Name:_____ Date:_____

Photosynthesis vs. Cellular Respiration

Photosynthesis	Topic	Cellular Respiration
$H_2O + CO_2$ + Light	**Reactants**	O_2 + Glucose
Glucose (G3P) + O_2	**Products**	CO_2 + ATP!
Water (splitting)	**Source of Electrons?**	Glucose (pyruvate, acetyl coA)
NADPH	**Electron Carriers**	NADH $FADH_2$
Chloroplast	**Organelles Involved**	Mitochondria
Only in plants Membrane bound Thylakoid stacks	**Compare and contrast mitochondria and chloroplast**	BOTH plant/animals Membrane bound Cristae (inner membrane)
-Thylakoid membrane -Protons move into the thylakoid space from stroma	**Electron Transport Chain** **-Location?** **-Explain what happens?** **-Proton Movement?** **-Draw it?**	-Inner mitochondrial membrane -Protons move from inner membrane space into matrix
ATP produced by light reactions for Calvin Cycle	**ATP made** **-How much?** **-What is it used for?**	ATP produced at each step of C.R. the most being after oxidative phosphorylation to be used to do cellular work

Cellular Respiration vs. Fermentation

Cellular Respiration (Aerobic Respiration)	Topic	Fermentation (Anaerobic Respiration)
Mitochondria	Location in the cell	Cytoplasm
36-38	Net amount of ATP produced	2
glucose + O_2	Reactants	glucose to pyruvate
ATP CO_2 Water	Products	Lactic acid (animals) CO_2 + ethyl alcohol (yeast/bacteria)

Alcoholic vs. Lactic Acid Fermentation

Alcoholic Fermentation	Topic	Lactic Acid Fermentation
Glucose → pyruvate → acetylaldehyde	Reactants	Glucose -->pyruvate
ethyl alcohol + CO_2	Products	lactate (lactic acid)
yeast or bacteria	Types of Organisms	animal muscle cells