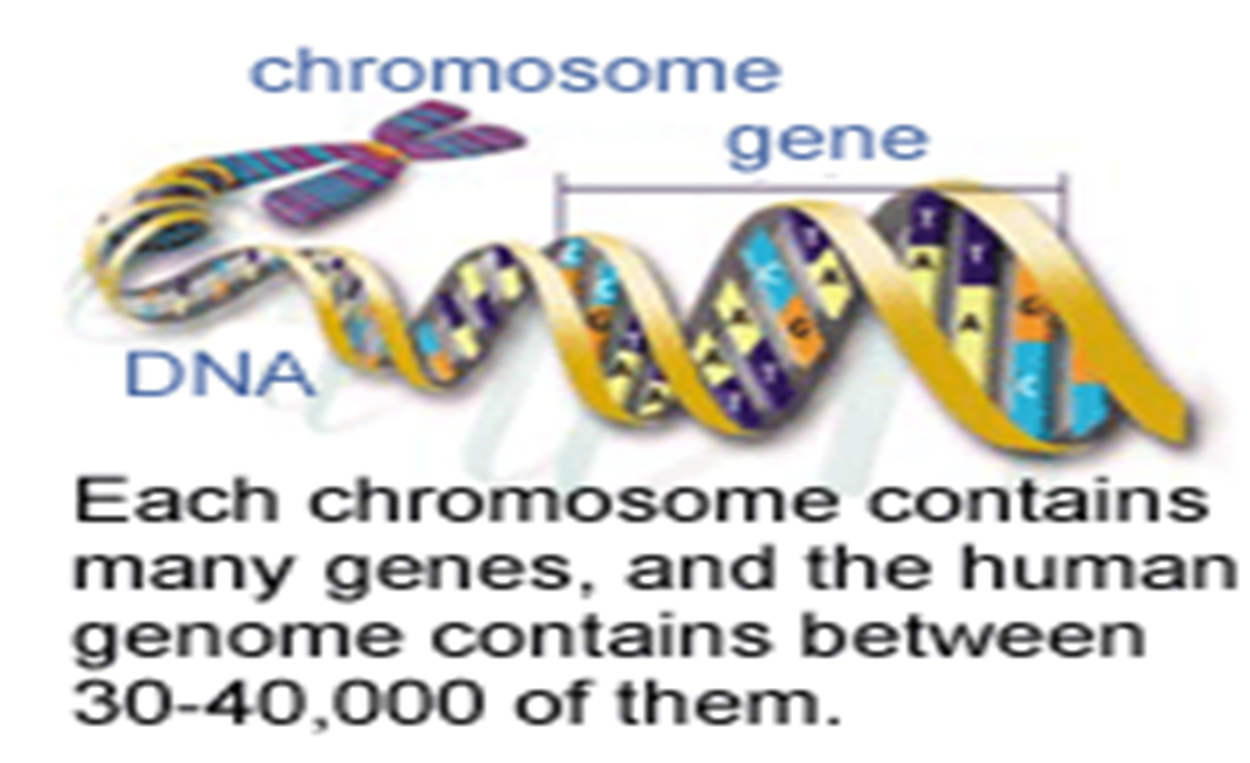
Main Ideas Protein Synthesis

Gene \_\_\_\_\_\_\_\_\_\_\_\_ of DNA that controls/codes for a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3 Types of RNA 1) **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)** –carries \_\_\_\_\_\_\_ making \_\_\_\_\_\_\_\_\_ from DNA.

2) **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** - part of \_\_\_\_\_\_\_\_- \_\_\_\_\_\_ \_\_\_\_\_\_

3) **\_\_\_\_\_\_\_\_\_\_\_\_** - \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ (building blocks of proteins) to ribosomes to make a protein

DNA vs. RNA  ***-DNA***  ***-RNA***

-Sugar (**\_\_\_\_\_\_\_\_\_\_**) -Sugar (**\_\_\_\_\_\_\_\_**)

-Phosphate Group -Phosphate

-Nitrogen Bases -Nitrogen bases

-A -A

-**T =\_\_\_\_\_\_\_\_\_** -**U =\_\_\_\_\_\_**

1 -G -G

-C -C

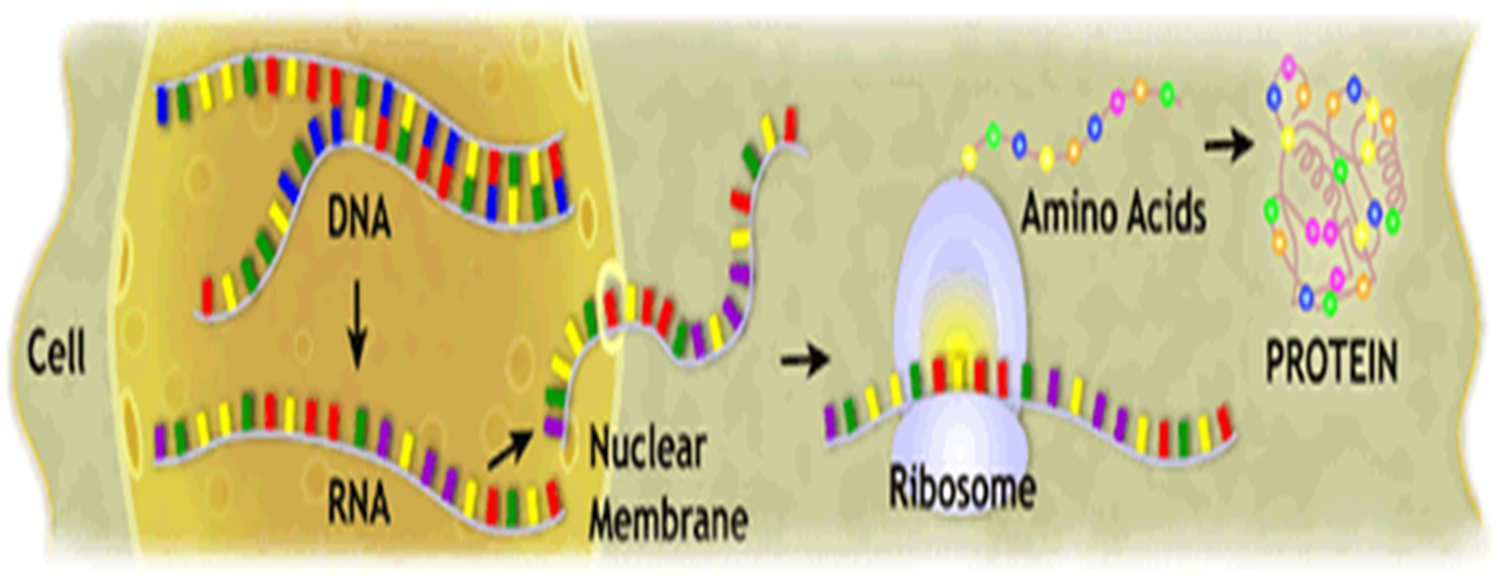
-**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** -**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Main Ideas Protein Synthesis

Protein Synthesis

**Overview 2 main processes:**

1) **Transcription**- \_\_\_\_\_\_\_\_\_ copied \_\_ (in nucleus)

 2) **Translation**- \_\_\_\_\_\_\_ made \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (in cytoplasm)

DNA to RNA

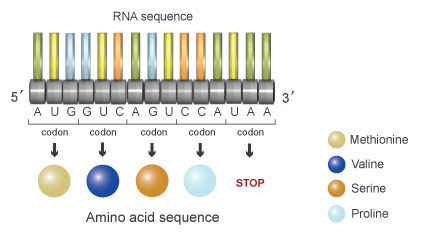
Transcription

1) DNA unzipped by\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at a gene begins copying

2) \_\_\_\_ strand of DNA template is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(copied) into \_\_\_\_\_\_\_ using \_\_\_\_\_\_\_\_\_\_\_\_\_ bases.

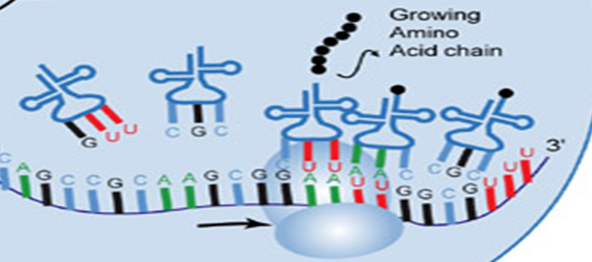
3) RNA polymerase reaches\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, stops copying

[](http://www.nature.com/scitable/content/ne0000/ne0000/ne0000/ne0000/7447898/EssGen1-5_Codons-to-AA-V2.jpg)Codon \_\_ consecutive \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on \_\_\_\_\_\_\_ that specify \_\_ particular amino acid

Main Ideas Protein Synthesis (continued)

Flow of Genetic Info **DNA** 🡪 **RNA** 🡪 **Protein**

(Central Dogma)

 Transcription Translation

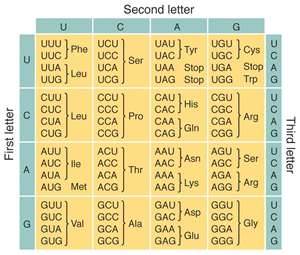
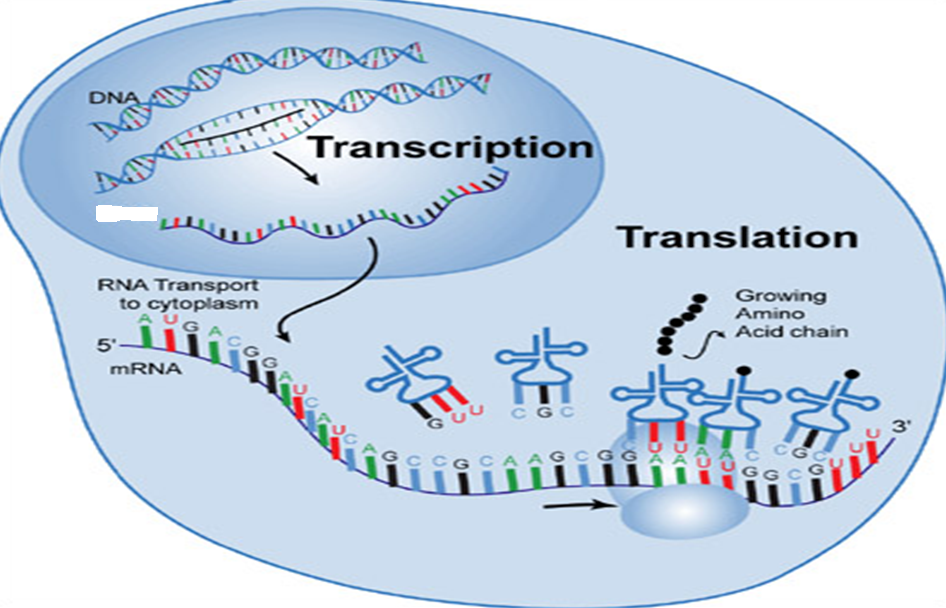


Translation Decode mRNA to Proteins

Steps:

1. \_\_\_\_\_ strand broken into codons
2. **\_\_\_\_\_\_\_\_\_\_\_** reads codons and \_\_\_\_\_\_\_\_\_\_\_ them into amino acids
3. **\_\_\_\_\_\_\_\_** calls for \_\_\_\_\_\_\_ to bring correct amino acids
4. **\_\_\_\_\_\_** \_\_\_\_\_\_\_\_ match up with \_\_\_\_\_\_ \_\_\_\_\_\_\_\_
5. Amino acids are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ until a **\_\_\_\_\_\_\_** codon is reached
6. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**- ribosome complex falls apart. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[](http://www.lucasbrouwers.nl/blog/wp-content/uploads/2010/04/genetic-code.jpg)

On the picture above, label ALL of the following for FULL credit:

1. mRNA,
2. rRNA,
3. tRNA,
4. codon,
5. anti-codon,
6. amino acid,
7. nucleus

Using the genetic code chart to the right complete the following:

1. Transcribe (from DNA to RNA) the following DNA sequence. Then, Translate it to an amino acid chain.

DNA-ATCGCCATA

mRNA-

Amino Acids-

1. Transcribe AND translate the following DNA sequence:

DNA- ATCGCCATAGCG

mRNA-

Amino Acids-

1. Transcribe and translate the following DNA sequence:

DNA-ATCGCCATAGCGCGA

mRNA-

Amino Acids-