

Breaking the Code

Name _____

Per. _____

Date _____

I. Replication

*For each of the three DNA sequences below, write the sequence of the complimentary strand of DNA that results after replication.

(1) DNA molecule #1 TAC CGG ATG CCA GAT CAA ATC
Complementary DNA #1 _____

(2) DNA molecule #2 TAC GGG GGC GTA ACC ACA ACT
Complementary DNA #2 _____

(3) DNA molecule #3 TAC CTG TTA AGC TAC AAA ATT
Complementary DNA #3 _____

II. Transcription

*For each of the same DNA sequences below, write the sequence of messenger RNA codons that is synthesized during transcription. Be sure to separate the codons into triplets.

(4) DNA molecule #1 TAC CGG ATG CCA GAT CAA ATC
mRNA #1 _____

(5) DNA molecule #2 TAC GGG GGC GTA ACC ACA ACT
mRNA #2 _____

(6) DNA molecule #3 TAC CTG TTA AGC TAC AAA ATT
mRNA #3 _____

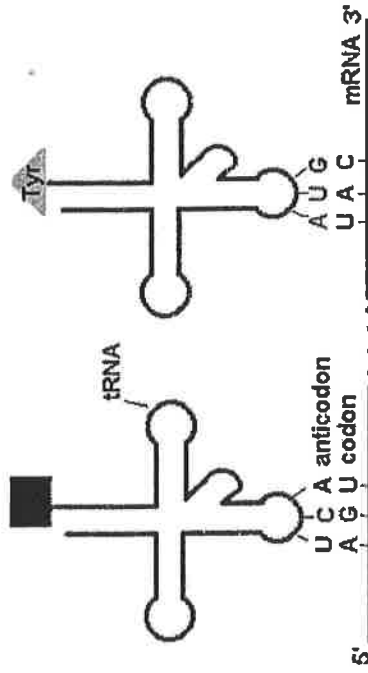
III. Translation

*For each of the mRNA codon sequences you have written, determine the sequence on tRNA anticodon that match it.

Anticodons #1: _____

Anticodons #2: _____

Anticodons #3: _____



2nd base in codon

	U	C	A	G	
U	Phe Phe Leu Leu	Ser Ser Ser Ser	Tyr Tyr STOP STOP	Cys Cys STOP Trp	U C A G
C	Leu Leu Leu Leu	Pro Pro Pro Pro	His His Gln Gln	Arg Arg Arg Arg	U C A G
A	Ile Ile Ile	Thr Thr Thr	Asn Asn Lys	Ser Ser Arg	U C A G
G	Val Val Val	Ala Ala Ala	Asp Asp Glu	Gly Gly Gly	U C A G

1st base in codon

3rd base in codon

The Genetic Code

* Using the chart above, write the amino acid coded for by each mRNA. (Note: The code is based on mRNA codons, not tRNA anticodons)

Polypeptide #1 _____

Polypeptide #2 _____

Polypeptide #3 _____