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A Tale of Two Slinkies: Learning about Model Building in a Student-Driven Classroom CALVIN BERGGREN, Texas Lutheran University, PUNIT GANDHI, JESSE LIVEZEY, RYAN OLF, University of California, Berkeley — We describe a set of conceptual activities and hands-on experiments based around understanding the dynamics of a slinky that is hung vertically and released from rest. The motion, or lack thereof, of the bottom of the slinky after the top is dropped sparks students' curiosity by challenging their expectations and provides motivation and context for learning about scientific model building. This curriculum helps students learn about the model building process by giving them an opportunity to enlist their collective intellectual and creative resources to develop and explore two different physical models of the falling slinky system. By engaging with two different models, students not only have the opportunity to understand an intriguing phenomenon from multiple perspectives, but also learn deeper lessons about the nature of scientific understanding, the role of physical models, and the experience of doing science.

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