

Biology Chapter 12-1 and 12-2  
DNA and Replication, Pgs. 286-299

Objectives: Students will

- A) Identify DNA and its functions.
- B) List three characteristics of DNA.
- C) Identify the three parts of a DNA nucleotide
- D) Describe DNA's overall structure
- E) Use Chargaff's rule to identify base pairs.
- F) Summarize DNA replication

A) Identify DNA and its functions.

What does DNA stand for?

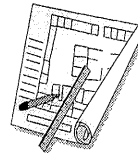
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

What are its functions?

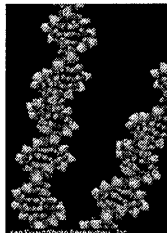
- ⊙ \_\_\_\_\_
- ⊙ **Chemical** \_\_\_\_\_
- ⊙ **for every** \_\_\_\_\_
- ⊙ **"** \_\_\_\_\_ **"**
- \_\_\_\_\_



Obj. B) List three characteristics of DNA.

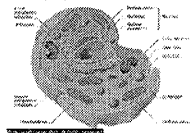
**What is DNA?**

- 1. \_\_\_\_\_
- molecule**
- made of** \_\_\_\_\_
- 2. \_\_\_\_\_



**Where is it located?**

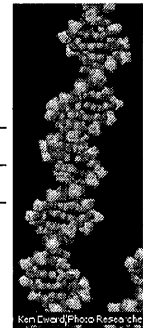
- 1. \_\_\_\_\_
- 2. \_\_\_\_\_



Obj. C) Identify the three parts of a DNA nucleotide

**DNA is a nucleic acid. What are the building blocks of nucleic acids?**

- 1. \_\_\_\_\_
- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_:
- \_\_\_\_\_
- \_\_\_\_\_



Obj. C) Identify the three parts of a DNA nucleotide

Given the following combinations, identify those that represent a nucleotide found in DNA.

- A) Phosphate, Adenine, Deoxyribose
- B) Deoxyribose, Phosphate, Thymine
- C) Phosphate, Ribose, Thymine
- D) Phosphate, Deoxyribose, Guanine
- E) Phosphate, Deoxyribose, and Uracil

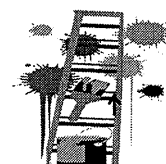
Obj. D) Describe DNA's overall structure

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_ =

Obj. E) Use Chargaff's rule of base pairing to identify the complementary base in each pair.

**Model**

Sides: Rotate



Rungs: Attached to sugar

E) Use Chargaff's rule to identify base pairs.

Identify the complementary base for each of the following:

**GCAT**

- ⦿ 1. Thymine
- ⦿ 2. Cytosine
- ⦿ 3. Guanine
- ⦿ 4. Adenine
- ⦿ 5. Cytosine
- ⦿ 6. Guanine
- ⦿ 7. Thymine
- ⦿ 8. Adenine

## Obj. F) Summarize DNA replication

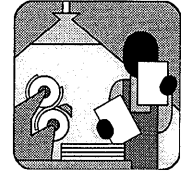
What does it mean to replicate something?

⦿ Chromosomes

⦿ When? \_\_\_\_\_

⦿ What stage?

⦿ \_\_\_\_\_

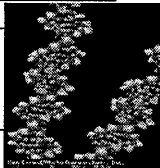


## Obj. F) Summarize DNA replication

Steps for DNA Replication:

1. **DNA** \_\_\_\_\_
2. **Enzymes** \_\_\_\_\_ **DNA**
3. **Enzyme** – \_\_\_\_\_  
creates corresponding \_\_\_\_\_

1. **DNA** \_\_\_\_\_
2. **2 strands twist into** \_\_\_\_\_
3. **Result** – \_\_\_\_\_



Answer the following questions while watching the Prentice Hall video:

- ⦿ 1. What two pieces of a nucleotide alternate as the backbone of DNA?
- ⦿ 2. Of what are the DNA rungs comprised?
- ⦿ 3. What is produced from replication?

Understanding Check – Complete the following questions for your link word.

1. What is the name of the process where DNA copies itself?
2. Name the three parts of a DNA nucleotide.
3. Identify the complementary base for each of the following:

Guanine	
Thymine	
Adenine	
Cytosine	

4. According to Watson and Crick, what is DNA's shape?