

Abstract Submitted
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Learning physics by experiment: III. Lenses SAAMI SHAIBANI, Instruction Methods, Academics Advanced Scholarship (IMAAS) — Typical worksheets for a majority of laboratory experiments contain a standard result or formula that students are expected to prove is correct. This narrow perspective may then be compounded by a learning framework that depends too heavily on one particular approach. One solution to overcome such limitations has two key features: give students the freedom to explore, and combine this with a willingness to teach outside the box. The former is achieved here by following principles developed both historically[1] and more recently[2-4], while the latter is implemented via a spectrum of methods that are illustrated in an eponymous device[5]. Within that spectrum, the class activity reported here begins with numerical techniques as a precursor to establishing an analytical description of the concepts involved. The success of this philosophy is seen by the comprehensive nature of the learning experienced, even when the activity takes place in a non-physics setting and/or when students are non-STEM majors. [1] curricula devised by Nuffield Foundation; [2] Announcer, 34 (2), 164 (2004); [3] <http://meetings.aps.org/link/BAPS.2014.APR.D1.50>; [4] Bull Am Phys Soc, Vol 63 (in press); [5] Bull Am Phys Soc, Vol 63 (in press)

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