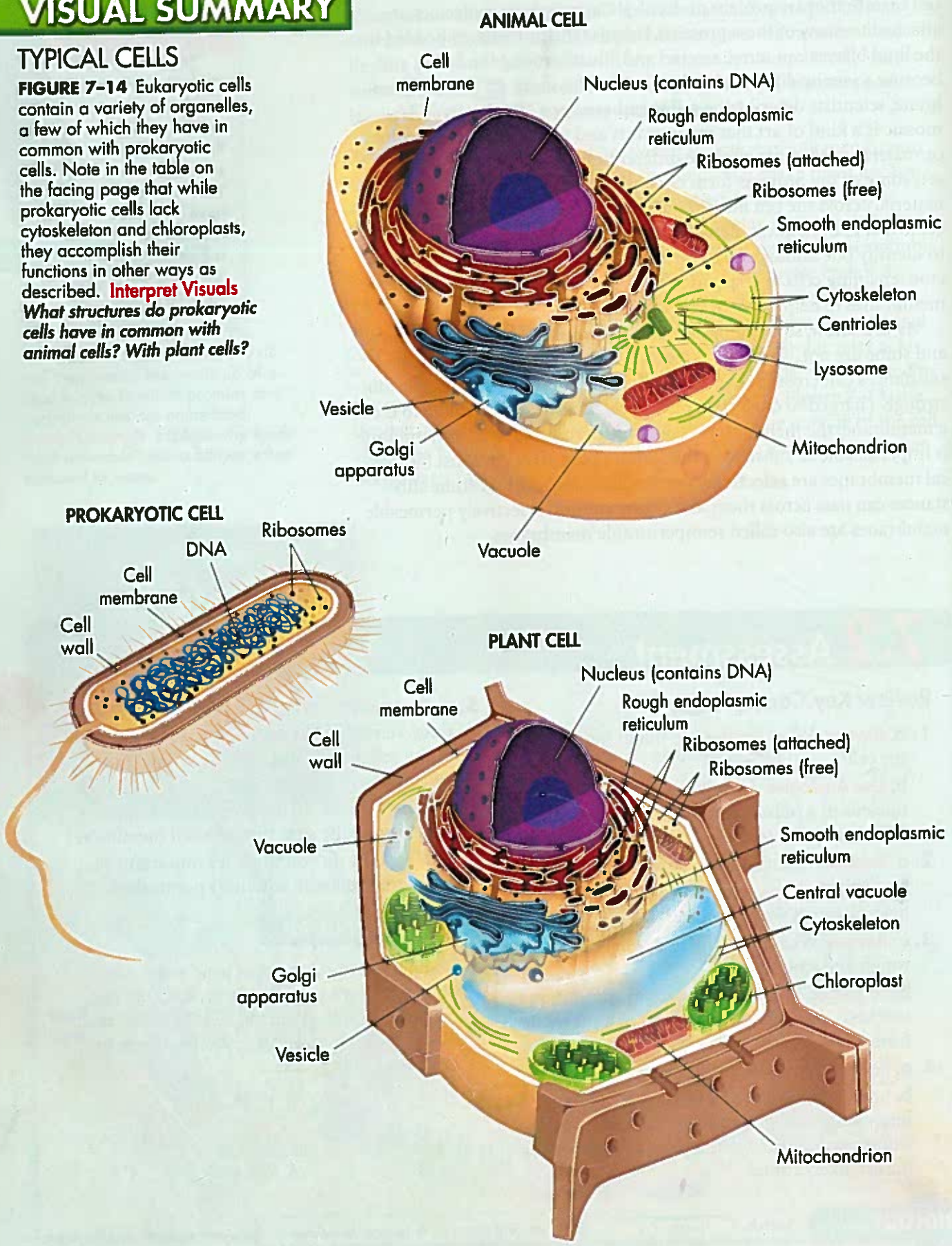
VISUAL SUMMARY

TYPICAL CELLS

FIGURE 7–14 Eukaryotic cells contain a variety of organelles, a few of which they have in common with prokaryotic cells. Note in the table on the facing page that while prokaryotic cells lack cytoskeleton and chloroplasts, they accomplish their functions in other ways as described. **Interpret Visuals** ***What structures do prokaryotic cells have in common with animal cells? With plant cells?***



	Structure	Function	Prokaryote	Eukaryote: Animal	Eukaryote: Plant
Cellular Control Center	Nucleus	Contains DNA	*Prokaryote DNA is found in cytoplasm.*	✓	✓
Organelles That Store, Clean-Up, and Support	Vacuoles and vesicles	Store materials		✓	✓
	Lysosomes	Break down and recycle macromolecules		✓	✓ (rare)
	Cytoskeleton	Maintains cell shape; moves cell parts; helps cells move	*Prokaryotic cells have protein filaments similar to actin and tubulin.*	✓	✓
	Centrioles	Organize cell division		✓	
Organelles That Build Proteins	Ribosomes	Synthesize proteins	✓	✓	✓
	Endoplasmic reticulum	Assembles proteins and lipids		✓	✓
	Golgi apparatus	Modifies, sorts, and packages proteins and lipids for storage or transport out of the cell		✓	✓
Organelles That Capture and Release Energy	Chloroplasts	Convert solar energy to chemical energy stored in food	*In some prokaryotic cells, photosynthesis occurs in association with internal photosynthetic membranes.*		✓
	Mitochondria	Convert chemical energy in food to usable compounds		✓	✓
Cellular Boundaries	Cell wall	Shapes, supports, and protects the cell	✓		✓
	Cell membrane	Regulates materials entering and leaving cell; protects and supports cell	✓	✓	✓