



Newsletter

October 2017 | Light, Sound, and Waves

Dear Parents,

This month, our theme for Hands-On Science was *Light, Sound, and Waves*. Students learned about the way that different types of waves can transmit energy and information.

Students learned about how sound is created by vibrating molecules. To demonstrate this, students made their own drums by heating shrink-wrap over a cup to create a “drum,” inspired by a PBS documentary about the artistry and physics behind Japanese drums. Additionally, students explored the properties of light by splitting light into different wavelengths using PASCO spectrosopes. Students learned about the electromagnetic spectrum and the various different types of waves that make up light. Students also had the opportunity to create art with a fluorescent compound found in many highlighters called *fluorescein*, and learned about the science behind fluorescence and phosphorescence.

To demonstrate their understanding of electromagnetic waves, students in both campuses created mural posters depicting the various types of electromagnetic radiation and their common commercial uses.

Coming Up Next Month: **Food for Thought: The Science of Nutrition!**

Respectfully yours,

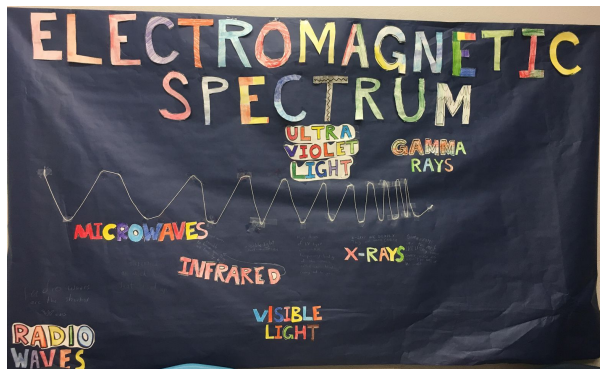
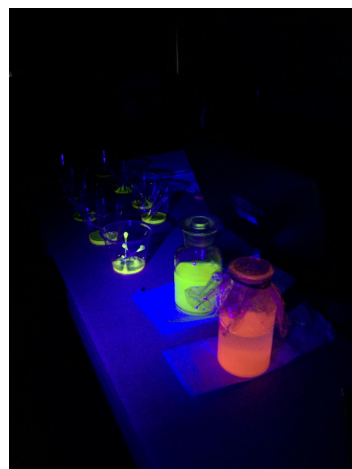


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NGSS Standards Covered This Month

PS4.A: Wave Properties

- A simple wave has a repeating pattern with a specific wavelength, frequency, and amplitude. (MS-PS4-1)
- A sound wave needs a medium through which it is transmitted. (MS-PS4-2)

PS4.B: Electromagnetic Radiation

- When light shines on an object, it is reflected, absorbed, or transmitted through the object, depending on the object's material and the frequency (color) of the light. (MS-PS4-2)
- The path that light travels can be traced as straight lines, except at surfaces between different transparent materials (e.g., air and water, air and glass) where the light path bends. (MS-PS4-2)
- A wave model of light is useful for explaining brightness, color, and the frequency-dependent bending of light at a surface between media. (MS-PS4-2)
- However, because light can travel through space, it cannot be a matter wave, like sound or water waves. (MS-PS4-2)

PS4.A: Wave Properties

- Waves, which are regular patterns of motion, can be made in water by disturbing the surface. When waves move across the surface of deep water, the water goes up and down in place; there is no net motion in the direction of the wave except when the water meets a beach. (*Note: This grade band endpoint was moved from K–2.*)(4-PS4-1)
- Waves of the same type can differ in amplitude (height of the wave) and wavelength (spacing between wave peaks). (4-PS4-1)

PS4.B: Electromagnetic Radiation

- An object can be seen when light reflected from its surface enters the eyes. (4-PS4-2)