AP BIOLOGY
DIVERSITY OF LIFE
ACTIVITY #3

NAME_____

DATE_____HOUR____

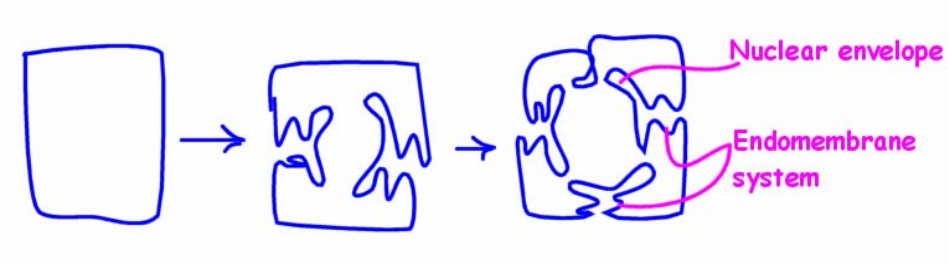
THE PROTISTS

ORIGIN OF EUKARYOTIC CELLS

Origin of eukaryotes involved origin of:

- Membrane enclosed nucleus
- Chloroplasts
- Cytoskeleton
- Multiple, linear chromosomes
- Mitochondria
- Endomembrane system
- 9+2 flagella
- Mitosis & meiosis

Origin of endomembrane system & nuclear envelope



Infoldings of plasma membrane

Origin of mitochondria and chloroplasts

Endosymbiosis:

- Mitochondria & chloroplasts were once independent prokaryotes
- Started living inside other prokaryotes
- Eventually lost ability to live apart

Evidence: Mitochondria & chloroplasts

- Same size as prokaryotes
- Have own DNA
- Ribosomes more similar to those in prokaryotes

PROTIST SYSTEMATICS

OLD	NEW
1 kingdom - Protista Problems • Polyphyletic • Contain organisms that couldn't be placed in other kingdoms • Very diverse • Only common characteristic is eukaryotic	5 to 8 proposed kingdoms Attempt to make classification reflect evolution Developed using molecular systematics