STEM AND NAPE IN THE PARK CITY SCHOOLS

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KEY GAPS AND ROOT CAUSES IDENTIFIED

• Gap Analysis
  • Need Assessment
  • Team Approach
  • Higher Ed, Businesses, and Public Ed working together
KEY GAPS AND ROOT CAUSES THROUGH GAP ANALYSIS

• Gaps
  • Lack of focused CTE/STEM pathways
  • Underrepresentation of females and minorities in STEM and CTE courses

• Root Causes
  • Change of work force due to technology revolution
  • Lack of marketing to students and parents by business, higher ed, public education
  • Narrow focus on traditional college prep
  • Course conflicts based on state required credits needed
  • Student fear of course rigor
  • Courses viewed as not applicable for those students
  • Current State CTE requirements do not reflect job expectations
## DATA COLLECTION AND ANALYSIS

<table>
<thead>
<tr>
<th>Course</th>
<th>14/15 % female enrollment</th>
<th>15/16 % female enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Program</td>
<td>0</td>
<td>12</td>
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<tr>
<td>Biotechnology</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>Calculus A/B</td>
<td>39</td>
<td>44</td>
</tr>
<tr>
<td>Calculus A</td>
<td>20</td>
<td>39</td>
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<tr>
<td>Physics</td>
<td>35</td>
<td>36</td>
</tr>
<tr>
<td>Engineering Tech Design</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Pre-engineering</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Architectural Design</td>
<td>0</td>
<td>31</td>
</tr>
<tr>
<td>Construction</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>Robotics</td>
<td>13</td>
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</tr>
</tbody>
</table>
FOCUS GROUP DATA

• Students like the variety of course offerings, but want to know more about specific careers

• Students like and want an emphasis on critical thinking

• One student commented that he feels challenged and pushes himself to take higher classes, even at the expense of a lower grade

• Two students, one math and one environmental science, wanted to drop the classes but stayed in because teachers recognized their potential

• Students feel like the Caucasian students in Honors classes write papers the night before while Latinos have to work at those
SURVEY DATA

Student Expectations
• All students expect to do very well or pretty well in English
• 10% see themselves not doing very well in Math
• 7% see themselves not doing very well in Science

21st Century Skills
• 82% confident in the ability to produce high-level work
• 80% confident that they can set their own learning goals
• 88% confident that they can work with students from other backgrounds
• 61% confident in managing their own time
SURVEY DATA—CAREER INTERESTS

• % of students interested/very interested in:
  • Medicine—58%
  • Physics—51%
  • Engineering—49%
  • Environmental Science—35%
  • Chemistry—35%
  • Computer Science—32%
  • Energy—24%
  • Mathematics—17%
WORK PLAN STRATEGIES

1. Created STEM pathways for the 16/17 school year and a plan to communicate those to all stakeholders, to include parents, community members, and businesses.
   • Pathways created in Business, Engineering, Digital Media, Health Science

2. Implemented a STEM Career Fair with an emphasis on providing information to female and Hispanic students and their parents.
   • Held April, 2015, 150 students and parents--plans underway for this year’s STEM Fest

3. Developed/implemented STEM courses and curriculum for elementary and middle school students to encourage interest in STEM subjects for all students.
   • Engineering is Elementary, Coding, Science Coordinator (focus on 6-8), STEM Endorsement program, CTE STEM grant (7th and 8th), Science A to Z and Engineering Adventures for after-school and summer school programs
MEASUREMENT AND EVALUATION

• Increased enrollment in STEM courses and Pathways at the secondary level—focus on females and minority students

• Increased awareness of STEM careers and opportunities with staff and parents

• Increased focus on STEM in elementary and middle school – Engineering and Coding

• Increased achievement in STEM subjects as measured by SAGE and Galileo -