

Abstract Submitted  
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**FlowGo: An Educational Kit for Fluid Dynamics and Heat Transfer** DOMINIC GURI, MERREDITH PORTSMORE, ERICA KEMMERLING, Tufts University — The authors have designed and prototyped an educational toolkit that will help middle-school-aged students learn fundamental fluid mechanics and heat transfer concepts in a hands-on play environment. The kit allows kids to build arbitrary flow rigs to solve fluid mechanics and heat transfer challenge problems. Similar kits for other engineering fields, such as structural and electrical engineering, have resulted in pedagogical improvements, particularly in early engineering education, where visual demonstrations have a significant impact. Using the FlowGo kit, students will be able to conduct experiments and develop new design ideas to solve challenge problems such as building plant watering systems or modeling water and sewage reticulation. The toolkit consists of components such as tubes, junctions, and reservoirs that easily snap together via a modular, universal connector. Designed with the Massachusetts K-12 science standards in mind, this kit is intended to be affordable and suitable for classroom use. Results and user feedback from students conducting preliminary tests of the kit will be presented.

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