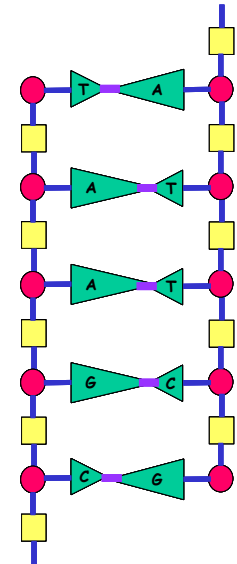


## OL - Protein Synthesis: How proteins are made

### Step ONE: TRANSCRIPTION

1. Where is DNA found?
2. Can DNA leave the nucleus?
3. Label the parts of DNA →

Deoxyribose sugar  
Phosphate  
Nitrogenous base  
Hydrogen bond



4. Review DNA.  
Circle a nucleotide  
What structure do the bases attach to? \_\_\_\_\_  
What holds the two bases together? \_\_\_\_\_  
What are the alternating parts on the backbone?  
\_\_\_\_\_  
Where is the genetic code to make proteins carried? \_\_\_\_\_
5. What DNA does:
  - it provides the instructions to \_\_\_\_\_
  - a \_\_\_\_\_ is a piece of DNA that holds instructions for how to build a \_\_\_\_\_
  - the sequence of \_\_\_\_\_ in the gene determines the \_\_\_\_\_ of \_\_\_\_\_ that is built
6. Where is DNA located?
7. What is responsible for building proteins in the cell?
8. Where are the protein builders located?
9. Why can't DNA leave the nucleus?
10. How will the instructions from the DNA get out of the nucleus and into the cytoplasm?
11. What are the two phases to protein synthesis?
12. What makes the mRNA?

13. What is this process called (making mRNA and reading DNA)?
14. Look at the structure of mRNA . . . what are the four nitrogenous bases on mRNA?
15. What is the sugar in mRNA?
16. How many strands is mRNA?
17. Why can mRNA leave the nucleus?
18. Where does the mRNA go?
19. What is in the cytoplasm that the mRNA must meet with?
20. What is built here?
21. Below is a strand of DNA (it has unzipped from its other side). Match the mRNA bases that would join to this DNA during transcription:

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

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