Laser Blox

Specifications

Manufacturer: Laser Classroom

Price: Single Laser Blox $99; Set of three Laser Blox $199 to $275 (depending on wavelength); Whiteboard Optics Kit (3 green Laser Blox, set of 7 magnetic lenses and a mount) $575.

Website: *http://laserclassroom.com; Lesson plans: http://store.laserclassroom.com/free-light-experiments-and-lessons*

Grade level: Elementary through College

The set of Laser Blox classroom lasers that I received for review contained:

- Three wavelengths of Laser Blox—three green (532 nm), one red (635 nm), and one violet (405 nm).
- A durable plastic mount that can hold up to three Laser Blox. The mount is backed with industrial-strength suction cups, which allow it to be mounted to a whiteboard and other smooth surfaces.
- A set of acrylic lenses—six large, magnetic demonstration lenses: a plano-concave lens, a biconvex lens, a biconcave lens, a plano-convex lens, an equilateral prism, and a semicircular lens along with a foam-lined storage case.

My high school students and I found Laser Blox to be a unique and safe way to experiment with light. We began our exploration doing some of the free activities available on the website: gummy bears, microscope demonstration, color and light, and measuring the wavelength of light. Wavelength was a subject that I had previously not used with my general curriculum students because of the time needed to collect the data using a hydrogen gas discharge tube.

However, the Laser Blox made it possible for several groups to collect data at the same time, and we completed the lab within our 40-minute time frame with good results. The groups were able to see the beam/path of the light easily on the wall. This made data collection much simpler than when using the discharge tube.

The magnetic feature of the Laser Blox and the lenses is one of my favorite aspects of the set. Because I can stick them on my whiteboard, I can very easily show how light is able to travel and refract. In addition, the suction mount can hold three lasers, which allows them to be positioned in parallel paths without having to hold them in place. Because the lenses are backed with a magnetic backing, I could then attach different lenses to the whiteboard in the path of the light to show how the different lens shapes bent the light into different patterns.

These lenses are easy to move, allowing students to ask questions, propose changes, and see the effects quickly without a lot of unwieldy manipulation. Having my hands free allowed me to write notes and direct the students' attention to the phenomenon at hand, without setting pieces down and then trying to realign them afterward.

After using the Laser Blox in my classroom for several months, I moved beyond the free lessons on the website and the typical use of lenses to show diffraction of light. For example, I used the Laser Blox during elementary science night as a safe way to provide demonstrations to students in grades 3 and 4 during a class on colors and chemiluminescence.

During this lesson, the instructor demonstrated how tonic water can be used to create gelatin that glows in the dark. In addition, the students noticed that the lines within the gelatin were not as strong with some of the colors. This was demonstrated with the red Laser Blox and the green one. It led to a discussion about absorption of colors on top of the planned discussion about solutions and luminescence.

In addition, I have shared my set of Laser Blox with the other teachers in my department, with glowing reviews when they were grudgingly returned. Because of this, I recommend Laser Blox as a worthwhile purchase for a science department to support student learning and inquiry in biology, chemistry, and physics classrooms.

Jen Weible