

Simulate Interference...With Supplies that Last

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In the September 2001 issue of *The Physics Teacher*, David Chandler shared a “make-and-take” apparatus that used the (now very) old-fashioned perforations on the edges of computer paper to simulate interference between waves that have a wavelength equal to twice the distance between the holes. A recent and unsuccessful hunt for perforated computer paper necessitated the invention of a modernized approach shown in Fig. 1.

Using a drawing program to create pairs of waves in each of four colors scaled to their wavelength ratios produced the document shown online.² A trip to the copy shop converted the document into a color overhead. A visit to the local craft store to acquire a 1/8-in hole punch and some colored pencils, and we were back in business. We cut the waves into strips and punched holes at each peak and trough. Now, following Chandler’s method, the students can investigate questions such as, “What is the difference in the double-slit interference pattern when a green laser is used in place of a red laser?”

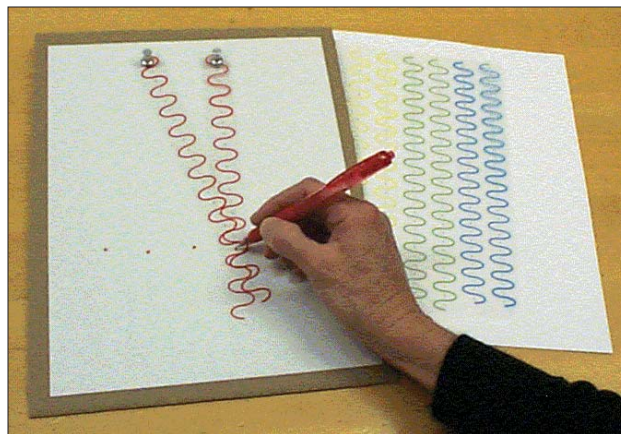


Fig. 1. Interference pattern from red light.

References

1. David Chandler, “Simulate interference ... while supplies last,” *Phys. Teach.* 39, 362 (Sept. 2001).
2. See <http://ftp.aip.org/cgi-bin/epaps?ID=E-PHTEAH-47-xxxxxx> to download an overhead transparency master with wavelengths scaled to their color.