

1

DNA is the Code of Life. DNA provides the instructions for life, but how are those instructions actually read? DNA has to be interpreted and changed into molecules with biological activity called proteins. Molecular Biology states that this DNA interpretation follows this pattern: DNA mRNA amino acids proteins. The process of converting DNA into mRNA is called transcription, and the process of converting mRNA into amino acids is called translation. Finally, amino acids link together to form proteins and these proteins do everything from attack foreign invaders and build fingernails & muscles to help us see and digest our food! Remember, although DNA provides the instructions, it’s the proteins that get things done!

Objective: Break the code to solve the message that is carried in this strand of DNA.

- 1) Color the 4 nitrogen bases as follows:
Adenine (A)-yellow **Cytosine (C)**-blue
Thymine (T)-green **Guanine (G)**-purple
- 2) Use the “Decoder Sheet” provided by your teacher to solve the puzzle.

CODE

TTA ACG AAT GTC CCT TTC AAG AGT TTA TTC
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TTG AGT TCA GGC CCG TTG TTC
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AAG AAT TCA TCA CCG TTC TTA CCG ACG
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GTC CCT TTC ACG GAC AAG GGC TTC GAC GAT
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2

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□□□ □□□ □□□ □□□ □□□ □□□ □□□ □□□ □□□

GTC CCT TTC ATC TTC GAT GAT AAT CCA TTC
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TCA ACG AAT GTC TCA AAT ACG GAT
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GGC AAT GTC TTC GAT CCG GTC
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3

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CODE

TTA ACG AAT CCG GAT GTC CCT TTC

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TCA CCG TTA TTA GGC TTC AGT TTG

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GGC CCG TTG TTC; GGT ACG AGT CCC CCG GTC

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TTG AGT TCA GAT GAC AAG AAG TTC GAT GAT

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Questions

1. What message did you uncover in your DNA puzzle? _____

2. The process of making a copy of DNA to transfer the message out of the nucleus to be used for making proteins is called _____. (*transcription or translation*)

3. Which RNA carries the message? _____

4. The process of reading the RNA and using it to put together the amino acid chain is called _____ . (*transcription or translation*)



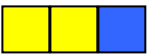






















5. Which RNA carries the amino acid? _____

6. In the activity, coloring the DNA code represents _____. (*transcription or translation*)

7. In the activity, using the colored boxes to read the message represents _____ . (*transcription or translation*)

8. What would happen if you colored any of the boxes incorrectly? _____

Decoder Sheet

A		N	
B		O	
C		P	
D		Q	
E		R	
F		S	
G		T	
H		U	
I		V	
J		W	
K		X	
L		Y	
M		Z	