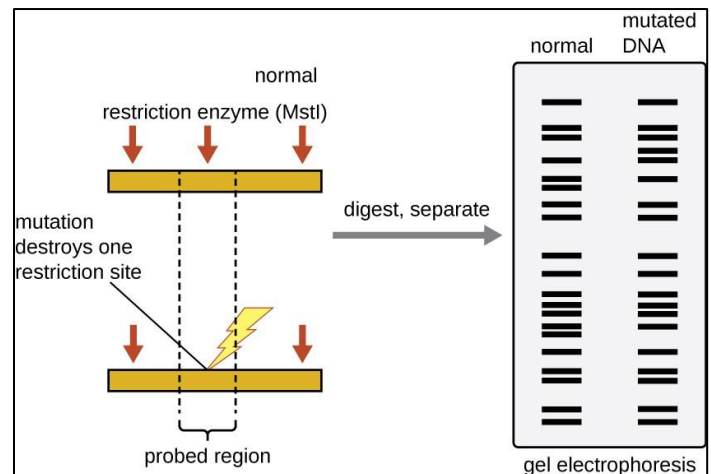
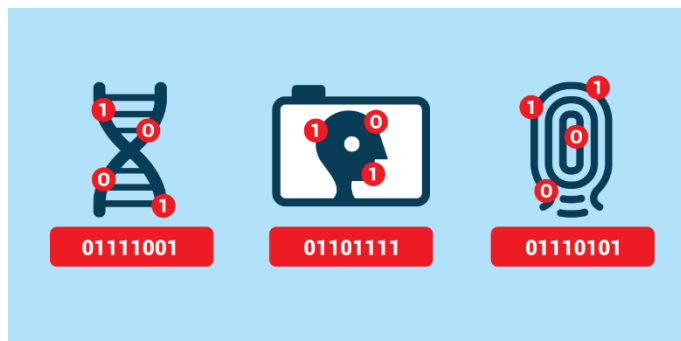
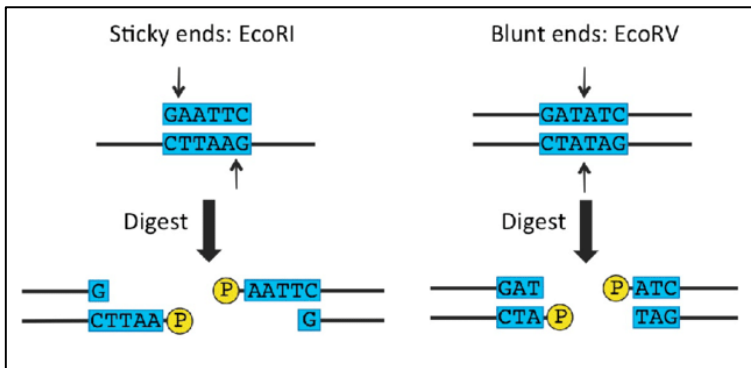
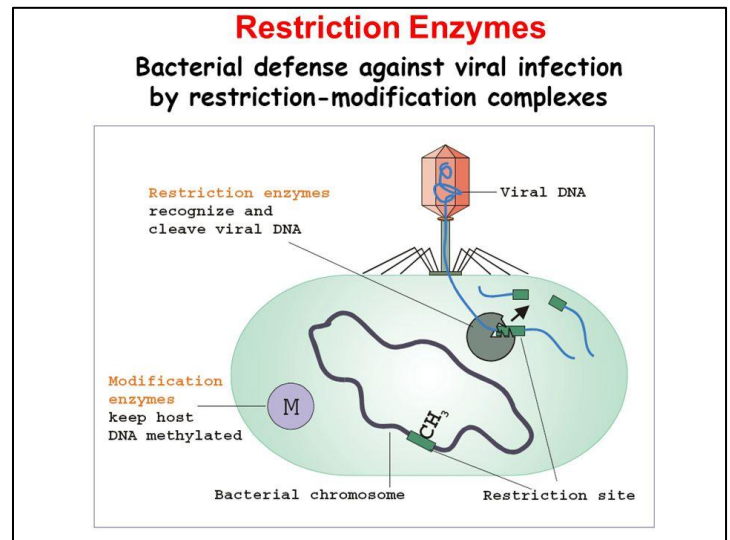
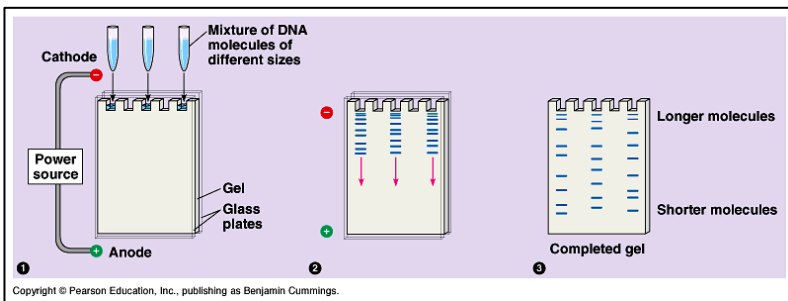
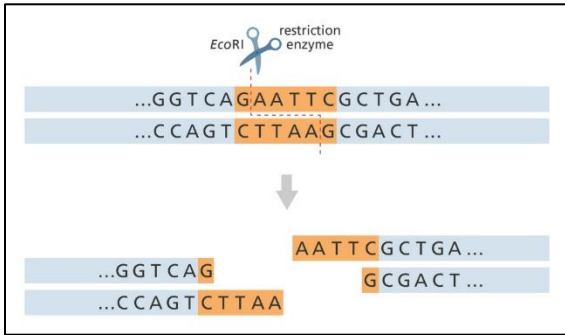
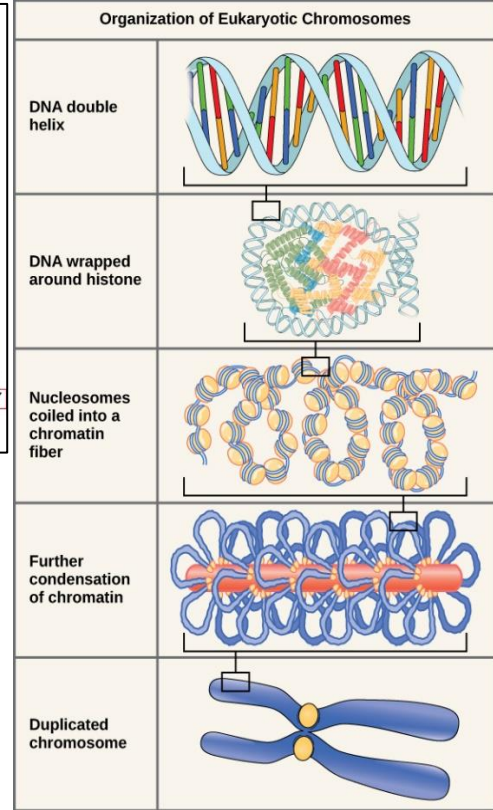
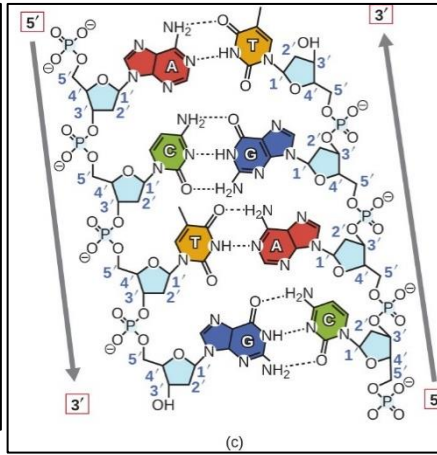
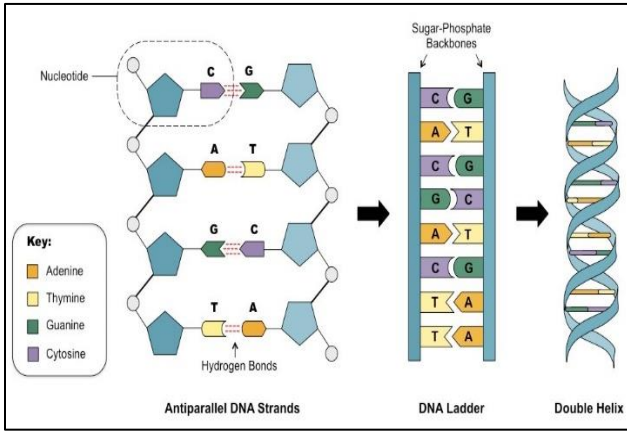
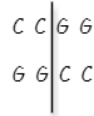


HBS 1.3 Diagrams



PRACTICE:

Another restriction enzyme is known as HaeIII. It cuts DNA at the following sequence.



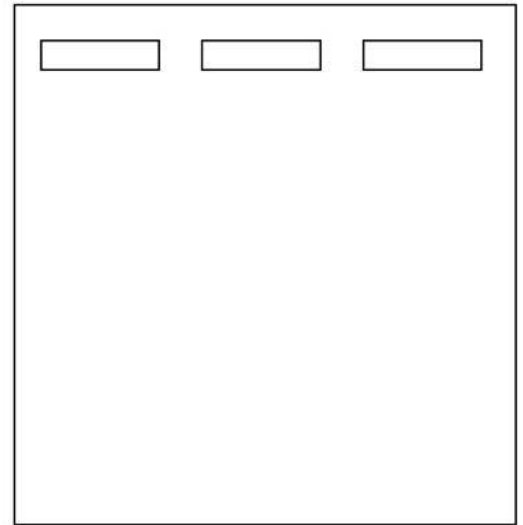
1. Use HaeIII to cut the following DNA segment

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

- a. How many cuts did HaeIII make?
- b. How many DNA segments were produced?
- c. What type of ends are created by HaeIII?

Label the following:

- + End
- - End
- Longer fragments
- Shorter fragments
- Wells



Name of Enzyme	Recognition sequence	Cut	Sticky or blunt ends?
EcoR1	GAATTC CTTAAG		
BamH1	GGATCC CCTAGG		
HindIII	AAGCTT TTCGAA		
TaqI	TCGA AGCT		
SmaI	CCCGGG GGGCCC		
PstI	CTGCAG GACGTC		
HaeIII	GGCC CCGG		

1. Use BamH1 to cut the following sequence.

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

3. Use EcoR1 to cut the following sequence

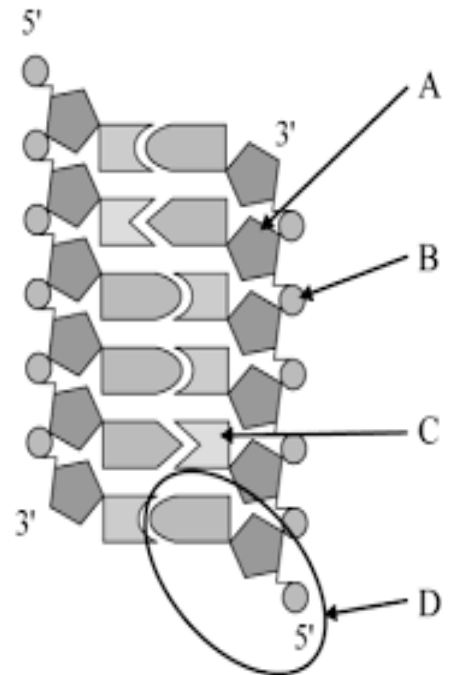
T T T G A A T T C A G A T
A A A C T T A A G T C T A

2. Use HindIII to cut the following sequence

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

4. Use SmaI to cut the following sequence.

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



7. The following DNA sequence is from a virus that is dangerous and scientists want to use a restriction enzyme to cut the virus' DNA into bits. They do not need sticky ends and they won't combine it with any other DNA. Choose one of your restriction enzymes from above to cut the DNA below. How many segments are you left with? _____

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