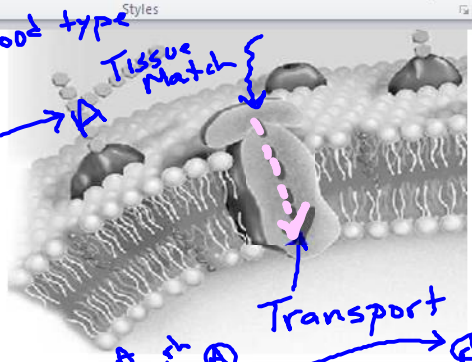
Fluid Mosaic Model

- Made from phospholipids
- Bilayer - two Phospholipid layers
- Semipermeable - some molecules can not pass through. Based on size and chemistry. (more in Ch. 8)
- Exterior Hydrophylic
- Interior Hydrophobic
- Overall structure is a fluid with a mosaic of proteins embedded in it. (Picture ping-pong balls covering the surface of a pool with a few larger items floating in it. Inner Tube, Dive Flag, fountian)



- Cytoplasm
  - Everything between the cell membrane and the nucleus that is not an organelle.
  - Mostly water with lots of dissolved molecules necessary to carry out metabolic functions.

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Solvent

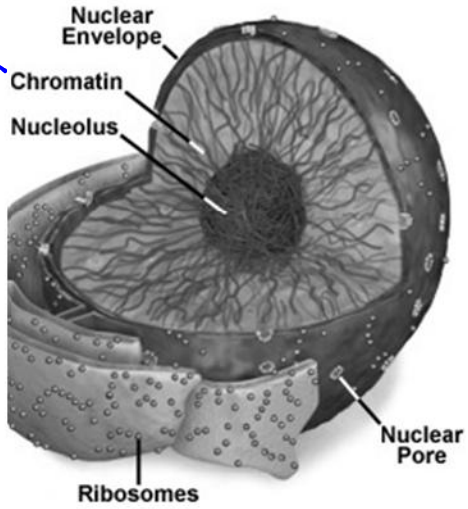
- Organelles
  - Structures that work like miniature organs carrying out specific functions for the cell.

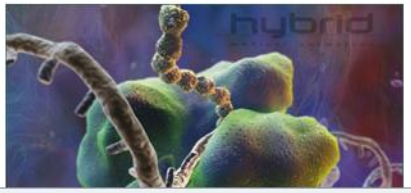
Per _____ Date _____

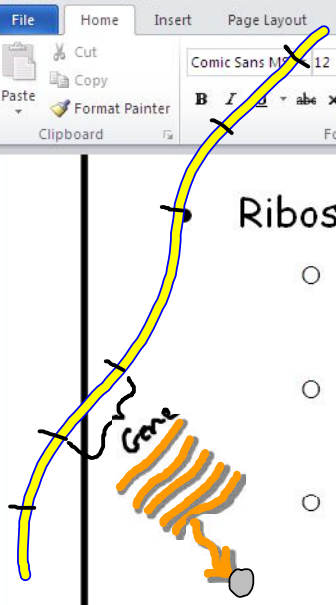
- Nucleus
  - Found in all Eukaryotes
  - Surrounded by Nuclear Envelope - phospholipid like all memb. (pores allow RNA , Ribosomes out)

  Functions
  - Stores Genetic information as Chromatin (DNA)
  - Controls all cell functions
- Nucleolus
  - Makes ribosomes

  RNA + Protein
- Ribosomes
  - Found in cytoplasm (free) and on rough ER (bound)





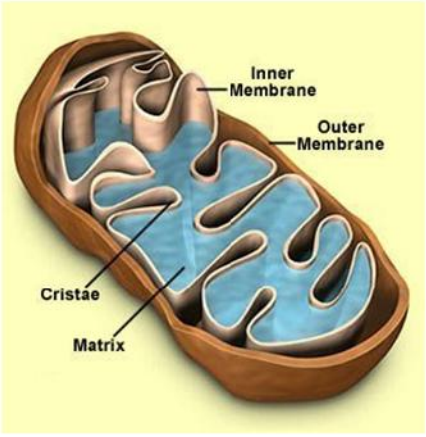


- Ribosomes
  - Found in cytoplasm (free) and on rough ER (bound)
  - 2 parts each made of protein & rRNA
  - Produce _____ by following instructions from mRNA (messenger RNA)

und Organelles (all unique to Eukaryotes)

Mitochondria

- Found in all eukaryotes
- Function
  - Cellular respiration - Convert chem. Energy of food into Free Energy to power cell functions
  - Double membrane- outer, inner folded (christae) to increase surface area (site of most rxns)



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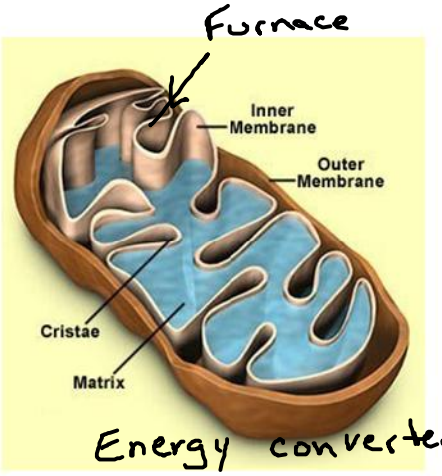
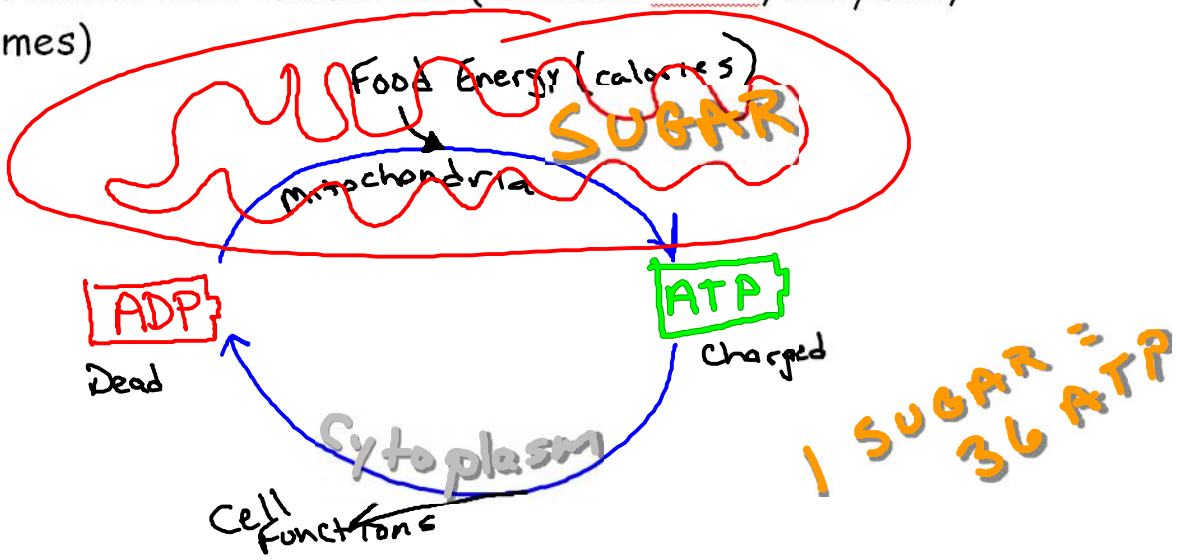
Mitochondria

- Found in all eukaryotes
- Function
  - Cellular respiration - Convert chem. Energy of food into Free Energy to power cell functions
    Available to use = ATP
  - Double membrane- outer, inner folded (christae) to increase surface area (site of most rxns),
  - Matrix within inner membrane (contains rRNA, enzymes, ribosomes)



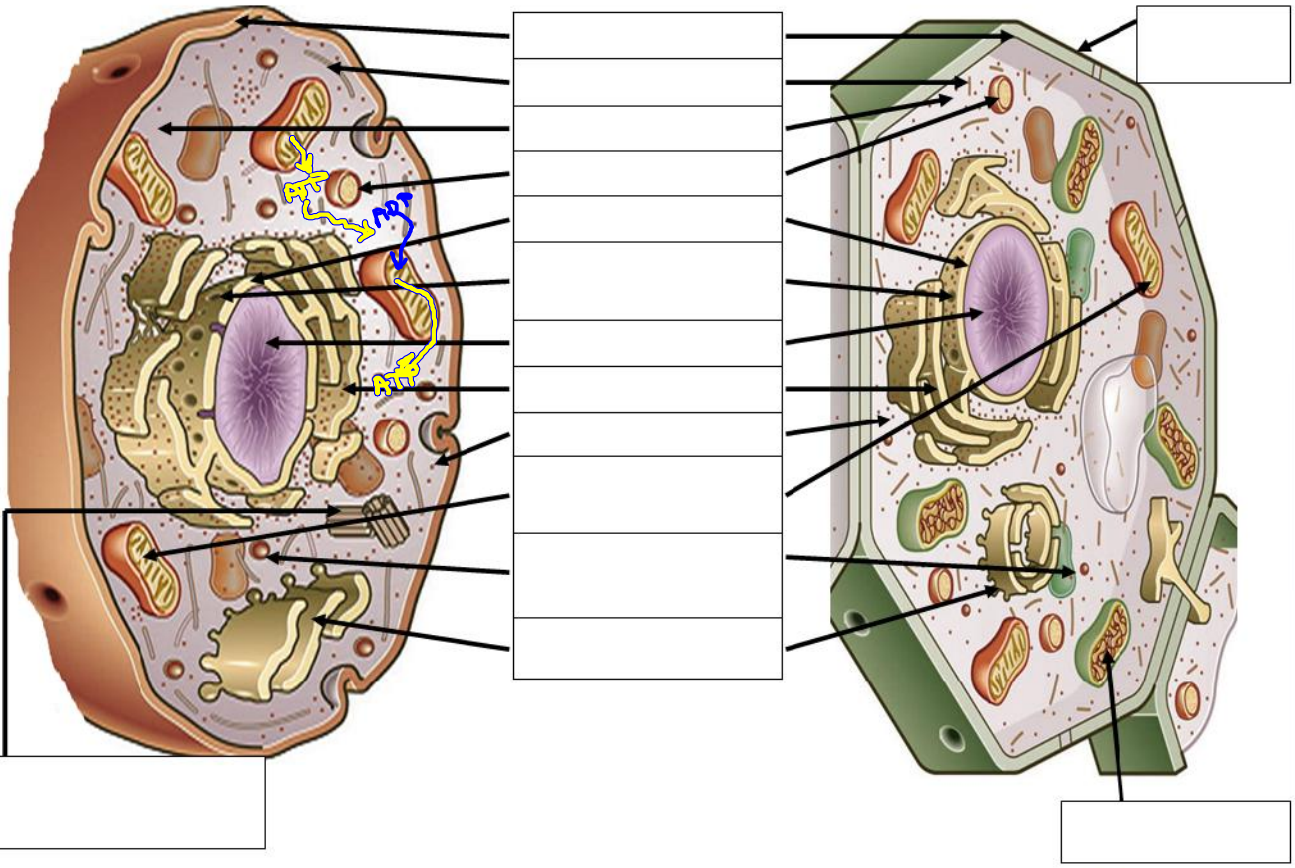
Energy converter

- Double membrane- outer, inner folded (christae) to increase surface area (site of most rxns),
- Matrix within inner membrane (contains rRNA, enzymes, ribosomes)



Per _____ Date _____

Unique Animal Cell Structures	Common Cell Structures	Unique Plant Cell Structures



Per _____ Date _____

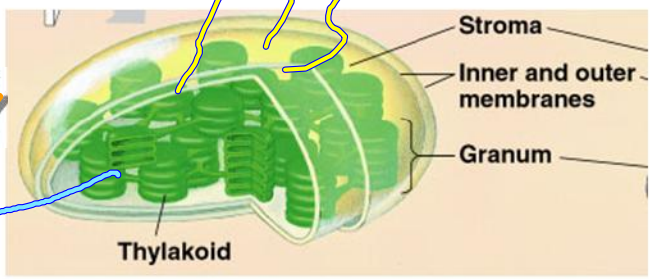
Chloroplasts - Solar cells

- Found only in Plant cells (some protozoan)
- Structure - Double lipid membrane
  - Membrane bound disks (thylakoid) filled w/ chlorophyll. Arranged in stacks called grana. Stroma (Fluid similar to matrix of Mitochondria)
- Function
  - Photosynthesis- Convert solar energy (sun) into chemical energy (sugar)
- Chlorophyll - primary photo pigment,

Sunlight

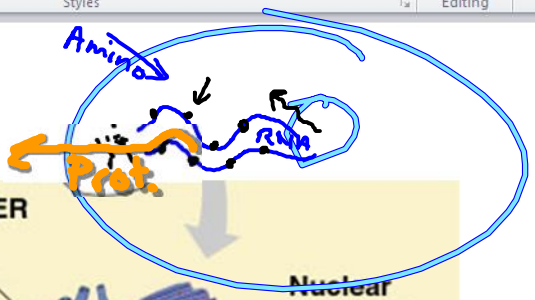
ATP

Sugar

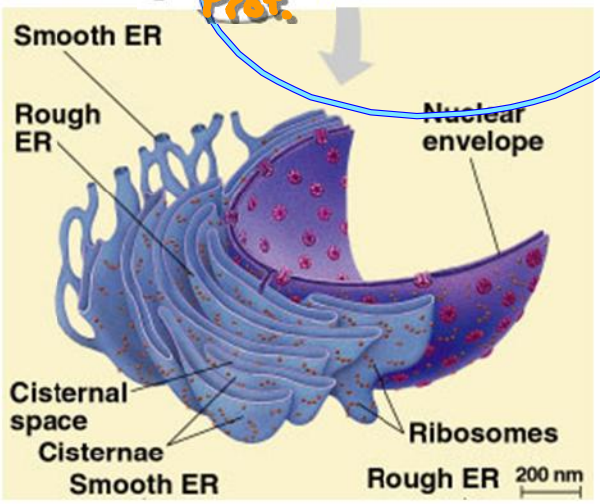


Endoplasmic Reticulum (ER)

Halways – Conveyor belt



- Structure -Single lipid membrane in winding interconnected channels
- Two types of ER
  - Rough ER – covered w/ bound ribosomes (loc near nucleus). Site of much protein production.
  - Smooth ER contains no ribosomes (loc farther from nuc). Lipid synthesis, toxin metabolism, carbohydrate storage / release. Muscle cells only- electrical impulse transmission, stimulation of muscle proteins causing contraction.



Golgi Apparatus

- Structure - flattened stack of membrane sacks (stack of pancakes)

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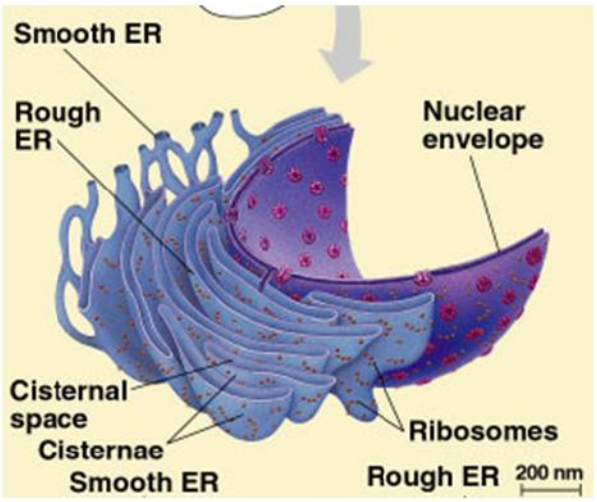

Golgi Apparatus

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synthesis, toxin metabolism, carbohydrate storage / release. Muscle cells only- electrical impulse transmission, stimulation of muscle proteins causing contraction.

Golgi Apparatus

- Structure - flattened stack of membrane sacks (stack of pancakes)
  - Cis face - receiving side
  - Trans face - shipping side

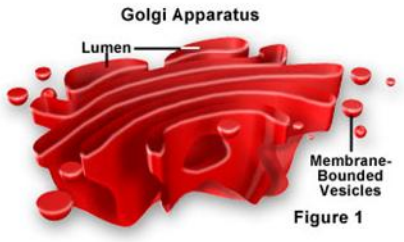


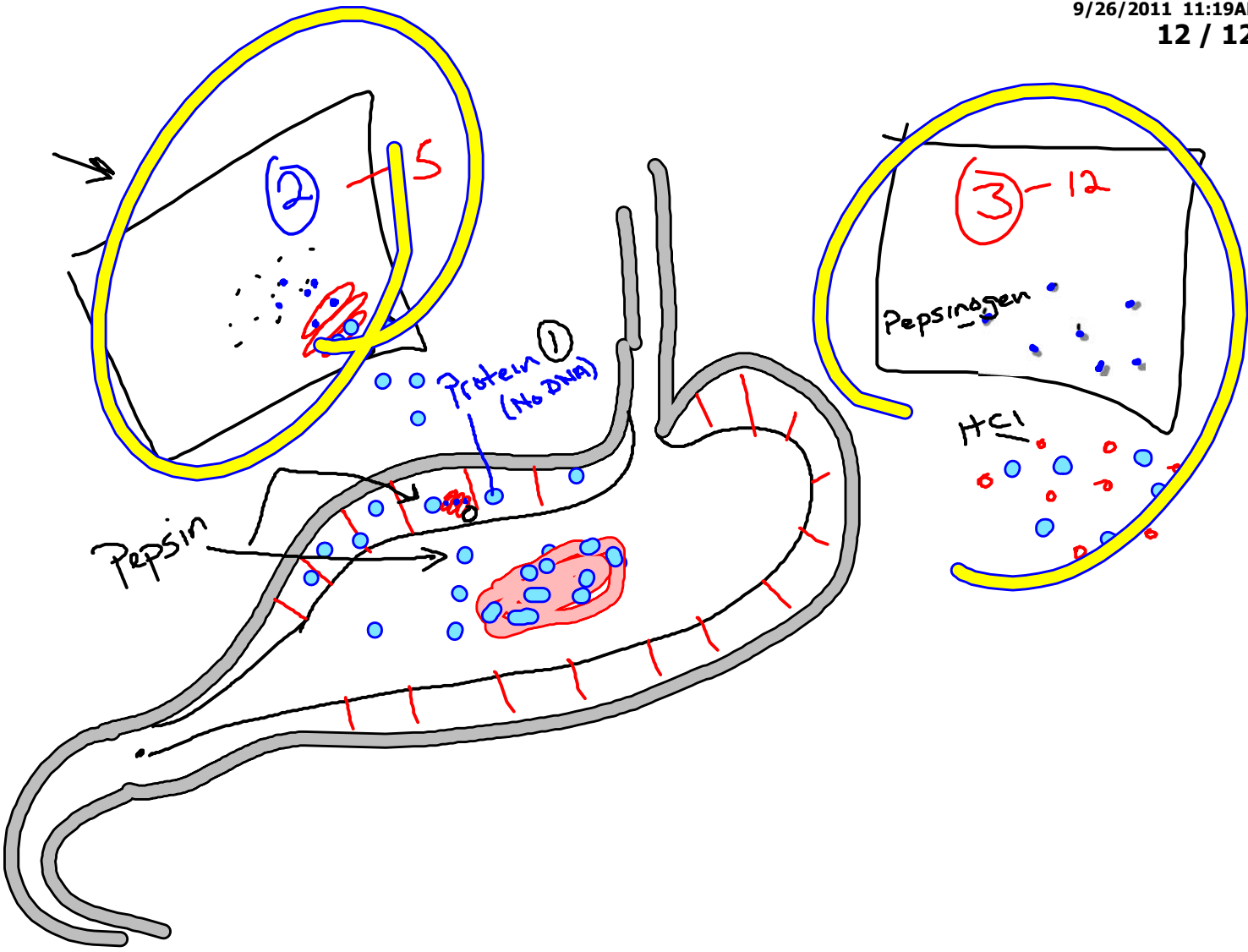
Figure 1

Stomach -
Pepsin - digests protein
Stomach cells produce it.

Why don't stomach cells get digested by their own pepsin

Name _____ Per _____ Date _____

- Function


2
5
3
12
Pepsinogen
HCl
Protein (1)
(No DNA)
Pepsin