Beyond the Textbooks

So what is in your physics library? Yes, we all have more textbooks than we all know what to do with. Some of them are great and have some wonderful ideas and problems. But what do you do when you find yourself at a lose with the materials that the school has provided you and you are looking for something more? These are a couple of handy books that are useful for different areas in teaching physics.

**Tutorials in Introductory Physics** by L. McDermott and P. Shaffer

The physics education research group at the University of Washington has put out some great materials!! This collection of two books, a tutorial and homework book, are designed for an introductory college course in physics. While I have found that some of the activities within the book I cannot use, there are more than I can mention that I can use. I believe that the tutorials are designed for several instructors in the class to help out but a lot of the activities can be modified to be used with one teacher. If anything else, it is a helpful resource for sequencing of topics.

**Stop Faking It!** series by W. Robertson

This is a great series of books that cover many topics in physics. The material is broken down in an understandable way that both teacher and students can understand. What I like the most about the books is that the content is intertwined with demonstrations that are easy to do. The material for these demonstrations can be found at a common hardware store or around the house. If you are looking for a book to help with a concept that you are not that comfortable with or one to recommend to a student, this would be it!

**The Flying Circus of Physics** by J. Walker

Great book to find little tidbits of stuff! There are many short stories and interesting facts that can help to elicit conversations in class and help to get students interested in material. The book is also great to help answer the elusive question of, “why do we need to learn this?” (even though that question rarely comes up in a physics class because it is more like how many times am I going to use this?) I find that I will ask one of the questions within the book at least once a week and the students always have a great time trying to use their knowledge to come up with answers.

**Square Wheels** by D. Rathjen and P. Doherty

I don’t think that this is a common book in most teachers libraries which is a shame. It is a great collection of activities from the Exploratorium for both middle school and high school. As a high school teacher, I have found that several of the activities have made great demonstrations (the hydraulic arm and modulated coil to name a few.) Whether you teach middle or high school, there are some good ideas in this book.

**Assessment in Science** edited by M. McMahon, P. Simmons, R. Sommers, D. DeBaets, and F. Crawley

Many of us spend a ton of time on activities, labs and projects and forget that all of these are forms of assessment along with the tests that we give. This is a collection of articles that are helpful to think about when designing assessment for your students. The articles range from how assessment are formed from inquiry and rubrics to science standards. All articles are well written, research based, and get you thinking about why and how you give the assignments that you do.