Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_

Assigned: Wednesday, February 10 Due: Monday, February 21

**DNA, RNA and Cell Cycle Study Guide**

1. Diagram and describe the form of DNA as chromatin, chromosome and chromatids
2. Identify this structure and the name the shape.

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1. How does DNA store genetic information?
2. Identify the base pairing rules of DNA.
3. Complete the complementary strand of DNA

A T T T G G C A T

1. What are the two steps of DNA replication?

1.

2.

1. Why is DNA replication necessary?
2. Identify the three scientists discussed in class and their contributions to the discovery of the structure of DNA.

1.

2.

3.

1. DNA is essential to living organisms because it carries the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Diagram and label the shape of the DNA structure.
3. Describe the molecular structure that makeup a strand of DNA.
4. What are chromosomes?
5. What are genes?
6. What are alleles?
7. Explain the relationship among chromosomes, genes and alleles.
8. How is the information stored in DNA used by the cell?
9. What Nitrogen base is found in RNA and not in DNA?
10. For the DNA strand below, write the complementary base pairing sequence of RNA.

A G C T T A C C A G

1. What is the cell cycle?
2. What is the purpose of the cell cycle?
3. Draw a pie chart showing the amount of time an average cell spends in each stage of the cell cycle.
4. Diagram the cell cycle in the correct order. Be sure to label each stage in the cell cycle and each phase of mitosis.
5. Explain what is occurring in each phase of the cell cycle. Be sure to use the correct term for the form of DNA.
	1. Interphase
	2. Prophase
	3. Metaphase
	4. Anaphase
	5. Telophase
	6. Cytokinesis
6. What happens to the cell after cytokinesis?
7. What role does mitosis play in the cell cycle?