1. Structure of DNA
   A. DNA stands for:

   B. Building blocks are __________
      Made of:
      1. 
      2. 
      3. Nitrogen Bases
         a. 
         b. 
         c. 
         d. 

   C. Nitrogen base pairing
      1. Hydrogen bonding
      2. Purines (A and G)
      3. Pyrimidines (T and C)

   D. Shape:
      1. Discovered by: __________________ & __________________ in ____________
      2. Rosalind Franklin:
      3. Chargaff:
      4. Antiparallel:
         3' (three prime) and 5' (five prime)
      5. Supercoiled around histones

   E. Charge:
2. Replication

A. Purpose:

B. Occurs before.....

C. Mutations

D. Steps with enzymes

1. Unwinding and Unzipping with DNA helicase (enzyme)

2. Complimentary strands are made from free nucleotides with DNA polymerase

3. Result: Two identical copies
3. Spooling DNA (DNA extraction)
   A. Purpose:
   B. Function of:
      a. Salt
      b. Detergent
      c. meat tenderizer
      d. EDTA

4. Protein Synthesis
   A. Purpose:
   B. Why proteins?
   C. Structure of a protein:
      1. Amino Acids
   D. The Genetic Code:
      1. DNA Codons
      2. Start and Stop codons
   E. Transcription in the nucleus:
      1. mRNA
         a. Uracil
F. Translation in the cytoplasm at the ribosome

1. tRNA
   a. D

2. Amino acid chain

5. Mutations
   A. Point mutation

B. Frame shift mutation

C. Chromosome mutation