COSEE-West
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Fast Facts about Bioluminescence!!

• Bioluminescence (visible light made by living organisms) is created through a highly efficient chemical reaction involving luciferin (a substrate) and luciferase (an enzyme).

• Bioluminescence can be used by organisms for attracting a mate, finding food, or protecting themselves by using it to distract or blind a predator, or counterilluminate their body to blend in with their environment (same idea as countershading).

• Bioluminescence is different from:

phosphorescence (a delayed emission of light from a source that has been excited by light – like glow-in-the-dark toys),
fluorescence (like phosphorescence, but emission of waves at a higher energy, i.e. shorter wavelength, and emission ceases when the light source does),
iridescence (play of colors producing rainbow effects, as in soap bubbles) , and
triboluminescence (optical phenomenon where light is generated by breaking of asymmetrical bonds of crystal by scratching, crushing, or rubbing).

• Bioluminescence is chemiluminescence (light resulting from a chemical reaction) that takes place within an organism. The light from cyalume sticks (a.k.a. Halloween light sticks or glow sticks) is a form of chemiluminescence also, but utlizes a different chemical reaction than bioluminescence to produce light.

• Most bioluminescent organisms are marine (e.g. bacteria, ctenophores, squids, shrimps, fishes), but there are a few terrestrial (e.g. fungi, snails, earthworms, insects – like fireflies!) and freshwater organisms (e.g. limpets) that are bioluminescent as well.