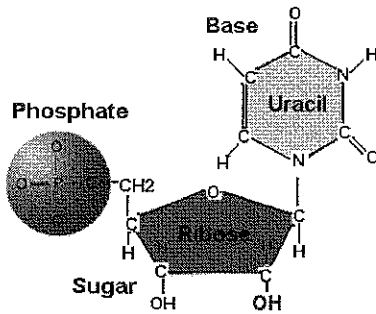


PART C: RNA TRANSCRIPTION

How does a cell “read” the chemical message coded in its DNA? Part of the answer lies with a second molecule in the nucleus of cells called ribonucleic acid or RNA. RNA is similar to DNA in that its molecules are also formed from nucleotides. However, deoxyribose and thymine are not found in RNA. Two other molecules, ribose and uracil, are present. Ribose replaces deoxyribose, and uracil replaces thymine.



Nucleotide

#1 Which base is replaced in RNA by uracil?	
#2 What sugar replaces deoxyribose in RNA?	
#3 To which base in DNA do the following RNA bases pair?	
a. Guanine	
b. Adenine	
c. Cytosine	
d. Uracil	
Cut the six RNA nucleotides that you will need to complete your RNA strand.	
#4 What is the name of the enzyme that is represented by your scissors?	
Open or unzip your <u>right DNA</u> strand along the bases. Tape each part of your tan paper on opposite sides of yellow paper.	
Use the right side of your DNA strands as the template and create a RNA strand using correct base pairing rules.	
#5 What enzyme is represented by your hand when you add the nucleotides to create the RNA strand?	
#6. What enzyme is represented by the glue used to connect the RNA to the DNA strand?	
#7 Do the RNA half-rung bases pair exactly as they would if this were DNA replication?	

RNA is a single-stranded molecule. Thus, the series of RNA nucleotides formed from DNA represents an RNA molecule. After its formation, this RNA leaves the nucleus of the cell and goes to the ribosomes. It carries the DNA message of base sequences in the exact same order. Therefore, the formation of this series of RNA nucleotides is called **TRANSCRIPTION**.

#8 What happens to the newly created RNA strand?	
#10 What word describes the process that you have just modeled, DNA being copied to RNA?	
#11 The purpose of the RNA that we have created is to carry information out of the nucleus, what type of RNA did we create?	

Complete the table below with Yes or No in each box.

Similarities and Differences between DNA and RNA		
	DNA	RNA
Ribose present		
Deoxyribose present		
Adenine present		
Thymine present		
Uracil present		
Guanine present		
Cytosine present		
Formed from nucleotides		
Double stranded		
Single stranded		
Remains in nucleus		
Moves out of nucleus		

What would the corresponding DNA strand be for the DNA strand below:

ACGTAGTCAATG

What would the corresponding RNA strand be for the DNA strand below:

AACTCGTTACGA