

Directions: Analyze Figure 1 to complete the questions.

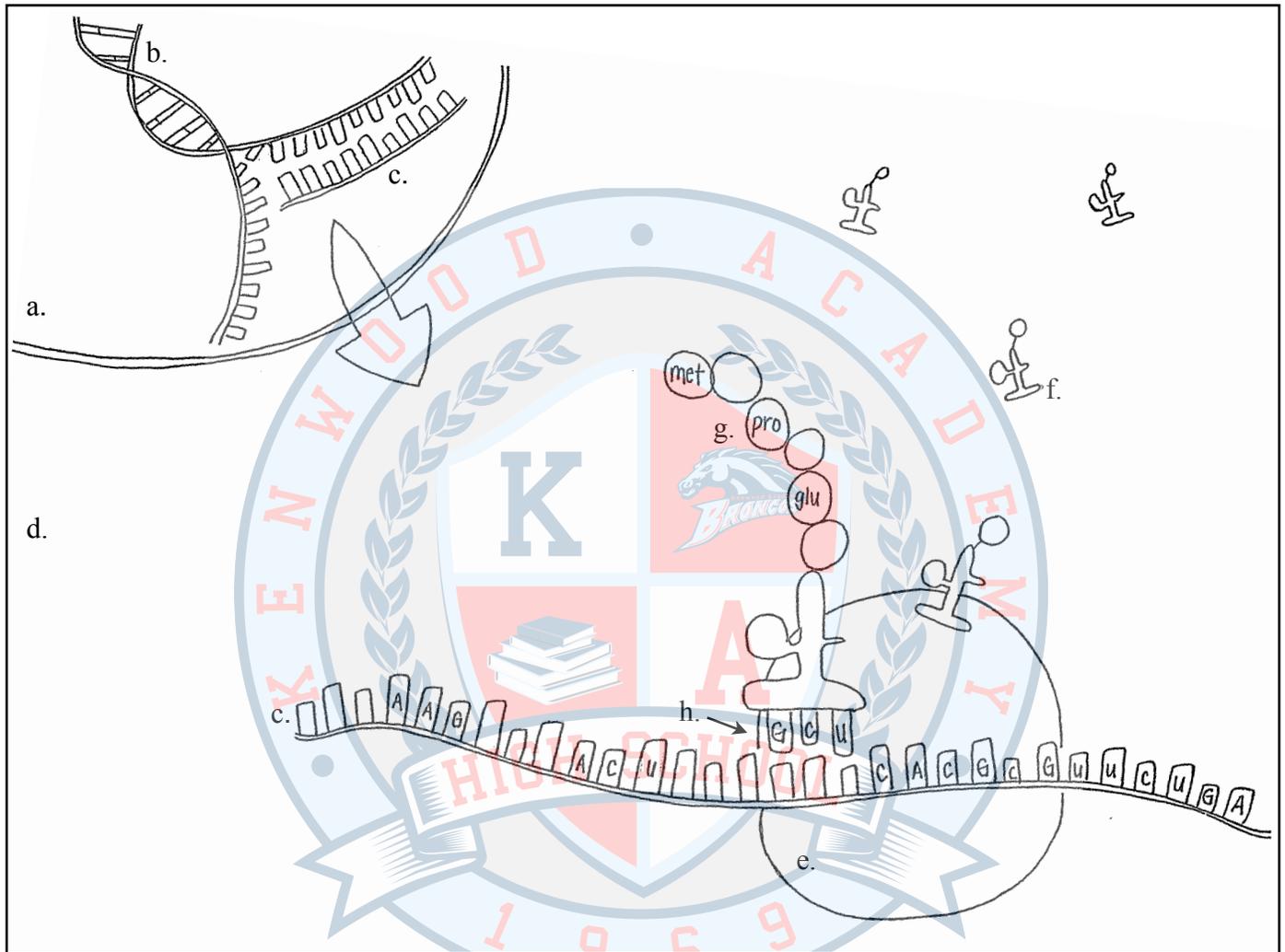


Figure 1

1. The structure labeled a. is the location in which DNA is stored in a cell. What is the name of this structure? Name and describe the process that is occurring inside of this structure.

2. When the structure labeled c. leaves a., it enters d. and attaches to e. At this point, c. is divided into groups of three nucleotides and a new process begins. What are these groups of three nucleotides called? Name and describe the process that is occurring.

Name: _____ Date: _____ Period: _____

3. The structure labeled f. is called transfer RNA, or tRNA. These structures carry anti-codons, labeled h. Based on the Figure, what does the anti codon do?

4. The structure labeled g. is a chain of amino acids that will eventually make a protein. How many amino acids are currently on the chain?

5. Color and identify the structures:

- | | |
|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> a. _____ | <input type="checkbox"/> e. _____ |
| <input type="checkbox"/> b. _____ | <input type="checkbox"/> f. _____ |
| <input type="checkbox"/> c. _____ | <input type="checkbox"/> g. _____ |
| <input type="checkbox"/> d. _____ | <input type="checkbox"/> h. _____ |

6. Complete the mRNA sequence and amino acid chain.

- a. What is the entire mRNA sequence? _____
- b. What is the entire amino acid chain? _____

7. How many nucleotides are in the mRNA strand? _____

8. How many codons are in the mRNA strand? _____

9. Codon 2 is A A G. What amino acid does this code for? _____

a. A substitution mutation changes the codon to A A A. What amino acid does this code for?

b. A substitution mutation changes the codon to A A C. What amino acid does this code for?

c. Explain why some mutations do not change the amino acid, but other mutations do.

10. Codon 9 is U U C. If a deletion mutation occurred in which the second U was removed, what will happen to the remaining mRNA sequence.
