

---

# **How to Use the “Particular Concepts” Manuals**

## **Becoming a Wizard of "Is"**

The Particular Concepts Physics manuals are about as hands-on and inquiry-based as you can get. They concentrate on observations, not theories. You really can get pretty far in this world without the "Why" (the sun came up even when the earth was "flat")! You **cannot** get far without the "Is".

### **Listen to the children**

Children are the ultimate observers until they are about twelve. They are the ones that point out the naked emperors! For those older than 12, observance of conventional wisdom can get in the way of observation of reality -- and discovery. Discovery is noticing what does not fit current "correctness"! So if you are older than 12, listen to your inner juvenile.

### **Watch the videos on the web site**

These do not have any explanations, to force observation. Enjoy the music, and you will open up that part of the brain that makes connections to the "Is"!

### **Take visual as well as written notes**

At the end of each manual, there are blank-lined and blank -gridded pages. Freely copy these! Use both the writing and visual parts of your brain to record your and your students' experiences. We drilled the manuals with standard three-hole binder holes, to keep the whole wonderful "mess" of your and your students thoughts under control!

### **Be unconventionally practical**

There is rarely just one way to do, or observe, or achieve something. Fill the worksheets out conventionally first, then challenge yourself and your students to do or record the activities differently (i.e. pictures instead of words).

### **An Example of how a Wizard of "Is" would do it!**

In the early 1950's, my Dad and other Nuclear Physics Doctoral candidates had to compare the areas of thousands of research data graphs without computers. Today's standard is to plug the data into calculus calculators, or to do the calculus by hand. My Dad compared the areas by hand, but with a twist: he drew the graphs on the same weight paper, using the same "X" / "Y" axes, cut out the area under the curves of the graphs with scissors, then WEIGHED the various areas against a known area, and applied the proportion to find the area.....**Now that's magic!**

---

©2010



Particular Concepts