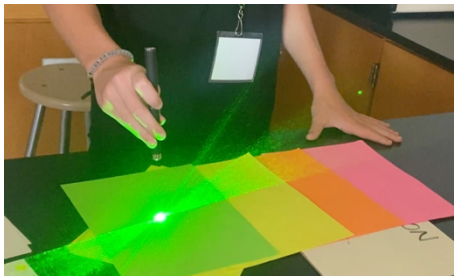
Let it Glow!

Learning Objectives

Students will:

- Recognize that light energy can be transferred to atoms resulting in atoms appearing to “glow”
- Recognize increased energy to atoms may be long or short term, but when the energy returns to normal, light is emitted.
- Understand that energy transformations can be natural or man-made.

Background: Things that glow are naturally engaging to students. Understanding why they glow can open many different avenues for students to investigate. From man-made objects to plants and animals, this phenomena can move students forward in understanding and identifying energy transformations.



The color of light seen by the eye is dependent on the frequency of the light being detected by the eye.

Investigation

Provide assorted items for students to observe using red, UV, and white light. Items may include glow in the dark stars or sticky balls, pony beads (UV and regular), white and fluorescent paper cut into small pieces, and/or highlighter pen ink
Students test items and compare how different colors (flashlights) affect different objects.

Teacher Notes: Light is quantized, which means it has specific values depending on the source of the light. Excitation of atoms by light corresponds to specific energy levels in the atom (quantization). Light with a shorter wavelength/higher frequency (ex. blue) can generally excite atoms to a higher state than lower frequency (ex. Red).This can easily be shown to students by light reflecting off of bright colored paper, golf balls, or being absorbed by UV beads and even certain vegetable oils.