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Interactive Modules for Integrating Computation into Introductory Physics Courses RICHELLE TEELING-SMITH, The University of Mount Union, CHRIS ORBAN, The Ohio State University — While there is a growing need to integrate computation into the physics curriculum at every level, incorporating new content into an already jam-packed introductory physics course is a delicate task that involves many choices that may have a big impact on student learning. We introduce a series of hour-long programming activities for classical mechanics and electricity and magnetism. These interactive modules resemble popular games such as “angry birds”, “pong”, and “bonk.io”. The activities are browser-based (requiring no software installation) and modular in nature so that they can be easily integrated into existing courses. We will describe the effort to integrate these programming modules into existing introductory physics labs and the ongoing effort to probe the impact of these coding activities on student conceptual learning through animated questions inspired by the Force Concept Inventory (FCI) and Brief Electricity and Magnetism Assessment (BEMA). These activities are currently being used at Mount Union and OSU Marion, as well in as in high school physics classrooms across Ohio. The STEMcoding Project is supported by the AIP Meggers Award and internal funding from OSU.

Richelle Teeling-Smith
University of Mount Union

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