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Linking Abstractions in Math to the Real World

Valerie J. Huff
The College at Brockport

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CMST SCOLLARCITY Lesson Plan Template-Lesson Plan using **TI Technologies**
(Due Tuesday, July 27th)

Submit as hard copy AND electronically through ANGEL

Name: Valerie J Huff
Grade level(s)/Subject taught: 10-11/Algebra II Honors
Objectives: (Remember... <i>How will the modeling tool help the student better learn the objective?</i>) Students will be able to gather data using CBR/CBL equipment and accurately interpret data using tables, graphs, and equations; working in pairs and as part of a group.

Items to include in your TI Technologies lesson plan: (use *your* area/discipline/concepts).

For the math teacher:

1. *Write the Mathematical Concept or “key idea” that TI Technologies will be used to teach: (e.g. Students use mathematical modeling/ multiple representation to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships)*

Students use mathematical modeling/multiple representation to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships. Students use measurement in both metric and English measure to provide a major link between the abstractions of mathematics and the real world in order to describe and compare objects and data. Students use patterns and functions to develop mathematical power, appreciate the true beauty of mathematics, and construct generalizations that describe patterns simply and efficiently.

and/or...

For the Science teacher:

- 1b. *Write the Science Concept or “key idea” that TI Technologies will be used to teach: (e.g. Organisms maintain a dynamic equilibrium that sustains life).*

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Using TI CBR/CBL and TI graphing calculators, I plan on having my students...

I thought I would begin the class with some pictures of functions and ask students to match the pictures with their appropriate category. I would have students brainstorm real world situations that could be represented by the graphs of the functions.

I would then assign the students in pairs, an experiment to do, using written instructions from the lab activities using (1) Ball bounce (2) Slinky (3) Capacitor & resistor. The students will be asked to keep the functions in mind while working on their experiment. They will be expected to have the experiment completed and all data properly stored in their calculators. This should take one class period.

On day two of this lesson, partners will get together again and make sure they have accurate data. They will then produce a mathematical equation to represent their data, as well as an explanation of how they arrived at their equations. They will be expected to produce a table and graph of their model (calculator screen picture is ok). I will then ask the students to come together in three groups; (1) ball bounce (2) Slinky (3) Capacitor & resistor. They will be asked to compile and prepare all their findings and make them available for the rest of the class. Forms will be provided to complete their findings, since each student is required to submit a partner and group report.

On day three, each large group will present their experiment and data conclusions. Other students and I will be questioning group members about the experiment, as the understanding and participation in the group effort are part of their grade.

This may take more than 3 days, only time will tell.....

RUBRIC 100 points

- [25] **Successful completion of partner exercise**
Includes accurate graph, tables, and equation

- [25] **Successful completion of group exercise**
Includes accurate graph, tables, and equation

- [25] **Successful participation in group presentation**
Contributes to presentation or answers individual questions accurately

- [25] **Successful completion of prepared forms.**
Includes a narrative on how the experiment helped to learn more about functions