Eukaryotic Organelles Review Worksheet

Structure/ Organelle	What is it?		What is it made of?
nucleus	A region surrounded by the nuclear membrane (double membrane with nuclear pores)		double membrane with nuclear pores
cytoplasm	A region outside the nucleus and inside the plasma membrane		Water, salt, protein
Structure/ Organelle	**What is it made of?**	**What does it do?**	**Where is it located?**
plasma membrane	Phospholipid bilayer Protein (fluid mosaic model)	Selectively permeable boundary Harvests energy Working surface for enzymes Cell-to-cell communication	Boundary
chromatin/ chromosomes	Protein and DNA	Genes - Gives instructions to make proteins Provides traits for next generation	Nucleus
nucleolus	RNA, proteins and (a little bit of DNA)	Makes ribosomes	Nucleus
ribosome	RNA and proteins	Makes proteins (stay in cytoplasm)	Cytoplasm
rough endoplasmic reticulum	Phospholipid bilayer and proteins with ribosomes attached	Make proteins (goes to membranes or leaves the cell)	cytoplasm
smooth endoplasmic reticulum	Phospholipid bilayer and proteins	Makes lipids (and steroids) Detoxify poisons	Cytoplasm
golgi bodies (apparatus)	Phospholipid bilayer and proteins	Receives, modifies, sorts, and ships stuff from ER	Cytoplasm

Structure/ Organelle	What is it made of?	What does it do?	Where is it located?
vesicle	Phospholipid bilayer and proteins	Transports stuff between (ER, golgi apparatus, nuclear membrane, plasma membrane, lysosome)	Cytoplasm
lysosome	Phospholipid bilayer and proteins that contains hydrolyzing (digestive) enzymes	Breaks down nutrients and bacteria and waste products	Cytoplasm
peroxisome	Phospholipid bilayer and proteins that contain oxidizing enzymes (H_2O_2)	Breaks down fats, alcohols, toxins	Cytoplasm
Vacuole 1. Central 2. Contractile	Phospholipid bilayer and proteins	Storage 1. Water and junk 2. Water and salt, then releases it	Cytoplasm
mitochondrion	Double membrane Inner membrane folded into cristae Fluid is called the matrix Have DNA and ribosomes	Harvest energy from sugar – make ATP Oxidative phosphorylation Aerobic respiration	Cytoplasm
chloroplast	Triple membranes Inner membranes folded into thylakoids and grana Fluid is called stroma Have DNA and ribosomes	Harvests energy from light to make ATP and sugar Photophosphorylation Photosynthesis	Cytoplasm
cytoskeleton	Protein (microtubules, microfilaments, intermediate filaments)	Provide structure for cell Make reactions more efficient	Cytoplasm
centrioles/ centrosome	Proteins 9 triplets of microtubules	Anchor the mitotic spindle Anchors cilia and flagella (basal body)	Cytoplasm
cilium and flagellum	Proteins (9 pairs + 2 of microtubules)	Movement	Cytoplasm and extending the cytoplasm outward
cell wall	Polysaccharides (cellulose or chitin)	Protects from osmotic rupture Helps cell maintain shape	Outside cell membrane