

COMPILATION: use of data tables on whiteboards

(First read the compilation "Whiteboarding; identifying the model". Although David Hestenes points out that usually a data table shouldn't be put on a whiteboard because the numbers don't reveal the model, occasions exist when data tables are effective. - Jane J.]

Date: Sat, 3 Aug 2002
From: Bob Baker <bob.baker@WORLDNET.ATT.NET>

Early in the year my students usually post their data, 3 to 10 data points, on their whiteboards. Regular physics and conceptual physics students often have trouble collecting good data. The students do not use a cookbook for the experiment and usually only get one or two attempts to collect 3 to 10 data points. Their data collection accuracy is often suspect.

Putting 3-10 data points on the whiteboard allows the students to see the flow of data to graph, graph to specific formula, specific formula to general formula, and graph and general formula to concept. If there are obvious data errors on a group whiteboard, we can quickly identify the errors and move on to the next whiteboard for appropriate analysis. Therefore, early in the year, I think it is important for regular physics students and conceptual physics students to show their data on the whiteboard.

Date: Sat, 3 Aug 2002
From: Margaret Furdek <m_mfurdek@POWERWEB.NET>

Some of you might find how we deal with data tables helpful.

Classes are composed of 8 groups. Since many of the graphs will be so similar, I don't have all groups present for every lab ... to save time. I occasionally assign two groups to present JUST their data table and columns of calculated values. "Data table" groups present first. They discuss their procedure in more detail than later presenters. Precision of measuring devices is included along with support for significant figures in recorded data and calculated values. The remaining presenters then only mention significant variations in procedure and instead stress the analysis of the graphs.

We do this early in the year and sporadically thereafter. Refresher discussions regarding range of data, precision of instruments, and significant figures is well received. It is apparent that some students (not all) feel LEFT OUT if they don't get to present. My students accept their turn NOT presenting if everyone has to suffer through it in turn.

Also, the only tick marks and numbers on our WB graphs are zero and the maximum value used in data collection. This gives the audience a quick idea of the range of data employed. It's fast, easy and communicates more than no numbers at all.

Date: Sat, 3 Aug 2002
From: Michael Brame <stlscience@HOTMAIL.COM>
Subject: data tables on whiteboards

During the first part of the year I conduct very basic measuring activities (e.g. length, area, volume from the Modeling Physical Science (MPS) materials). I require students to show their data tables on their whiteboards. This fulfills two purposes: students practice making good data tables, and they are able to compare their results with other students' data, which provides an opportunity to discuss measurement technique and errors. Significant digits [are easier to deal with in this situation.] Students seem more ready to recognize the need to truncate the value in the calculator when faced with writing eight digits in a small box on a whiteboard.