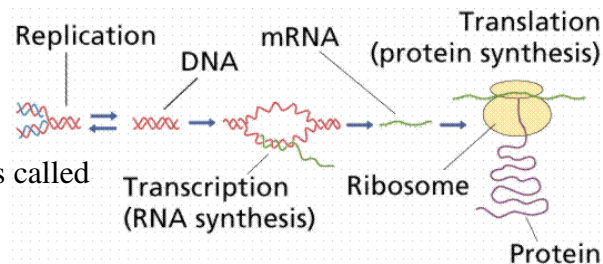




Name _____
Date _____ Period 1 2 3 4 5 6

Mr. Hoyle

Proteins Synthesis (Translation) Worksheet



Translation

1. The process of reading the mRNA and building the protein is called _____.

Triplet Code

2. The use of three bases to code for an amino acid is called the _____ code.

3. There are _____ possible combinations based on four nucleotides.

4. There are only _____ amino acids.

5. There can be more than one carrier (tRNA) for an _____.

6. A sequence of three unpaired nucleotides in a mRNA molecule is called a _____.

7. Three codons do not carry amino acids. They are called _____ codons.

8. OMIT Today the three codons in the above question are recognized as _____ or terminators responsible for ending the building of a protein and causing its release from the ribosome.

9. The signal to start building a protein is the codon that carries the amino acid _____.

10. Using the Messenger RNA Codon Chart, identify the amino acids that would be carried by each of the following codons.

Codon	Amino Acid	Codon	Amino Acid
AUU = _____		UGG = _____	
GGA = _____		GAA = _____	
AUG = _____		GAU = _____	
UCU = _____		CCC = _____	
CGC = _____		AAC = _____	
UGU = _____		CUC = _____	

11. The transfer RNA molecules, which carry the amino acids, have three unpaired nucleotide bases called "anticodons". The anticodons are complimentary to the codons carried on the mRNA. What would be the anticodons for the following codons?

Codon	Anticodon	Codon	Anticodon
AUU = _____		UGG = _____	
GGA = _____		GAA = _____	
AUG = _____		GAU = _____	
UCU = _____		CCC = _____	

Building Proteins

12. The building blocks of proteins are _____.
13. There are _____ different amino acids.
14. If there are 500 amino acids in a particular protein, how many nucleotide bases, including the start codon (initiator) and stop codon (terminator), are needed to code for the formation of that protein. _____
15. The sites of protein synthesis are the _____.
16. Ribosomes linked together by a single strand of mRNA are called _____.
17. Using the Messenger RNA Codon Chart, complete the following table and identify the amino acid (polypeptide) sequence that would be made from the following DNA sequence.

DNA Sequence 5' - T A C A A G C G C A C A T C C T T A G G G A C T - 3'

mRNA
(codons)

tRNA
(anticodons)

Amino Acid
Sequence