit determines a specific amino acid and amino acids are put together to form a protein

Because of the way the nitrogen bases pair up, the order of the bases in each new DNA strand exactly matched the order in the original DNA strand

the process in which an identical copy of a DNA strand is formed for a new cell

Summary #1: (3-5 sentences per summary)

Summary #2:

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DNA replication



What Forms the _____ Code?



How Does _____ Copy Itself?

The order of the _____ bases along a gene forms a genetic code that specifies what type of _____ will be produced.

a twisted ladder structure: “_____ helix;” sides are made up of alternating sugar (deoxyribose) molecules with phosphate molecules ; _____ are made of nitrogen bases

molecules that contain _____ and other elements; DNA has _____ kinds of bases: adenine (A), thymine (T), guanine (G), cytosine (C) ; known as “bases”

a _____ is a section of the DNA molecule that contains the information to code for one specific _____ ; _____ in a gene are in a specific order; each gene is located at a specific place on a _____ ; DNA is in all cells except for red blood cells

nitrogen bases are in an _____ along a gene and form the genetic code that determines what type of _____ will be produced; the order of the three-base code unit determines a specific _____ and amino acids are put together to form a protein

Because of the way the nitrogen bases pair up, the _____ of the bases in each new DNA strand exactly matched the order in the original DNA strand

the process in which an _____ copy of a DNA strand is formed for a new cell

Summary #1: (3-5 sentences per summary)

Summary #2:

Cornell Notes Ch 6 , Lesson 1 (pgs 188-193) Summaries

Key question #1: What Forms the Genetic Code?

Summary:

_____ is twisted ladder known as a “double helix” where the sides are made up of alternating sugar and phosphate molecules. The rungs are made of nitrogen _____ and the order of three of these bases codes for a specific amino acid. The three-base code unit determines the order in which amino acids are put together to form a _____.

Word bank:

- protein
- DNA
- bases

Key question #2: How Does DNA Copy Itself?

Summary:

_____ unzips, between the nitrogen bases. Nitrogen _____ in the cell nucleus pair up with the bases on the DNA halves. Two new _____ DNA molecules are formed.

Word bank:

- bases
- identical
- DNA

Cornell Notes Ch 6, L3 pgs 198-203 **Mutations**



Key Question 1:



How Can Mutations Affect an Organism?



Key Question 2:



How is Cancer Related to Mutations and the Cell Cycle?

How Can Mutations Affect an Organism?

mutation-

Types of Mutations

- 1.
- 2.
- 3.

Effects of Mutations

- 1.
- 2.
- 3.

How Is Cancer Related to Mutations and the Cell Cycle?

What is Cancer?

cancer-

3 Steps of Cancer

- 1.
- 2.
- 3.

tumor-

How Cancer Is Treated

chemotherapy-

Summary #1: (3-5 sentences per summary)

Summary #2:

Cornell Notes Ch 6, L3 pgs 198-203 **Mutations**



Key Question 1:



How Can Mutations Affect an Organism?



Key Question 2:

How Can Mutations Affect an Organism?



How is Cancer Related to Mutations and the Cell Cycle?

Mutations can cause a cell to produce an incorrect protein during protein synthesis. As a result, the organism's trait may be different from what it normally would be.

mutation-

any change in the DNA of a gene or chromosome

Types of Mutations

1. addition- 1 base pair is added to the DNA; 2. substitution- 1 base pair is switched; 3. deletion- 1 base pair is removed

Effects of Mutations

1. harmful- reduces an organism's chances to survive and reproduce
2. helpful- increases an organism's ability to survive and reproduce
3. neither harmful nor helpful- no effect on organism

How Is Cancer Related to Mutations and the Cell Cycle?

Cancer begins when mutations disrupt the normal cell cycle, causing cells to divide in an uncontrolled way.

What is Cancer?

Cells divide in an uncontrolled way, there are more than 100 types and can occur almost anywhere in the body; different factors work together to determine if a person gets cancer

cancer-

a disease in which cells grow and divide uncontrollably, damaging the parts of the body around them

3 Steps of Cancer

1. something damages a portion of DNA causing abnormal cell function & uncontrolled growth ; 2. abnormal cells divide & grow to form a tumor; 3. some cells break off tumor and enter blood stream

tumor-

a mass of abnormal cells that develops when cells divide & grow uncontrollably

How Cancer Is Treated

1. surgery- remove tumor; 2. radiation- beams of high-energy waves; 3. drugs- chemotherapy; used to kill cancer cells or slow growth

chemotherapy-

use of drugs to treat a disease

Summary #1: (3-5 sentences per summary)

Summary #2:

Cornell Notes Ch 6, L3 pgs 198-203 **Mutations**



Key Question 1:



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How Can Mutations Affect an Organism?

mutation-

Types of Mutations

Effects of Mutations

How Is Cancer Related to Mutations and the Cell Cycle?

What is Cancer?

cancer-

3 Steps of Cancer

tumor-

How Cancer Is Treated

chemotherapy-



How Can _____ Affect an Organism?



How is _____ Related to Mutations and the Cell Cycle?

_____ can cause a cell to produce an incorrect protein during protein synthesis. As a result, the organism's trait may be different from what it normally would be.

any _____ in the DNA of a gene or chromosome

1. addition- 1 base pair is _____ to the DNA; 2. substitution- 1 base pair is _____; 3. deletion- 1 base pair is _____

1. _____ - reduces an organism's chances to survive and reproduce
2. _____ - increases an organism's ability to survive and reproduce
3. neither harmful nor helpful- _____ effect on organism

Cancer begins when mutations disrupt the normal cell cycle, causing cells to _____ in an uncontrolled way.

Cells divide in an _____ way, there are more than 100 types and can occur almost anywhere in the body; different factors work together to determine if a person gets cancer

a disease in which _____ grow and divide uncontrollably, damaging the parts of the body around them

1. something damages a portion of _____ causing abnormal cell function & uncontrolled growth ; 2. abnormal cells divide & grow to form a _____; 3. some cells break off tumor and enter blood stream

a _____ of abnormal cells that develops when cells divide & grow uncontrollably

1. _____ - remove tumor; 2. radiation- _____ of high-energy waves; 3. drugs- _____; used to kill cancer cells or slow growth

use of _____ to treat a disease

Summary #1: (3-5 sentences per summary)

Summary #2:

Cornell Notes Ch 6 , Lesson 3 (pgs 198-203) Summaries

Key question #1: How Can Mutations Affect an Organism?

Summary:

Any change in the DNA of a gene or chromosome is a _____. A mutation may be an _____ base pair, substituted _____ pair or a deleted base _____. The _____ of a mutation may be helpful, harmful or neither helpful nor harmful.

Word bank:

- base
- mutation
- pair
- added
- effect

Key question #2: How Is Cancer Related to Mutations and the Cell Cycle?

Summary:

Cancer begins when something damages a portion of the _____ in a chromosome. The damage causes a _____ and the cells function abnormally. This is when mutations disrupt the normal _____ cycle. This causes cells to _____ in an uncontrolled way.

Word bank:

- cell
- mutation
- DNA
- divide