

NAME: \_\_\_\_\_

**Decoding DNA**

Use your knowledge of transcription and translation to decode this secret message!

STEP 1: "Build" a mRNA molecule that is complimentary to the DNA molecule, base pair by base pair. (REMEMBER: in RNA, adenine pairs with uracil)

STEP 2: Determine the tRNA codons that would compliment with the mRNA strand.

STEP 3: Use the Codon Chart below to find the amino acid that each tRNA codon codes for. Write the one letter symbols to discover the secret message.

DNA    A G A   A C A   T A G   C T C   T T A   A C G   C T T

mRNA   U C U   U G U   A U C   G A G   \_\_\_\_\_

tRNA    A G A   A C A   U A G   \_\_\_\_\_

A.A.    Ser   Cys   \_\_\_\_\_

Secret Message: S \_\_\_\_\_

**CODON CHART**

tRNA	sym	AA
AAA	F	Phe
AAC	L	Leu
AAG	F	Phe
AAU	L	Leu
ACA	C	Cys
ACC	W	Trp
ACG	C	Cys
ACU	-	spc
AGA	S	Ser
AGC	S	Ser
AGG	S	Ser
AGU	S	Ser
AUA	Y	Tyr
AUC	-	spc
AUG	Y	Tyr
AUU	-	spc

tRNA	sym	AA
CAA	V	Val
CAC	V	Val
CAG	V	Val
CAU	V	Val
CCA	G	Gly
CCC	G	Gly
CCG	G	Gly
CCU	G	Gly
CGA	A	Ala
CGC	A	Ala
CGG	A	Ala
CGU	A	Ala
CUA	D	Asp
CUC	E	Glu
CUG	D	Asp
CUU	E	Glu

tRNA	sym	AA
GAA	L	Leu
GAC	L	Leu
GAG	L	Leu
GAU	L	Leu
GCA	R	Arg
GCC	R	Arg
GCG	R	Arg
GCU	R	Arg
GGA	P	Pro
GGC	P	Pro
GGG	P	Pro
GGU	P	Pro
GUA	H	His
GUC	Q	Glu
GUG	H	His
GUU	Q	Glu

tRNA	sym	AA
UAA	I	Iso
UAC	M	Met
UAG	I	Iso
UAU	I	Iso
UCA	S	Ser
UCC	R	Arg
UCG	S	Ser
UCU	R	Arg
UGA	T	Thr
UGC	T	Thr
UGG	T	Thr
UGU	T	Thr
UUA	N	Asn
UUC	K	Lys
UUG	N	Asn
UUU	K	Lys