WLHS / Biology/Oppelt Name_____Date_____Per_____

READING GUIDE -Structure of DNA 12.1 and 12.2 (pages 338-348)

A. Section 12.1 Identifying the Substance of Genetics (page 338)

1. Fill in the following chart for the important scientists

Scientist	Briefly describe experiment	Important Contribution
Griffith		
Avery		
Hershey-Chase		
Rosalind Franklin **Found in Section 12.2**		
Watson and Crick **Found in Section 12.2**		

2. Define **TRANSFORMATION**: _____

_____

3. Define **BACTERIOPHAGE**: _____

The Role of DNA (page 342)

4. What are the 3 functions of DNA?
   a. _____
   b. _____
   c. _____

B. Section 12.2The Structure of DNA (page 344)

1. DNA is made up of monomers called _____, and each monomer is made up of 3 parts (list them):

2. What are the 4 nitrogen bases in DNA?

a. _____ c. _____

b. _____ d. _____

Analyzing Data: Base Percentages

In 1949, Erwin Chargaff discovered that the relative amounts of A and T, and of C and G are almost always equal. The table shows a portion of the data that Chargaff collected.

Percentages of Bases in Five Organisms				
Source of DNA	**A**	**T**	**G**	**C**
Streptococcus	29.8	31.6	20.5	18.0
Yeast	31.3	32.9	18.7	17.1
Herring	27.8	27.5	22.2	22.6
Human	30.9	29.4	19.9	19.8
E. coli	24.7	23.6	26.0	25.7

1. Which organism has the high percentage of adenine? _____

2. If a species has 35% adenine in its DNA, what is the percentage of the other 3 bases?

3. What id the fact that A and T, and G and C, occurred in equal amounts suggest about the relationship among these bases?

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3. What are the base pairing rules (or Chargaff's Rule)?

4. How does the double helix explain Chargaff's Rule?

5. What does "antiparallel" mean?

6. What is the complimentary **DNA** strand?

A	**T**	**T**	**C**	**T**	**C**	**G**	**A**	**G**	**T**	**C**	**A**	**T**	**A**	**A**

7. What is the complimentary **DNA** strand?

A	**T**	**G**	**G**	**C**	**A**	**T**	**C**	**A**