Data Portfolio and Workshop Objectives and Enduring Understandings

MJ Young, 12/5/14

**Enduring Understandings – Data Portfolio**

* Data are collected using careful measurement and/or observation; instruments are calibrated to ensure accuracy (instrument calibration can also include observation such as several people observing a phenomenon).
* Data are organized in charts, tables, and/or graphs for data analysis that often includes recognition of patterns in the data.
* Claims are made based on data collected, which comprises the evidence for the claim; relation to a scientific principle is often included.
* Reasoning is provided when presenting the claim based on evidence that may include caveats, flaws, and possible alternative explanations based on the data; further research may be indicated for clarification particularly in relation to the associated scientific principle.

**Data Workshop Goals—from email sent 12/4/14:**

1. Apply introductory physics to successfully complete data investigations. (student hat)

2. Create, interpret and (or) explain the meaning of data plots or representations (e.g., CMS event displays). (student hat)

3. Select an activity and develop a plan for implementing it with your students (e.g., Masterclass data analysis) (teacher hat)

**MJY suggests (12/5/14):**

Toward the overall goal of providing content and pedagogy for implementing the use of data in the classroom, teachers will:

1. Apply classic physics principles to successfully complete data investigations. “Success” means ……
2. Identify and describe ways that data are organized for determining patterns in the data—data analysis.
3. Collect, organize and interpret data plots; make claims based on evidence and provide explanations; identify possible explanation alternatives and/or data limitations.
4. Develop a plan for taking students from their current level of understanding data use to the next or subsequent levels using workshop activities and/or ideas from the workshop. (Based on what currently teach, level and expected student achievement level—one class.)