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Progression of student feedback and computational skills in P-Cubed PAUL HAMERSKI, DARYL MCPADDEN, PAUL IRVING, MARCOS D. CABALLERO, Michigan State University — Projects and Practices in Physics is a sequence of two introductory, calculus-based physics courses, covering mechanics (P-Cubed) and electricity and magnetism (EMP-Cubed). Both P-Cubed and EMP-Cubed are flipped classrooms, where students read online notes and complete homework assignments at home and spend class time working on complex problems (or projects) in small groups. The projects are designed to be intricate and challenging, often asking students to model the situation using minimally-working VPython code. This requires students to work together to create a plan, make simplifying assumptions, and make choices as work through their solution. In addition to incorporating basic computational modeling, a key feature of P-Cubed and EMP-Cubed are that students get individualized feedback from an instructor on how well they understood the material and how they functioned in the group. We present the progression of the student feedback and development of computational skills through the P-Cubed and EMP-Cubed curricula.

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