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Towards concept-based instruction with blended learning in Labatorials DARIA AHRENSMEIER, J.M.K.C. DONEV, R.B. HICKS, A. LOURO, R. STAFFORD, L. BORVAYEH, R.I. THOMPSON, University of Calgary — The Department of Physics and Astronomy at the University of Calgary is currently remodeling the small group learning sessions of its large, multi-section first-year physics courses, in order to improve the student learning experience as well as their understanding of fundamental physics concepts. Traditional laboratories and tutorials are being replaced by "labatorials," weekly units that focus on one or two specific concepts closely linked to the content of the lectures. The design of the labatorials will be illustrated with examples, showing the range of various techniques and technologies that are being used to illustrate the physics concepts from various angles: mini-labs, demonstrations, computer simulations, conceptual and calculation problems. We will also discuss an approach that we are developing to assess the effectiveness of the labatorials through pre-and post-tests, which are administered at the start and end of each session.

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