

**Technology Integration
Teacher Post-Observation Questions**

Teacher: David E. Haines		
Subject: Algebra 1B	Period: 3	No. of Students: 28
Observer: None		Date of Observation: 10 May 02
Length of Class: 90 minutes		No. of Computers Used in Lesson: 16

<p>Brief Lesson Description: Using TI 83 Plus Calculators to create designs by using transformations of the graphs of equations.</p>	<p>Curriculum Standard Applied: 3.18 Describe the transformation of the graph that occurs when coefficients and/or constants of the corresponding linear equations are changed.</p>
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To what extent do you feel this technology lesson increased the depth of student understanding and learning engagement for this curriculum standard? Algebra students had to apply what they learned about the effect of changing coefficients and constants to solve the problem of creating a design that matched those created by the art students. They had to demonstrate their understanding of the effect of changing a coefficient by choosing the appropriate equation to create the design and then shifting the graph of the equation to create the pattern they were trying to duplicate.

How have students been impacted by using technology for this lesson? Has the efforts to integrate technology impacted student achievement, had no impact, or negatively impacted student achievement?
The students routinely use their calculators to graph equations in our Algebra 1B class. This lesson had a positive impact by integrating the use of their calculator with Word and PowerPoint to create a method of sharing their work with other students.

What did you expect to see in your classroom that would indicate effective use of technology? Did it happen? If so, why? If not, why not?
Students did not limit themselves to using the basic equations of linear, quadratic, cubic, and absolute value functions. Once they understood how changes in coefficient affected equations, they generalized what they had learned to manipulate other functions they have on the calculator, such as trigonometric functions, to obtain more creative shapes that produced more interesting designs. They were using the graph of the sine and cosine function to create designs without ever having been taught about trigonometric functions—a topic that is taught much later in their mathematics curriculum.

Identify how this technology lesson has impacted your ability to teach this curriculum standard. Has the experience been positive or negative? Why?
 The technology has enabled me to allow students focus on the reasons that changing coefficients and constants change graphs rather than spending countless, tedious hours trying to draw graphs manually.

Did your professional development training prepare you to implement this technology lesson? If so, how? If not, why not?

Yes, during the professional development session, we learned the basic format for creating a project-oriented lesson. The basic format I learned in the professional development class was helpful in creating this lesson.

Check all that apply.

In preparing and implementing this lesson, I used the following types of technology:

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| <input checked="" type="checkbox"/> Word | <input type="checkbox"/> Excel |
| <input checked="" type="checkbox"/> Internet | <input checked="" type="checkbox"/> e-mail |
| <input checked="" type="checkbox"/> PowerPoint | <input type="checkbox"/> gradebook |
| <input checked="" type="checkbox"/> video/audio | <input type="checkbox"/> CDRom |
| <input type="checkbox"/> Access | <input checked="" type="checkbox"/> Other: Maple 5.0 (math) and TI-83 Plus Graph Link |

Engaged Learning Indicators:

Indicator	Evidence
Did your students take responsibility for their learning with technology? Did they meet, exceed, or not meet your expectations?	<input checked="" type="checkbox"/> Yes Students were creative in their use of technology. <input type="checkbox"/> No
Did your students develop, define and/or modify problem-solving strategies using the technology basics you gave them?	<input checked="" type="checkbox"/> Yes Students went beyond the requirements of the assignment to explore new equations. <input type="checkbox"/> No
Did learning with technology energize students? Did they remain motivated? Did they take pride in their work?	<input checked="" type="checkbox"/> Yes Students enjoyed using technology and were very creative in their designs and presentations. <input type="checkbox"/> No

<p>Did your students work collaboratively to understand the technology task to plan, implement, and evaluate their assignment using technology?</p>	<p><input checked="" type="checkbox"/> Yes Students worked in teams to complete this assignment. <input type="checkbox"/> No</p>
<p>Did the technology tasks your students accomplish bear resemblance to real world problems in the home and/or workplace?</p>	<p><input checked="" type="checkbox"/> Yes Students were using technology to solve a problem in which they had to accomplish specific tasks while operating with specific restraints. <input type="checkbox"/> No</p>
<p>Were the technology tasks challenging to the students? Did they need to stretch their thinking skills to be successful?</p>	<p><input checked="" type="checkbox"/> Yes They had to think about how they could manipulate the equations to obtain their desired pattern. <input type="checkbox"/> No</p>
<p>Were skills other than those using technology required to accomplish this technology lesson?</p>	<p><input checked="" type="checkbox"/> Yes They had to work cooperatively to accomplish a project. <input type="checkbox"/> No</p>

Additional Comments:

Students use TI 83 calculators daily in our algebra class. This lesson allowed students to integrate several types of technology. I also allowed them to see that broader applications of mathematics in the other disciplines by working with art students in an uncommon way.