

## *on Density*

I asked a total of 6 students in 2 classes what they know of density. What I got instead was a recollection of experiments they had done. It is the experience of these on which I feel my students can build. In fourth grade they had chunks of pumpkin that had to sink or float. In sixth grade they made aluminum foil boats to see how many pennies could be put in before sinking. I got the feeling they hadn't learned much about density per se, but a lot about what floats and what doesn't. Their discussions of these two experiments as well as one student's observations of toilets let me know the students understand the concept of floating and sinking, but lead me to believe they may associate floating or sinking with how heavy something is (instead of taking size into account).

From my discussions with the students, I learned that they remembered far more of what they did than of what they were lectured to about. The students did not seem to be very familiar with the vocabulary surrounding density, but when I got them talking about it they were familiar with the concepts. This lets me know that they have a good (though foggy) experiential framework on which to build from their prior lab activities.

In translating this into my lessons, I will know that I need to give them the vocabulary, and that demonstrations/labs will be a good way to give them information that will stick because it will build on what they have done before and keep their interest.

We are learning that inquiry starts with experiments and goes on to definitions of terms and standard theories. The experience

*December 8, 2003*

*Summary of Student Conversation*

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base of students in an inquiry-based classroom must therefore be very important. The sub-unit below is not inquiry based, but it is inquiry like in many important ways, going from experiences to standard concepts. I feel that having a good grasp of my students prior experiences as well as their prior knowledge is important in this endeavor.

The sub-unit I have based on this information can be found here: <http://www-personal.umich.edu/~salinay/LessonPlans/Density/>