

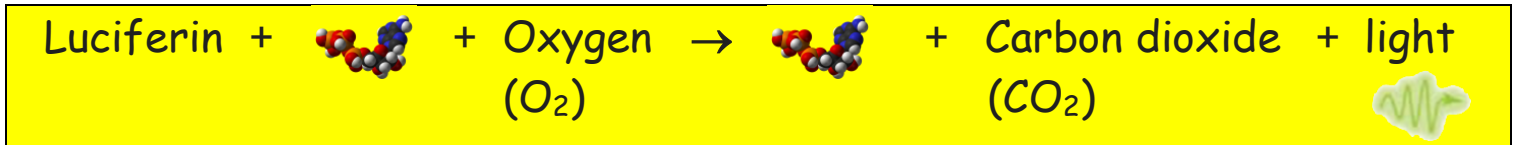
Bioluminescence, Fireflies



"Bioluminescence is a chemical reaction that happens within an organism's body that causes light."

– Coyote Peterson, *Brave Wilderness* (Glow Bugs!)

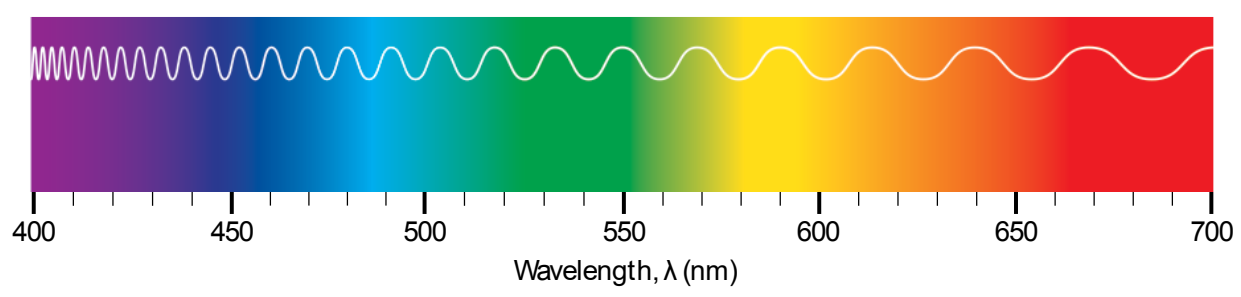


Bioluminescence occurs in many organisms, including some bacteria, fungi, plankton, fish, & insects. Firefly lights are some of the most efficient lights in the world – nearly 100% of the energy is emitted as light! The chemical reaction* (simplified) is:



<u>Entomology</u>	<u>Chemistry</u>	<u>Reaction notes</u>
<p>Family: <i>Lampyridae</i> (~2000 species)</p>	<p>Luciferin: C₁₁H₈N₂O₃S₂</p>	<p>* ⇒ simplified  ⇒ other molecules</p>
<p><u>Habitats</u>  ♦ forests, fields, & marshes..</p>	<div> </div> <p>Black = carbon White = hydrogen Blue = nitrogen Red = oxygen Yellow = sulfur</p>	<div> </div>
<p><u>Bioluminescence</u> <i>Communication</i> :</p> <ul style="list-style-type: none"> ♦ between Fireflies ♦ deter & warn predators <p><i>Cold light</i> :</p> <ul style="list-style-type: none"> ♦ does not produce heat! 		

Light from fireflies ranges from green (λ = 510 nm) to red (670 nm).



Etymology

Bio- means 'life' (from Greek: βίος)

Lumin- means 'light' (from Latin: Lumen)

-escence means "a (developing) state or action' (-esco)

References

- firefly.org
- kids.kiddle.co/Bioluminescence
- academicKids.com/Light
- academicKids/Bioluminescence