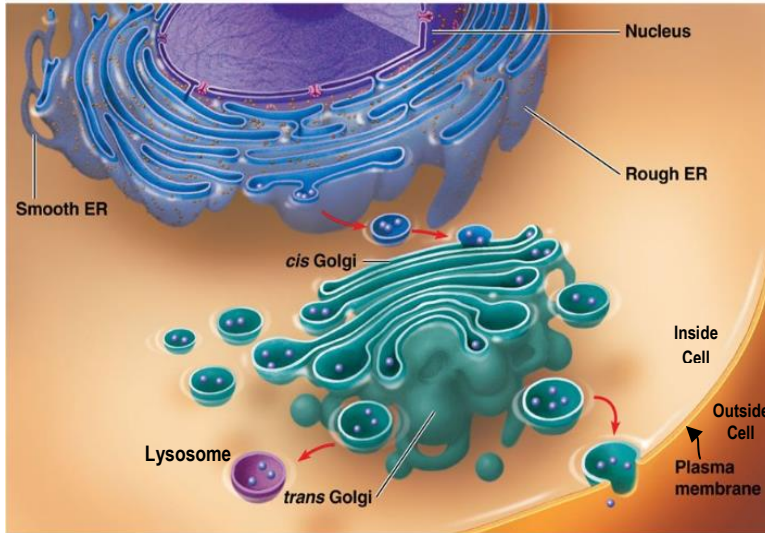


CONCEPT: CELL ORGANELLES

- All cells contain organelles ("organs of cells"): subcellular _____ or components with specialized functions.
- Eukaryotic cells contain several membrane-bound organelles, whereas prokaryotic cells do not.
 - Many membrane-bound organelles of eukaryotes are part of the _____ system.
 - The endomembrane system functions include *modifying, transporting, &* _____ cellular materials.

EXAMPLE:

Eukaryotic Endomembrane System

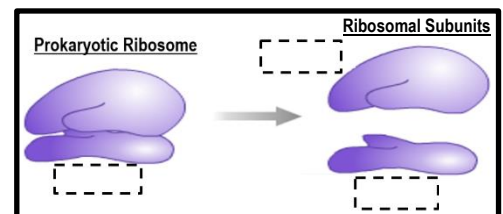
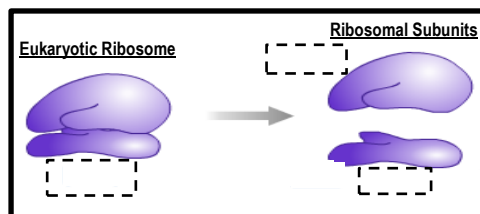
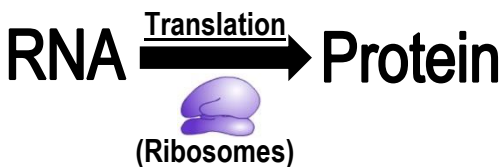


Endomembrane System Organelles	Functions
Nucleus (____ Envelope)	Stores/protects DNA. Controls nuclear transport.
____ Endoplasmic Reticulum (ER)	Studded with ribosomes, modifies & helps proteins fold.
____ Endoplasmic Reticulum (ER)	Detoxifies the cell. Makes carbohydrates/lipids.
____ Apparatus	Modifies proteins/lipids to ship to final locations.
Plasma _____	Barrier controlling transport into & out of the cell.
Vesicles	Membrane bubbles that transport & fuse with membranes.
_____	Vesicle with digestive enzymes that breakdown & recycle things.

Ribosomes

- All cells contain _____ that are directly involved in the process of _____ (*protein synthesis*).
- Ribosomes have two subunits (_____ & _____ subunit) and are a mixture of ribosomal RNA (rRNA) & proteins.
 - Eukaryotic cells have *larger* _____ ribosomes (60S large subunit & a 40S small subunit).
 - Prokaryotic cells have *smaller* _____ ribosomes (50S large subunit & a 30S small subunit).

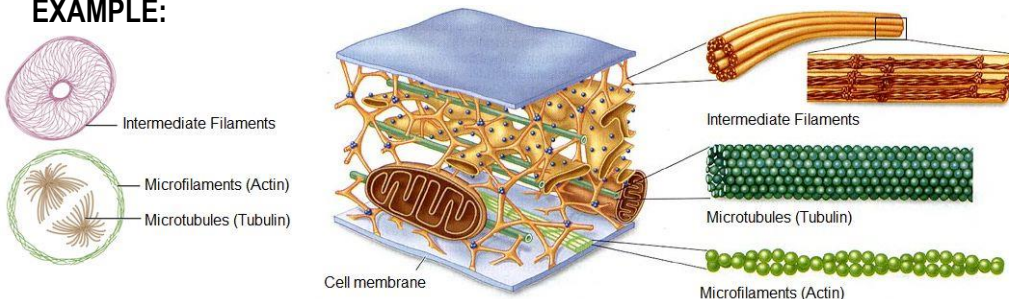
EXAMPLE:



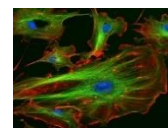
Cytoskeleton

- Consists of _____ & *intermediate filaments* as well as _____.
- Functions include providing *cell-shape, movement, transportation, & signaling*.

EXAMPLE:



Mitochondria & chloroplasts are relevant organelles we discuss in the endosymbiotic theory topic.



CONCEPT: CELL ORGANELLES

PRACTICE: Which of the following contains an incorrect match of the organelle function/description?

- a) Ribosomes: conduct the process of translation
- b) Rough Endoplasmic Reticulum: lipid synthesis
- c) Smooth Endoplasmic Reticulum: alcohol/chemical detoxification
- d) Lysosome: specialized vesicles with digestive enzymes

PRACTICE: Which of the following contains a correct match?

- a) 80S: Eukaryotic large ribosomal subunit
- b) 60S: Prokaryotic large ribosomal subunit
- c) 40S: Eukaryotic small ribosomal subunit
- d) 70S: Eukaryotic large ribosomal subunit