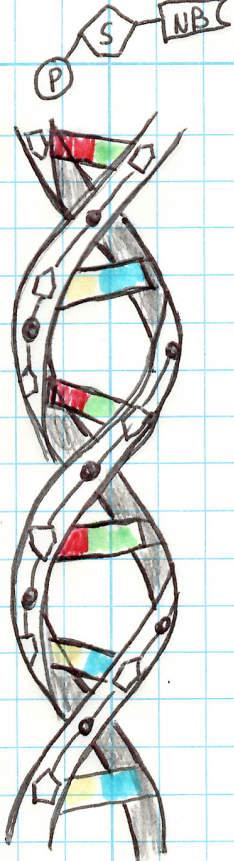
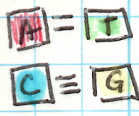


Molecular Genetics

P- Phosphate
S- Sugar
NB- Nitrogen Base

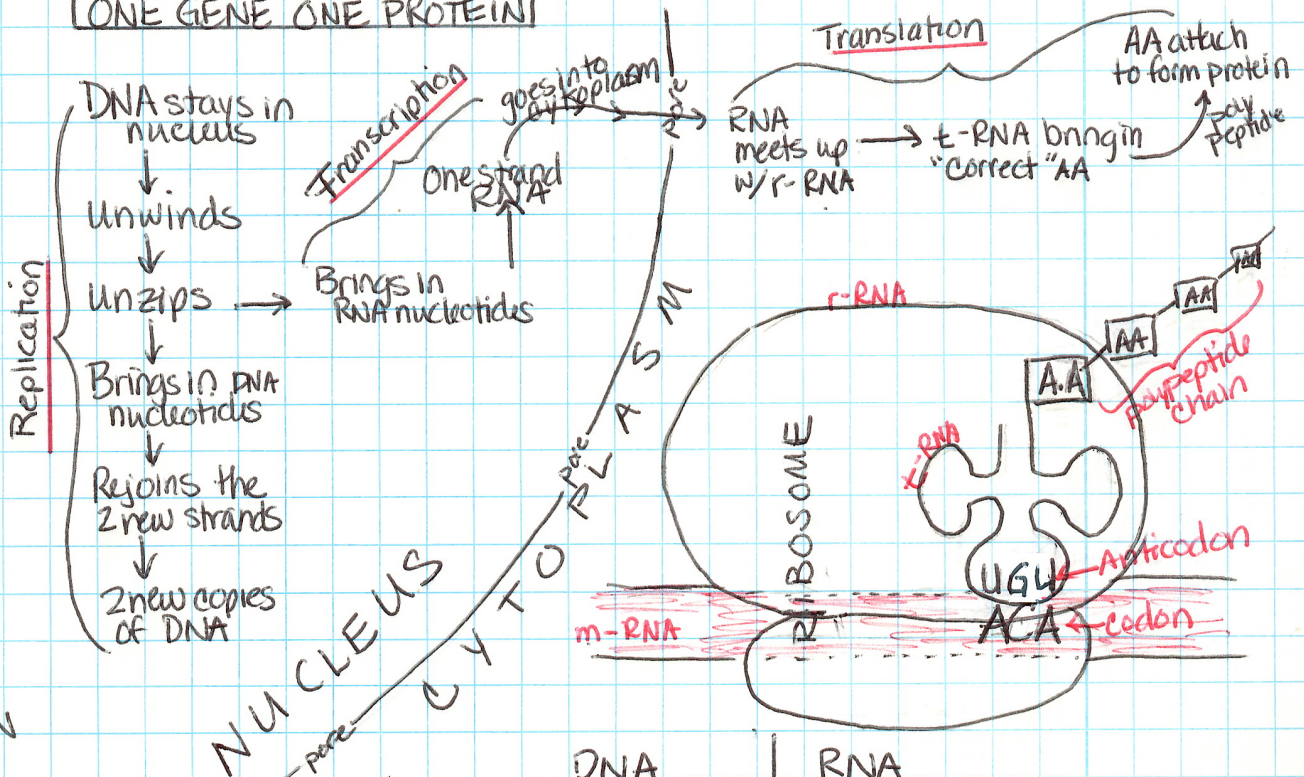


WATSON/CRICK
WILKINS/FRANKLIN



Nucleotides make up DNA
DNA codes for genes (amino acid sequences)
Genes make up chromosomes
Chromosomes are in every cell's nucleus
Nucleus controls the cell (what it does)

ONE GENE ONE PROTEIN



NUCLEUS
CYTOPLASM

	DNA	RNA
Sugar	Deoxyribose	Ribose
Nitrogen base	A T C G	A U C G
Strand	Double	Single
Where	In nucleus	made in nucleus used in cytoplasm

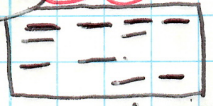
Gene Mutations - Natural or Caused by mutagenic agents
Crossover, Insertion, Deletion, Inversion, Addition

Genetic Engineering - "Move DNA from one organism into another to produce useful biological products". Growth hormone or Insulin

- * 1. Cut DNA from source w/ same restriction enzyme that cut bacteria
- 2. Insert DNA into bacteria.
- 3. Grow bacteria which produce the desired product
- 4. Can alter animals or plants

- * Cloning - make exact copy of organism
- 1. Remove nucleus from egg cell
- 2. Insert desired nucleus into enucleate egg
- 3. Allow cleavage
- 4. Implant embryo into organism

BIODIVERSITY LAB
Similar organisms have similar characteristics
small changes allow for possible better survival
(Gel Electrophoresis)



Genetic Screening **Karyotype** - picture of chromosome

Pedigree chart - show generations