A Different Take on Physics Labs

Looking for a new and creative way to have your students write a lab report? The October 2014 edition of the Physics Teacher magazine had an interesting article written by W. Brian Lane, a physics professor at Jacksonville University in Florida, entitled “Letters Home as an Alternative to Lab Reports.” First, Lane describes some of the common problems with typical physics lab reports and teachers’ frustrations with them. He summarizes a few other alternative lab reports and then goes on to outline how he does Letters Home (really emails) for lab reports.

Lane has his college calculus-based physics students send an email—they must CC him for grading purposes—to a family member or close friend back home who is unfamiliar with physics. He emphasizes that the reader should be able to learn something about physics from the letter/email. Students must include a description of the experimental set-up (including pictures or diagrams), an overview of the results, and what conclusions the student came to, based on their results.

By making students communicate physics concepts to a non-physics audience, Lane feels it helps the students internalize the concepts, and they learn a valuable skill: communicating important information through writing. The emphasis changes from task completion to thinking about what were the most important learning outcomes from this activity.

Since I teach at the high school level, I am considering having my students send an email to their favorite teacher at our school, instead of an email “home.” Another suggestion might be to send an email to their favorite science teacher from middle school, or an elementary school teacher that inspired them in science. Though I would not use this for all labs, it does provide a nice change of pace for both the students and teacher. I plan to do this several times per year.

Lane includes links to the “Letter Home Instructions” that he gives his students, and the rubric he uses to assess his students’ communication. (http://bit.ly/lhdocs)

(On a side note: the Physics Teacher magazine is just one of the benefits you receive when you become a member of the American Association of Physics Teachers (AAPT). This monthly magazine is full of creative teaching ideas, and you receive online access to all their previous issues. Members receive a discounted registration rate for AAPT conferences, which happens to be in San Diego this January 3-6! They also have many Physics education products available for which you receive a member discount. The membership rate is $151 per year for teachers, but only $47 for students.)

-Kevin Dwyer
PhysTEC Demo Day! October 9th 2014

Rand, with his shiny new car, getting ready to model motion.

Shin explaining the finer points of flying pigs (with a hand or two from Kayla).

Hey Rachael, is that what they mean by a “spin class”?

David spinning up a gyroscope.

Kayla making us think … “why do things roll?”

Mahmoud going for a spin!

Photos by Theresa Soliz!

Join us the 2nd Tuesday of each month for Physics, Fun & Food!