🔖 Lecture 05

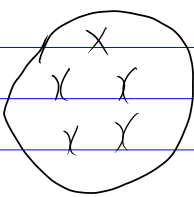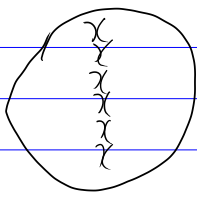## 🔖 Important Notes:
- → Exam #1 Feb 2nd (in class)
  - ↳ Online exam #1 due monday night (Feb 1st)
    - ↳ you get 2 hours
    - ↳ focused on text book content
    - ↳ ~50 questions
  - ↳ Group blog original post due Wednesday (Jan 27)
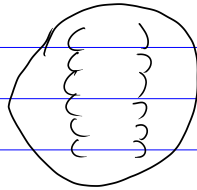 - ↳ Due dates for online assignments reset.

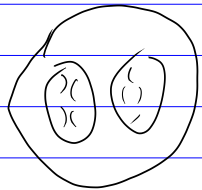---

🔖 Meitoses Activity

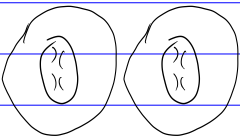
Prophase   Metaphase   Anaphase   Telophase
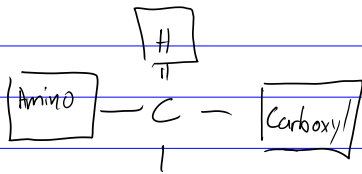

Cytokinesis

🔖 Meitoses Summary Recap

↳ Where: In dividing cells
↳ When: After interphase
↳ Why: As a method of cellular reproduction, i.e. to pass on DNA.

◾ DNA → RNA → Protein
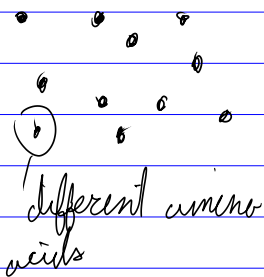
DNA Codes for Proteins

◾ Protein Structure
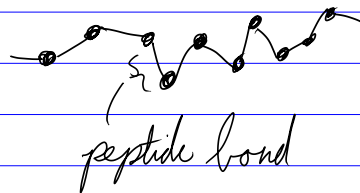
amino acid structure

$$H$$

Amino — C — Carboxyl

R-group → 20 different R-groups

↳ 20 different amino acids

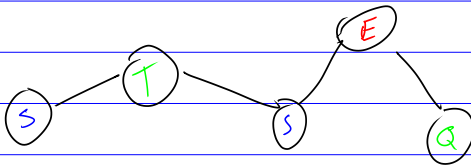The R-group determines the utility of the amino acid.
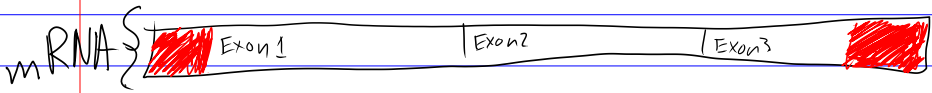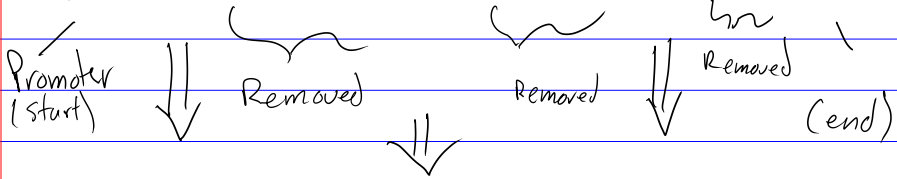
Monomers

Amino Acid Polymer

peptide bond

different amino acids

◾ Protein Building

S — T — S — E — Q

S: Serine
T: Threonine   } Not expected to know
Q: Glutamine
E: Glutamic Acid

Gene expression

| | Exon 1 | Intron 1 | Exon 2 | Intron 2 | Exon 3 | Intron 3 | |

Promoter (start)

Removed   Removed   Removed   (end)

mRNA { | | Exon 1 | Exon 2 | Exon 3 | | }
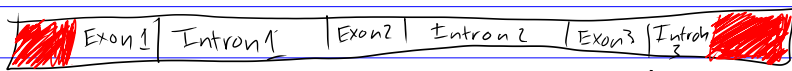
Exons may reorder when introns
are removed

anti-codon

amino acid

tRNA

Ribosome

mRNA {

Ribosom

anti-codon

amino acid

tRNA   tRNA

mRNA {

Ribosom
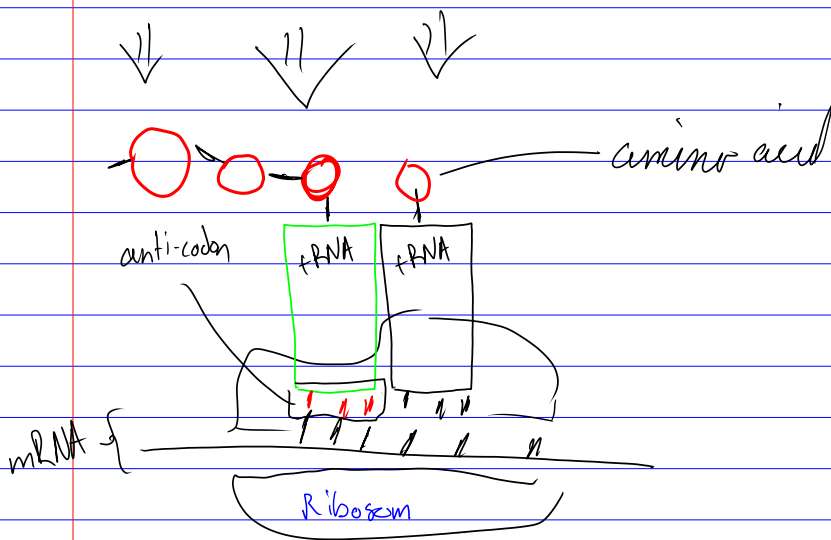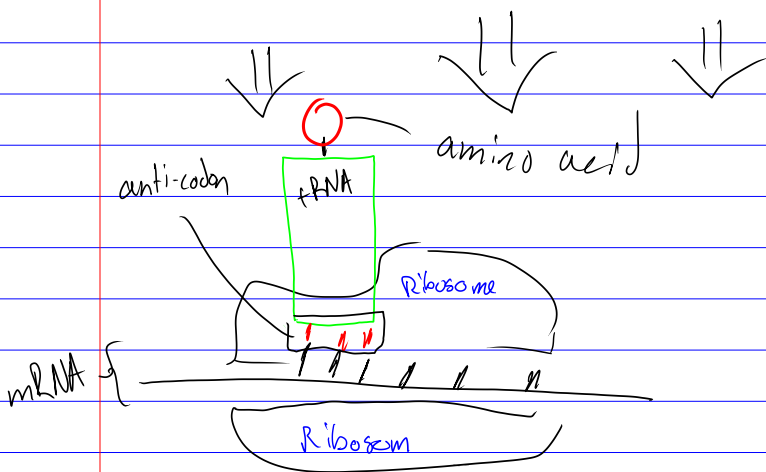
* Genetic Code is universal
  ↳ all species use the same dna → RNA → Protein
* Nonambiguous → No ambiguous matchings
* Redundant → Different sequences code for the same protein.

Gene Expression Activity

DNA TAC CGCGCG GGC CGCGCG TAT CGCGCG AAC
     AUG [intron) CCG [intron] AUA [   ] UUG

DNA CGCGCG TGT CGCGCG ATT
     [   ] ACA [   ] UAA

⇓

mRNA AUG   CCG   AUA   UUG   ACA   UAA

      Met   Pro   Ile   Leu   Thr   Stop
      "Start"