

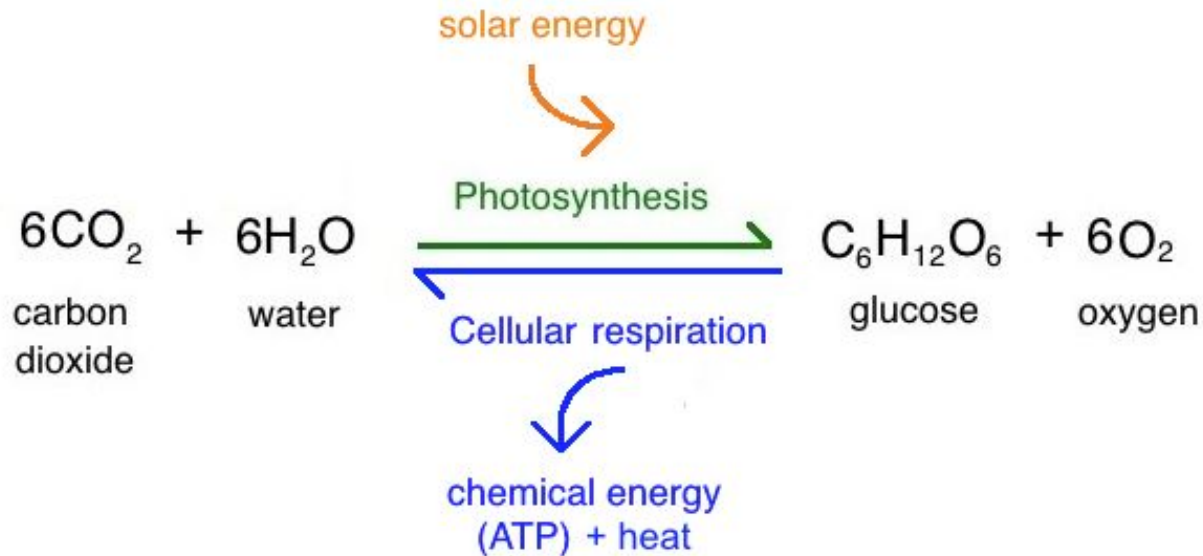
The background of the slide is a close-up photograph of vibrant green grass blades. The blades are slightly out of focus, creating a soft, natural texture. Numerous small, clear water droplets are scattered across the grass, reflecting light and adding a fresh, dewy appearance. The overall color palette is dominated by various shades of green, from bright lime to deep forest green.

# Pigments and Photosystems

Harry Villanueva

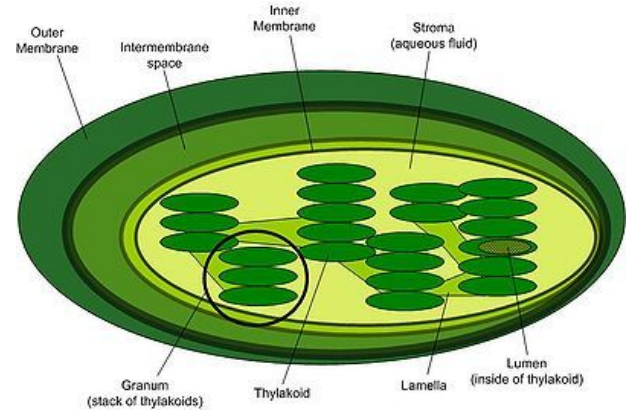
# Pigments

- ❖ Photosynthesis requires light
- ❖ Pigments capture light to power photosynthesis



# Pigments

- ❖ Located in the thylakoid
- ❖ Reflect and absorb light



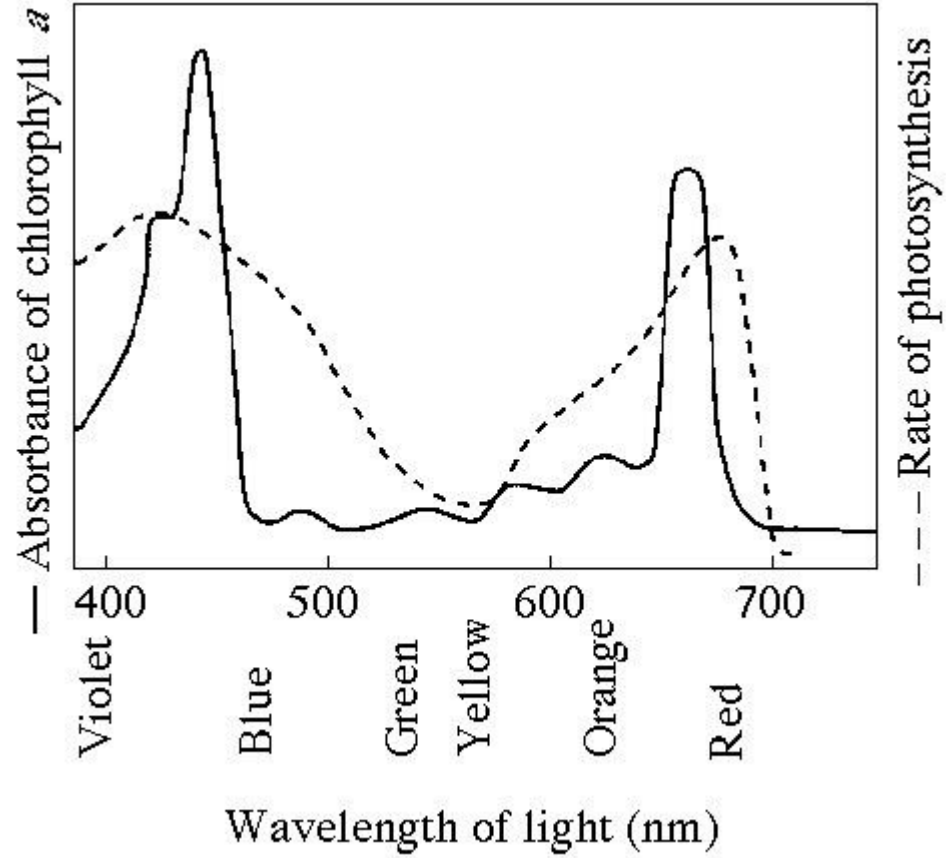
Chlorophyll



Carotene

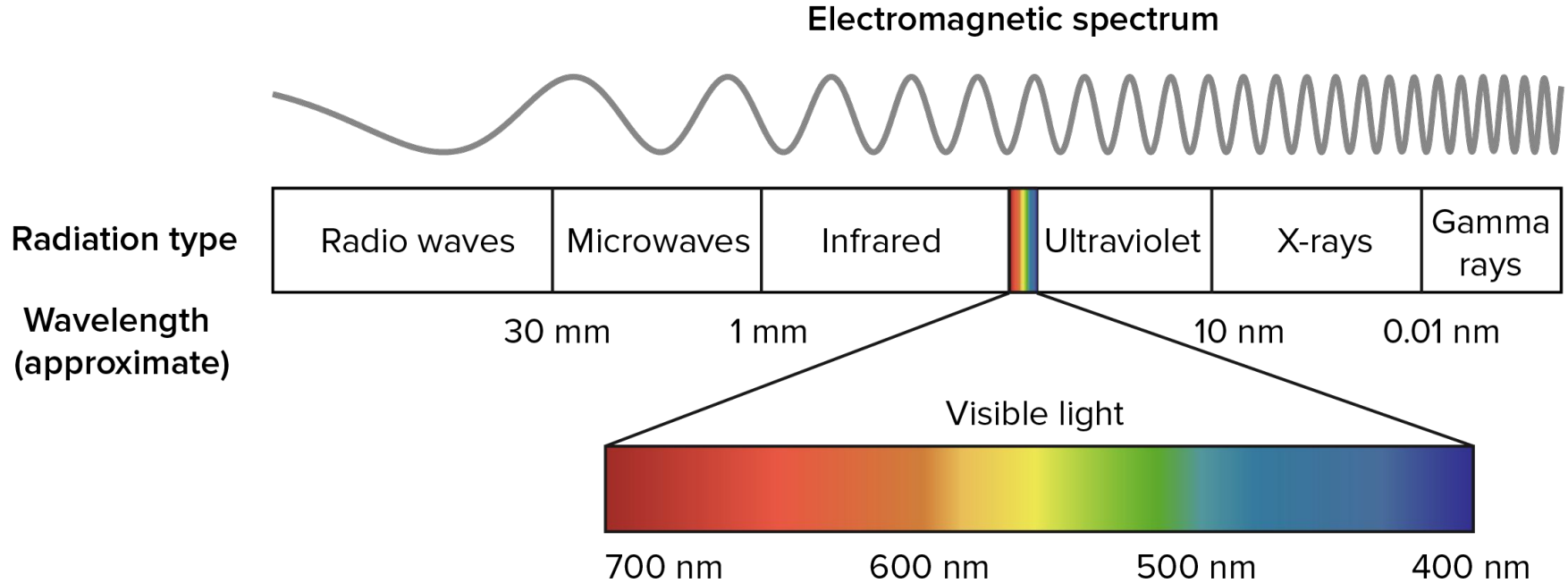


Anthocyanins





# Visible light spectrum



# Why do leaves change color?

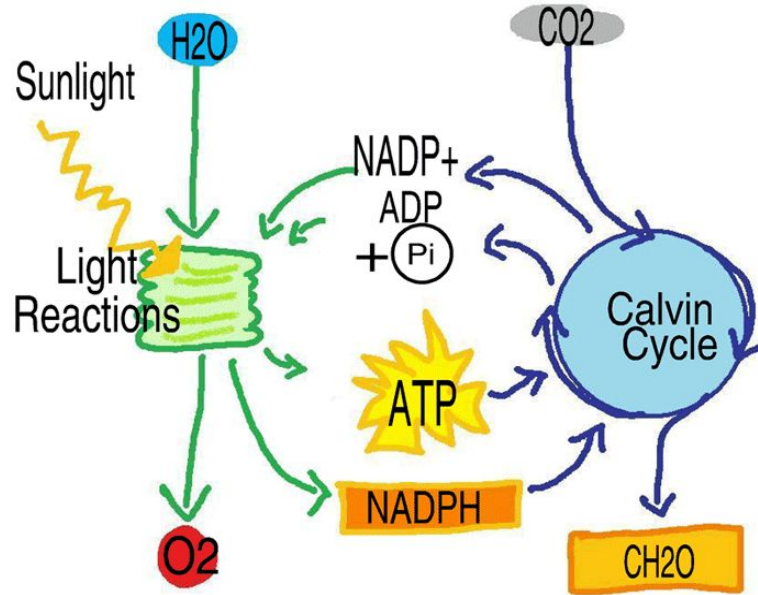
- ❖ As days get shorter and plants get less light, they make less chloroplast. Other pigments begin to reflect light.



# Photosystems and Photosynthesis

- ❖ Photosynthesis - Light reactions / Dark reactions
- ❖ Light collecting Pigments allow for the light dependent reactions to take place which allow for the light independent reactions to take place

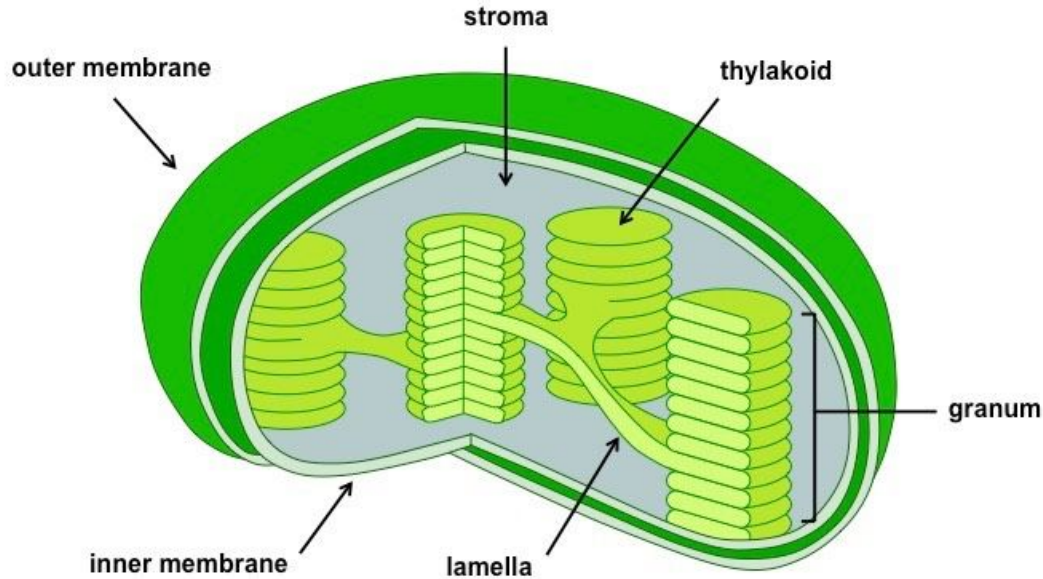
# Photosynthesis





# Light dependent reactions

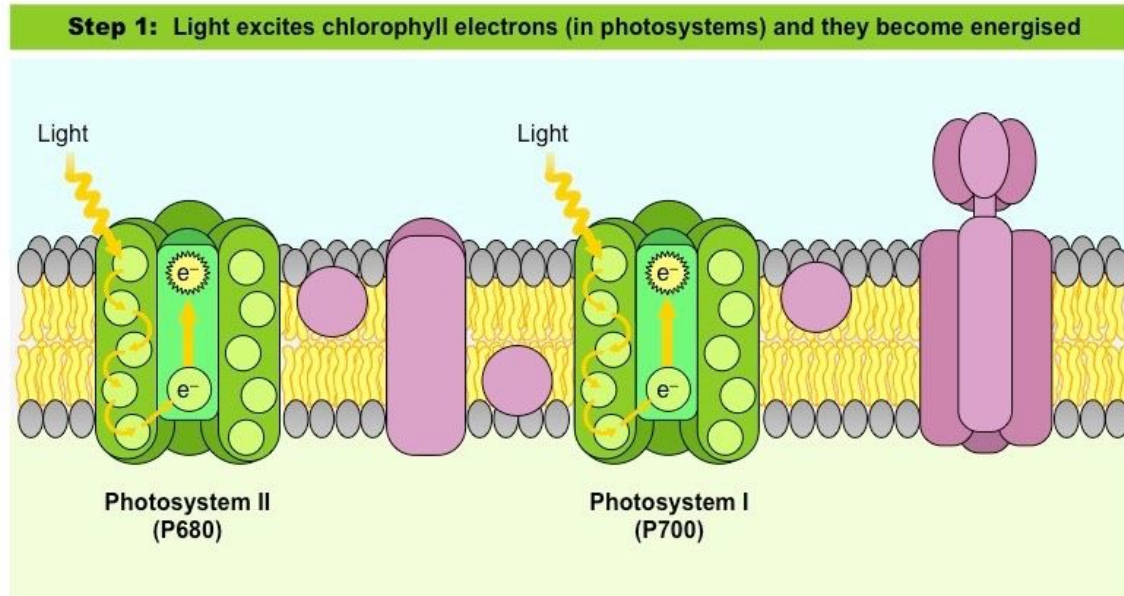
## ❖ Photophosphorylation - Photosystem II and I





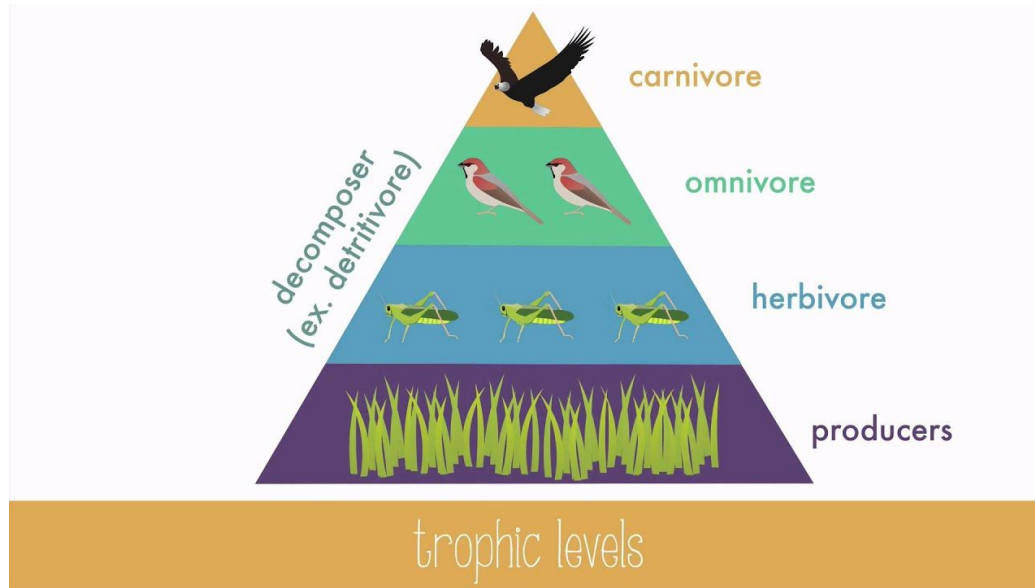
# Light dependent reactions

<https://www.youtube.com/watch?v=g78utcLQrJ4> - 4:30



# Pigments and Photosystems

- ❖ Pigments and Photosystems facilitate photosynthesis
- ❖ Photosynthesis supports the growth of ecosystems



# Bibliography

Anderson, Paul. *Photosynthesis*. *YouTube*, YouTube, 3 Apr. 2012, [youtu.be/g78utcLQrJ4](https://youtu.be/g78utcLQrJ4).

Biggs, Taryn. “Green Plants & Chlorophyll.” *Animals | Causes of Color*, [www.webexhibits.org/causesofcolor/7A.html](http://www.webexhibits.org/causesofcolor/7A.html).

Brenner, Laurie. “Why Is Photosynthesis Important for All Organisms?”  
*Sciencing.com*, Sciencing, 6 Dec. 2018,  
[sciencing.com/photosynthesis-important-organisms-6389083.html](https://sciencing.com/photosynthesis-important-organisms-6389083.html).



# Bibliography continued

Goodsell, David. “PDB101: Molecule of the Month: Photosystem II.” *PDB-101: Acetylcholine Receptor*, Nov. 2004, [pdb101.rcsb.org/motm/59](http://pdb101.rcsb.org/motm/59).

“Light and Photosynthetic Pigments.” *Khan Academy*, Khan Academy, [www.khanacademy.org/science/biology/photosynthesis-in-plants/the-light-dependent-reactions-of-photosynthesis/a/light-and-photosynthetic-pigments](http://www.khanacademy.org/science/biology/photosynthesis-in-plants/the-light-dependent-reactions-of-photosynthesis/a/light-and-photosynthetic-pigments).