

## *Critique of My Teaching*

### **My 3-Day Lesson Plan**

The [3-day lesson](#) I chose to videotape was on the planets<sup>1</sup> (see the clip entitled "The Plan" for the lesson plan as I gave it to the students on the first day). I conducted the lesson October 14-16, 2003. I intended for it to be an introduction to a unit I was hoping to do this winter on the features of [planetary crusts](#):<sup>2</sup> volcanism, earthquakes, and glaciers. I'm going to describe the unit from two points of view: content area and subject skills. I'll do content area first.

The content objective of this 3-day lesson was a review of the planets for the MEAP. This was met by having the students research 3 planets themselves (the original goal was four) where one would be Earth (that we did together) and the other two they could choose. (The fourth was to be a planet or moon of their choosing, and some did choose to do that.) They were working on this in groups, such that each group covered all nine planets. It was clear that groups did share information about the different planets among themselves while working on the research. On the third day, they reviewed all nine planets in a variety of ways: every student had five minutes on a GeoSafari to practice

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<sup>1</sup> The lesson plans for this 3-day sub-unit can be found here: <<http://www-personal.umich.edu/~salinay/LessonPlans/Planets/>>. I do hope you take the time to take a look at the lesson plans, because they go into more detail than you get in a 10 minute video-clip.

<sup>2</sup> The lesson plans for the entire unit can be found here: <[http://learnweb.harvard.edu/ccdt/design/design/edit\\_design.cfm?id=567BE09A-3DA1-49A4-B744285F3C7DD709&exp=exp\\_Blank,exp\\_GT,exp\\_OA,exp\\_PU,exp\\_Resource,exp\\_Standards,exp\\_Technology,exp\\_TL,exp\\_UG&v=c](http://learnweb.harvard.edu/ccdt/design/design/edit_design.cfm?id=567BE09A-3DA1-49A4-B744285F3C7DD709&exp=exp_Blank,exp_GT,exp_OA,exp_PU,exp_Resource,exp_Standards,exp_Technology,exp_TL,exp_UG&v=c)>. If you have trouble accessing it, please eMail me and I'll make sure you are given access.

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identification of the planets, all students had the opportunity to play Planetary Jeopardy as a class (although only a few classes were allowed to do so due to behavior problems on the Friday), students were offered an opportunity to generate questions for planetary jeopardy (although only one student wound up doing so), and finally there was a group quiz for those classes which did not play jeopardy. I felt this gave students a multitude of opportunities to reinforce their growing knowledge of the planets.

In addition to the content, there were several things going on behind the scenes. You'll notice on the handout that each section is labeled according to Bloom's Taxonomy. I did a lesson on Bloom's Taxonomy earlier in the semester, and so I used this as an opportunity to reinforce the idea. In addition, I introduced the concept of units and unit conversion. At first I let them work at this themselves, giving assistance when needed. Later on, I made up a conversion cheat sheet because it was clear that this was a question that was coming up with some regularity. Another concept I worked on with them was writing a good report. Most of my support for them came in the form of the feedback I gave them on their essays. This is a skill we will be working on throughout the year. Finally, we reviewed bibliographies and students were asked to keep track (by means of a check mark) of the sources they used.

### **What did I like about my teaching?**

There are many things I like about my teaching: the way I greet students individually, the way I'm always working on several skills with each student in each lesson, the way I interact with individual students, the variety of things I have available for

students to do if they finish early, and how I am always stretching their vocabulary.

I like the way I greet them when they come in (see two "Welcome to Science" clips). I always make an effort to greet each student individually with "Welcome to science!" and a little bit about what they will be doing that day (usually "There's a great journal on the board!" if there is one that day or "Welcome to the starship SeaDragon!" to get them in a spacefaring mood for day one of this lesson). I have also done variations to "Welcome to science!" in other languages (Hungarian or German so far). I feel this personal greeting to the student is important for rapport as well as to make each student know they are welcome to be in this classroom.

I like the way each exercise teaches more than one thing (see the clip "The Earth"). In this clip, I seem to be asking the students about the distance between the sun and the Earth, but really I am making them think about which units they are comfortable with, what different units mean, and in the end how to convert from one set of units to another (not all of that is on the clip, but it was a discussion which built through the course of that worksheet).

I also like the way I help students (see clip on "Helping a Student"). In this clip, you see me doing several things. First, the student is asking about how to figure out what the crust of the planet is made of. She is looking in the table on the side of the [article](#),<sup>3</sup> and I redirect her to read the actual article text. She then asks if she's done other questions correctly, questions whose answers she did get from the table. In this case, I help

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<sup>3</sup> All of the articles which students used for this assignment were found on this web site: <http://solarsystem.nasa.gov/planets/index.cfm>.

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her to recognize that the units of her answer are wrong. In this case I give her the conversion factor, because the main thing I want her to see and remember is that she must convert. Later, I gave all the students a list of conversions. Finally, I am quick at answering questions and moving onto the next question. I did get a little monopolized by one student (which was clear from watching the video), so I need to work on this skill a little more too.

Another thing that I thought was good was the variety of things I had for students who got done early to work on to continue learning and not waste time (an extra credit report on a moon or planet which several of the students did, the GeoSafari's which all the students did, and writing jeopardy questions which one student worked on).

Finally, I like the way I am always challenging my students to increase their vocabulary. I kept a running list of "Big Words" on the board: words the students had questions about which I explained to them. These became the vocabulary words for the week. In the clip from "The Journal" on day 1 you will see the word arduous being added to this list.

### **What would I like to change?**

I wish I could keep students more on task. They frequently look busy, but when I correct their papers there is nothing there. This was incredibly frustrating to me. One student in particular had me at her desk answering questions for the majority of a period, but when she was done she only had answered one question despite the fact that we did 12 together on the board!

Another thing which disappointed me was that while units were such a big part of this assignment, when we did a unit on weather students did not remember Kelvin (the unit in which planetary temperatures were given in this unit) when asked for units of measurement, even when I prompted them with "We had this in the planets unit." and "It starts with a K." I want to work on getting my students to remember information and transfer that information from one topic to another.

### **How does my teaching match my teaching philosophy?**

I am using current changes in science (see "Shenzhou V Journal" clip). If something happens in science, I make it clear that such events are worthy of stopping class for, or rather, such events are what class is really all about.<sup>4</sup>

Students are getting their information directly from NASA as opposed to from their text books. In some cases they are making their own conversions as I showed some students how to take two things they knew (Earth is 93 million miles from the Sun and Earth is 8 light minutes from the sun) to create a conversion (Mars is 12 light minutes from Earth, 12 is 1.5 times 8, so Mars is  $1.5 * 93$  million miles from Earth).

### **How did I help students learn?**

There were two primary ways that I helped students learn: I went through the worksheet with them the first day (see "Earth" clips) and went around, helping them with conversions by

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<sup>4</sup> Jake, you were asking about alternatives to the star party which I gave later in the semester. I think you would consider this a valid alternative activity. It hadn't been planned: it just happened that I learned of it in time to change the journal for the day and to emphasize that that very night they could see the first Chinese person in space if they would only lookup at the right time.

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going around (see "Helping a Student") and making a cheat sheet for them. I've already talked substantially about both under the things that I like about my teaching, so I won't repeat myself here.