* C3 (Rain Forest)
  + Efficient w/ sunlight
  + Inefficient w/ water
* C4-CAM (dessert)
  + Inefficient w/ sunlight
  + Efficient w/ water
* So how does it work?
  + Genome- Your Genetic code
  + Gene- a DNA code for specific characteristics
  + Chromosomes- are a long chain of genes
    - Provides the instructions for building every organism on earth
  + Alleles- Different forms of the same genes that code for the same trait.
  + Humans have 3 and a half billion genes
  + 75% of the is non-coding DNA
  + Most DNA in eukaryotes do not code for any proteins
* VOCAB
* Genotype-all of the genes contained in an organism
* Phenotype-the physical manifestation of the instructions (Characteristics)
* Read recognize and bind the DNA
* Transcription- The sequence in while the gene is copied from the DNA to a middle man molecule called mRNA (secret code only read by ribosome)
* Translation-read the instructions to build proteins
* 1. DNA to RNA
  + because nucleus has DNA
    - Your book calls this step transcription
  + The RNA is a single strand –compliment of the DNA Strand with 1 Change
* DNA to RNA
  + 1. Unzip
  + 2 take the compliment
  + replace t with u

So now we have RNA with the DNAs info on the RNA

* RNA runs away
  + Leaves the nucleus
  + Goes to the factory
    - Ribosome
  + Ribosome reads RNA
* Ribosome
  + Looking for start instruction
  + When it finds start attaches amino acid
  + Till it finds a stop
* Growing and copying during interphase in the nucleus
* 1. unzips
* 2. Bases are read
* 3. Complementary Bases are paired
* 4. strands are proofread
* 5. cut out mistakes and corrects
* 6. process resumes
* Mutations
  + Bad reputation
  + Tend to be disruptive
  + Very very rare
* It possible to lose cells and it will not effect you
* GAMETES-Mutations in sex cells will result in a mutated fetus (variation in the features of the population)
* Radiation causes mutations (X-rays)

Insertion or deletion

What causes mutations?

* + Mistakes in copying DNA
    - Nothing you can do
  + chemical exposure
    - prop 65
  + Radiation
* Gene therapy difficulties
* Golden rice
* Rice infused with beta carotene from daffodils producing golden rice
* Bt corn- corn infused with a bacteria that kills insects
* Fear #1 organisms tat we want to kill may become invincible
* Fear #2 Organisms that we don’t want to kill may be killed inadvertently
* Fear #3 Genetically modified crops are not tested or regulated
* Fear #4 Eating genetically modified foods is dangerous
* Fear #5 Loss of genetic diversity among crop plants is risky
* Fear #6 Hidden costs may reduce the financial advantages of genetically modified crops
* TAC AAG GAC TTA CCG TGA CGT
* ATG TTC CTG AAT GGC ACT GCA
* AUG UUC CUG AAU GGC ACU GCA
* AUG- Methionine (Start)
* AAG-Lysosine
* GAC-Aspartic acid
* TTA-