

## A Comparison of Plant Vs Animal Cells

Plant Cells	Vs	Animal Cells
*cell wall		*no cell wall
rigid outer structure		
made of cellulose		
thick .1-10 $\mu$ m		
gives shape & support		
*cell membrane		*cell membrane
just inside cell wall		outer boundary
same structure in both, much thinner than cell wall: .004-.005 $\mu$ m thick		
same function: controls what goes in & out of cell		
*regular shape		*irregular shape
rectangular, square		roundish, flexible
hexagonal		star-shaped
plant cells maintain shape by cell walls & vacuoles		
animal cells maintain shape by cytoskeleton		
*large central vacuole		*small vacuoles
mainly filled w/H <sub>2</sub> O to maintain shape & rigidity		
supports plant		
also serves as storage		
area for proteins, ions, wastes		
*plastids: organelles that can make or store food or contain pigments		*no plastids
ex. chloroplasts, chromoplasts		

## Cell Specialization

multicellular organisms begin life as a fertilized egg, one cell

this cell divides: 2->4->8->16->ball of cells

these cells initially are stem cells: have the potential to become any kind of body cell  
due to chemical cues, cells begin migrating to different areas and then become specialized as a certain type of cell

these cells then gather together and form a tissue

cell specialization means there are specific changes in structure, # of cellular organelles, etc  
these changes allow cells to do particular jobs

for example: muscle cells specialize in contraction  
they need lots of E for contraction, so what organelle should be present in greater than normal #s in a muscle cell?

ex. WBC's specialize in eating & destroying bacteria

so what organelle should be present in greater #s in WBCs?

ex. cells that make up glands specialize in making and secreting hormones or other products  
so what organelle should be present in greater #s in gland cells?