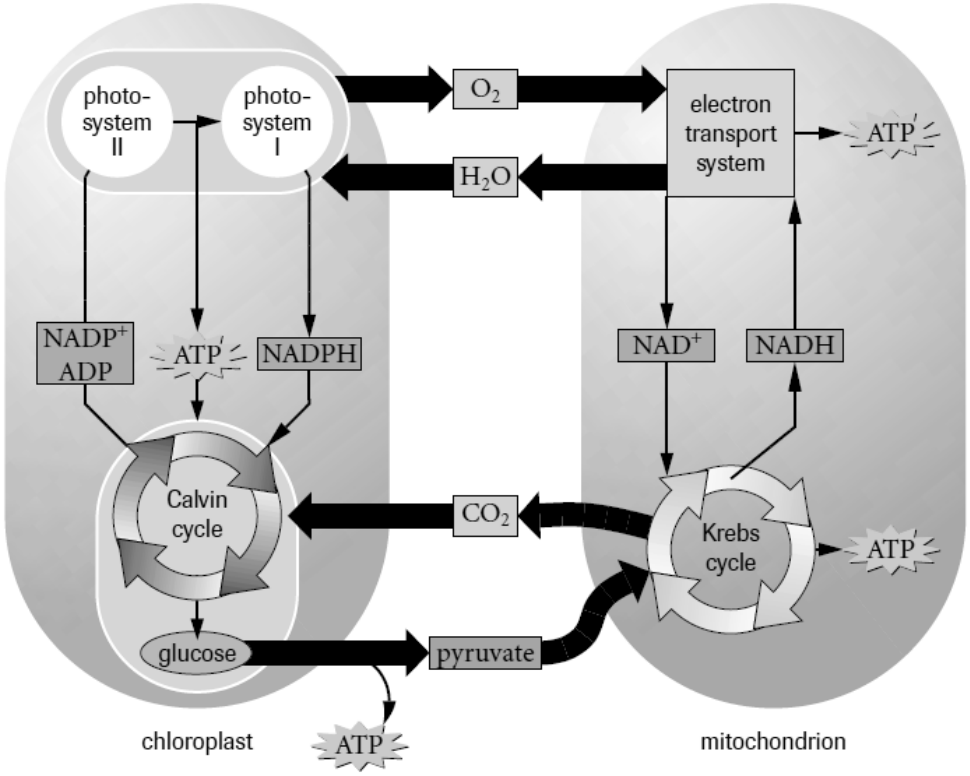
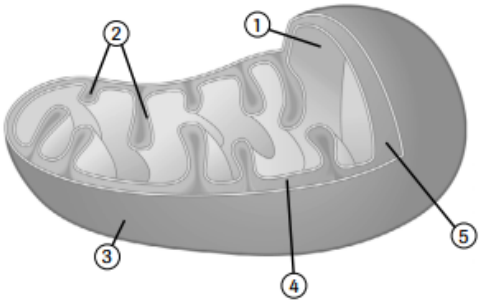
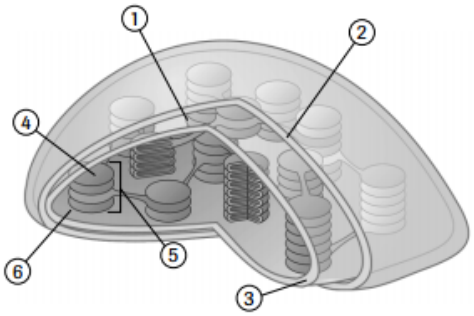
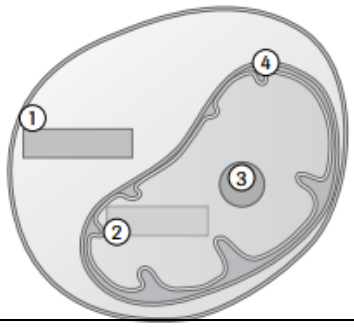
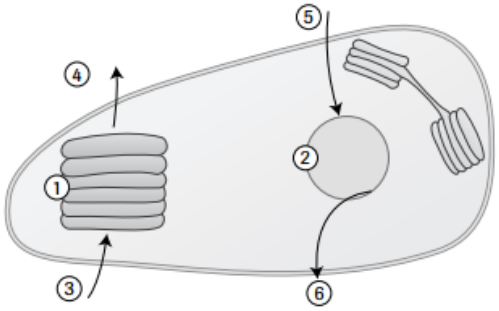
Comparing Cellular Respiration & Photosynthesis



	Criteria	Photosynthesis	Respiration
Overall	Reactants	H_2O & CO_2	Organic molecules (ex. glucose) & O_2
	Products	Organic molecule & O_2	H_2O & CO_2 & ATP
	Energy	Absorbed	Released
e-	Electron Source	H_2O	Organic molecule
	Electron Carriers	$NADP^+$/ NADPH	NAD^+/ NADH & FAD/$FADH_2$
ETC	Electron Profile	Z-pattern & Cyclic	Linear
	Electron Source	H_2O	NADH & $FADH_2$
	Electron Sink	NADPH	Oxygen
	Products	ATP, NADPH & O_2	ATP, H_2O, NAD^+ & FAD
ATP Synthesis	Molecule pumped to create gradient	H^+	H^+
	Membrane-embedded molecule	ATP Synthase	ATP Synthase
	Location of H^+ reservoir	Thylakoid Interior	Intermembrane Space
	Location of ATP synthesis	Stroma	Matrix

Comparing Chloroplasts & Mitochondria

Criteria	Mitochondria	Chloroplast
Diagrams		
	1 Matrix	1 Intermembrane Space
	2 Cristae	2 Outer Membrane
	3 Outer Membrane	3 Inner Membrane
	4 Inner Membrane	4 Thylakoid
	5 Intermembrane Space	5 Granum / Grana
		6 Stroma
Structural Comparisons	double phospholipid membrane - contain folding innermembrane (cristae) - matrix	- - double phospholipid membrane - contain thylakoids & grana - stroma
Overview of Metabolic Process		
	1 Glycolysis	1 Light Reactions
	2 Pyruvate Oxidation	2 Light Independent Reactions (Calvin Cycle)
	3 Kreb Cycle	3 H_2O 4 O_2
	4 Electron Transport Chain	5 CO_2 6 Glucose / $[CH_2O]$
Reactants	Glucose & O_2 (if aerobic)	H_2O & CO_2
Products	H_2O & CO_2 & ATP	Glucose & O_2
Pathways / Location	Prokaryotes & Eukaryotes	Plants, algae, protists, cyanobacteria