

Class Notes <u>Photosynthesis</u>	Name: _____ Period: _____ Date: _____
Questions/Main Idea:	Notes:
What is the definition of photosynthesis?	<ul style="list-style-type: none"> <input type="checkbox"/> Process by which autotrophs convert sunlight into sugars. <ul style="list-style-type: none"> <input type="checkbox"/> auto = self <input type="checkbox"/> troph = feed
Why do we depend on plants?	<ul style="list-style-type: none"> <input type="checkbox"/> They make food! <input type="checkbox"/> We CANNOT make our own food ☺ <input type="checkbox"/> Thankfully, plants produce glucose -- a food source for all heterotrophs! <ul style="list-style-type: none"> <input type="checkbox"/> hetero = different, other <input type="checkbox"/> troph = feed
How do we see color?	<ul style="list-style-type: none"> <input type="checkbox"/> Sunlight is made up of ALL colors together (wavelengths). <input type="checkbox"/> Pigments reflect the wavelength of color that we see and absorb the other colors.
Why are plants green?	<ul style="list-style-type: none"> <input type="checkbox"/> Chlorophyll is a pigment found in the chloroplasts of plant cells. <input type="checkbox"/> Chlorophyll A is the most important pigment in plants – responsible for the green color. <input type="checkbox"/> It reflects green and absorbs other wavelengths. <input type="checkbox"/> That means chlorophyll absorbs a lot more light than it reflects.
Why do leaves change color in the fall?	<ul style="list-style-type: none"> <input type="checkbox"/> Why use just one wavelength of light when you can have more? <input type="checkbox"/> Accessory pigments absorb green and reflect other colors (e.g., red, yellow, or orange) <input type="checkbox"/> In autumn, leaves stop producing new chlorophyll A, which lets the accessory pigments show through
What happens in photosynthesis and where does it take place?	<ul style="list-style-type: none"> <input type="checkbox"/> Photosynthesis harnesses the sun's energy and stores it as chemical energy in carbohydrates. <input type="checkbox"/> Takes place in chloroplasts. <input type="checkbox"/> Light energy (wavelengths) are absorbed by the pigment chlorophyll.
Which organisms can photosynthesize?	<ul style="list-style-type: none"> <input type="checkbox"/> Plants <input type="checkbox"/> Algae <input type="checkbox"/> Some protists <input type="checkbox"/> Some bacteria
Photosynthesis Equation	$\text{Energy} + 6\text{H}_2\text{O} + 6\text{CO}_2 \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$ <p>Sunlight + Water + Carbon Dioxide → Glucose + Oxygen</p>
How do plants store energy?	<ul style="list-style-type: none"> <input type="checkbox"/> When chlorophyll absorbs light, it splits water into H₂ and O₂, and puts electrons into an excited state (they have extra energy) <input type="checkbox"/> As the electrons leave the excited state, release energy and heat <input type="checkbox"/> The cell converts the energy into ATP and NADPH for storage
Summary:	