SOUTHWEST CAREER AND TECHNICAL ACADEMY

Felicia Nemcek, Craig Statucki, Angelo Pappano
CTE PATHWAYS
PROFESSIONAL ACADEMY
DESIGN ACADEMY
QUALITY ONGOING PROFESSIONAL DEVELOPMENT
PROJECT-BASED LEARNING
STUDENT-CENTERED LEARNING
PARTNERSHIP OFFICE

• Coordinates activities between the program areas and their respective industry partners

• Advisory Boards

• Provide campus tours to members of industry, educational leaders, and other dignitaries
COLLABORATION AND COMMUNICATION
<table>
<thead>
<tr>
<th>AVAILABLE TECHNOLOGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Computer Labs</td>
</tr>
<tr>
<td>• Laptop Carts</td>
</tr>
<tr>
<td>• iPods and iPads</td>
</tr>
<tr>
<td>• Digital Cameras</td>
</tr>
<tr>
<td>• Video Cameras</td>
</tr>
<tr>
<td>• SMART Boards</td>
</tr>
</tbody>
</table>
EMBEDDING TECHNOLOGY

Google Apps for Education

edmodo
IPAD USAGE

• 88% of the students used iPads outside of school for educational purposes
• Students averaged 14 hours per week using the iPad for educational purposes
• Most Popular Uses: Internet, Calendar, Notes
COLLABORATION AND COMMUNICATION

Digital Game II

Spring PBL Showcase Prep

When: Monday, Apr 9, 2012
Objective: SWBAT demonstrate knowledge of coding concepts.
Activities:
1. Read http://goo.gl/lyVl
2. Review of Spring PBL
3. PBL Presentation and Showcase Prep

Homework:
1. Dependent on group tasks.

Spring Break

Sharing settings

Paste this link in email or IM:
https://docs.google.com/a/swcta.net/document/d/1CFBfgTjol05qvu5g-3ef6YyXIZCx.

Permissions:
People at Southwest Career and Technical Academy who have the link can view
Marcos Ontiveros (you)

Add people: Choose from contacts

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GOOGLE USAGE

Total Docs Created By Type

- Documents
- Spreadsheets
- Drawings
- Presentations
- Forms
- Cloud Connections

2012-09-12
- Documents: 21804
- Spreadsheets: 402
- Drawings: 90
- Presentations: 1222
- Forms: 484
- Uploaded Files: 5556

6 months - 3 months - 1 month - 2 weeks - 1 week
ENTERTAINMENT
ENGINEERING
HISTORY OF THE GUITAR PROJECT
FOCUS ON STEM:
SCIENCE

ANALYZING FREQUENCIES
OF A GUITAR STRING
SCIENCE COMPONENTS:

• The Decibel Scale
• Introductory Wave Behavior
• Determining String Tension Using Measured Frequencies
• Standing Waves on a Guitar String
• Density and Buoyancy in the Swirl Dipping Process
FOCUS ON STEM: TECHNOLOGY

16 GUITAR NECKS BEING CUT ON A SHOPBOT CNC MILL
TECHNOLOGY COMPONENTS:

• 2D/3D CAD Drafting to Create the Guitar Shape

• Power Tool Safety and Operations

• Setup and Operation of a CNC Machine

• Cutting Fret Boards Using a Laser Engraver

• Paints, Finishes and Paint Booth Operations
FOCUS ON STEM:
ENGINEERING

THE STEM GUITAR PROJECT
GANTT CHART
ENGINEERING COMPONENTS:

• The Engineering Design Process

• Gantt Charts and Project Timelines

• Tracking Cost and Efficiency

• Innovating Creativity into Existing Designs
FOCUS ON STEM: MATHEMATICS

Analyzing Frequencies of a Guitar String

\[ p_c = \frac{(L - p_f)}{17.817} + p_f \]
\[ p_c = \frac{(24'' - 0'')}{17.817} + 0 \]
\[ = \frac{24''}{17.817} \]
\[ = 1.347 \]

\[ L = \frac{T_k T_o C}{T_i} \]
SCALABILITY

- Project Length
  - 2 Months to 1 School Year
- Grade Levels
  - After-school Club through College Elective
# Achievement Data

<table>
<thead>
<tr>
<th>11th Grade AYP Proficiency Exams</th>
<th>2011</th>
<th>2012</th>
<th>CCSD Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>90.83%</td>
<td>91.46%</td>
<td>N/A</td>
</tr>
<tr>
<td>Math</td>
<td>93.51%</td>
<td>93.6%</td>
<td>81.51%</td>
</tr>
<tr>
<td>ELA</td>
<td>95.78%</td>
<td>96.04%</td>
<td>76.92%</td>
</tr>
</tbody>
</table>
THANK YOU!

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www.swcta.net