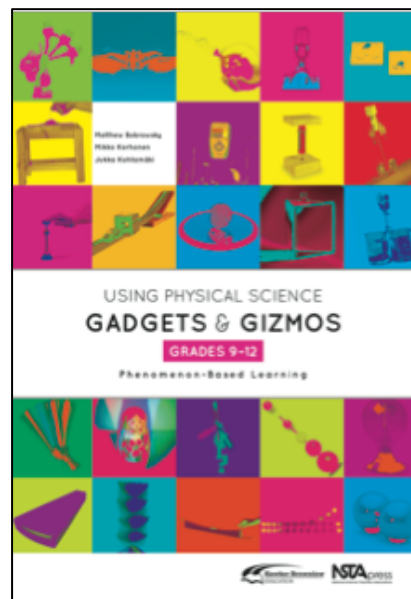


Using Physics Gadgets & Gizmos, Grades 9–12: Phenomenon-Based Learning

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Summary

What student – or teacher – can resist the chance to experiment with Rocket Launchers, Drinking Birds, Dropper Poppers, Boomwhackers, Flying Pigs and more? The 54 experiments in *Using Physics Gadgets and Gizmos, Grades 9–12*, encourage your secondary school students to explore a variety of phenomena involved with pressure and force, thermodynamics, energy, light and colour, resonance, buoyancy, two-dimensional motion, angular momentum, magnetism and electromagnetic induction.

The phenomenon-based learning (PBL) approach used by the authors is as educational as the experiments are attention-grabbing. Instead of putting the theory before the application, PBL encourages students to first experience how the gadgets work and then grow curious enough to find out why. Students engage in the activities not as a task to be completed but as exploration and discovery.

The idea is to help your students go beyond simply memorising physics facts. *Using Physics Gadgets and Gizmos* can help them learn broader concepts, useful critical-thinking skills, and science and engineering practices (as defined by the Next Generation Science Standards). And – thanks to those Boomwhackers and Flying Pigs – both your students and you will have some serious fun.

Other Resources

- *Using Physical Science Gadgets and Gizmos, Grades 3–5* (NST9129)
- *Using Physical Science Gadgets and Gizmos, Grades 6–8* (NST9235)
- *Uncovering Student Ideas in Physical Science, Volume 1: 45 New Force and Motion Assessment Probes* (NST1130)
- *Uncovering Student Ideas in Physical Science, Volume 2: 39 New Electricity and Magnetism Formative Assessment Probes* (NST9259)
- *Vocabulary for the Australian Curriculum: Science* (MRL6005)