

Abstract Submitted
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Lab-in-a-box @ school: Exiting hands-on experiments in soft matter physics¹ KARIN JACOBS, MARTIN BRINKMANN, FRANK MÜLLER, Experimental Physics, Saarland University, Saarbruecken, Germany — Soft materials like liquids and polymers are part of everyday life, yet at school, this topic is rarely touched. Within the priority program SPP 1064 'Nano- and Microfluidics' of the German Science Foundation, we designed an outreach project that allows pupils (age 14 to 18) to perform hands-on experiments (www.labinabox.de). The experiments allow them e.g. to feel viscosity and viscoelasticity, experience surface tension or see structure formation. We call the modus operandi 'subjective experiments' to contrast them with the scientifically objective experiments, which pupils often describe as being boring. Over a dozen different experiments under the topic 'physics of fluids' are collected in a big box that travels to the school. Three other topics of boxes are available, 'physics of light', 'physics of liquid crystals', and 'physics of adhesion and friction'. Each experiment can be performed by 1-3 pupils within 10 - 20 min. That way, each scholar can perform 6 to 8 different small experiments within one topic. 'Subjective experiments' especially catch the attention of girls without disadvantaging boys. Both are fascinated by the hands-on physics experience and are therefore eager to perform also 'boring' objective experiments. Moreover, before/after polls reveal that their interest in physics has greatly advanced. The project can easily be taken over and/or adapted to other topics in the natural sciences.

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