The present project will be evaluated at two time periods. The initial evaluation of the project is based on two descriptive instruments developed by CSTEM Teacher & Student Support Services. The first instrument was a student survey divided into sections (1) student demographics (2) knowledge of engineering fields and (3) interest in robotics. The second survey was a teacher’s instrument that measures (1) grade level taught (2) their gender (3) if they had ever been employed in a STEM field, and (4) interest in STEM programs. Therefore this report will evaluate the project at the first time period describing the student and the teacher survey. Finally, this report will examine the objectives listed below. It should be noted that some sections did have missing data.

**CSTEM Objectives outcomes include:**

- Increase in students’ knowledge of STEM fields.
- Strengthen student’s STEM skills.
- Increase student’s interest in robotics.
- Increase student’s interest in learning more about science and technology.
- Increase student’s interest in careers that uses science and engineering.
- Enhancement of teacher STEM skills through training
- Build and support STEM teacher collaborations
- Encourage students to explore interest in STEM
Demographics of Students

The total sample in the present study was 207 students, representing 30 schools. Table 1 describes the overall distribution of the sample across school levels. In this case there were 83 elementary students which represent about 40 percent of the students in the sample. There were 80 middle school students along with 43 high school students. Middle school students represent about 39 percent of the students. Finally, high school level students represented about 21 percent of the sample.

Table 1
Grade Level, Frequency, and Percentage
Overall

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>83</td>
<td>40.1</td>
</tr>
<tr>
<td>Middle School</td>
<td>81</td>
<td>39.1</td>
</tr>
<tr>
<td>High School</td>
<td>43</td>
<td>20.8</td>
</tr>
<tr>
<td>Total</td>
<td>207</td>
<td>100%</td>
</tr>
</tbody>
</table>
Figure 1, graphically describes the grade level make-up of the students contained in the present study.
Table 2 describes the distribution of the overall sample across gender. There were 115 male students in the sample and 90 female students. Males represented about 55 percent in the sample. Females represented about 44 percent of the sample. There were two students that did not indicate their gender. These two students represented less than 1 percent of the sample.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>115</td>
<td>55.5</td>
</tr>
<tr>
<td>Females</td>
<td>90</td>
<td>43.5</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>207</td>
<td>100%</td>
</tr>
</tbody>
</table>
Figure 2, graphically represents the gender make-up of the students contained in the present study.
Table 3 represents ethnicity levels in the present sample. Hispanic students represented the largest proportion in the sample (about 48%) with 99. The second largest percent (about 38%) in the sample was African-American students. The total number of African-Americans in the survey was 78. Asian and Caucasian students represented about 5 percent and 4 percent respectively. Seven of the students selected the option “Other” as an indicator of their ethnicity. Finally, there were 4 cases where the student’s race was not indicated.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>78</td>
<td>37.7</td>
</tr>
<tr>
<td>Hispanic</td>
<td>99</td>
<td>47.8</td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>8</td>
<td>3.9</td>
</tr>
<tr>
<td>Asian</td>
<td>11</td>
<td>5.3</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>3.4</td>
</tr>
<tr>
<td>Missing</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td>Total</td>
<td>207</td>
<td>100%</td>
</tr>
</tbody>
</table>
Figure 3, graphically represents the ethnic make-up of the students contained in the present study.

**Figure 3**
Ethnicity Make-Up of the Sample
Figure 4 graphically represents ethnic groups and the gender make-up of the sample.
Figure 5 graphically represents school levels across ethnicity.

**Figure 5**
School Level and Ethnicity

![Graph showing school levels and ethnicity]
Figure 6 graphically represents school level across gender.
Figure 6a & 6b graphically represents ethnicity across gender.

Figure 6a and 6b
School Level, Ethnicity and Gender
Figure 7 graphically represents Knowledge of Engineering Fields for the total sample.

Students’ Knowledge of the Areas of Engineering

- Aeron
- Chem
- Civil
- Elec
- Indust
- Mech
- Other

PERCENT

AREA
Figure 8 graphically represents student knowledge of the different areas across grade level.

**Figure 8**

Students’ Knowledge of the Areas of Engineering Across Grade Levels

[Bar chart showing the knowledge distribution across different areas and grade levels]
Figure 9 graphically represents **elementary school students’** knowledge of the different areas of engineering across ethnicity.

**Figure 9**

**Elementary School Students’ Knowledge of Areas in Engineering**

**By Ethnicity**
Figure 10
Middle School Students’ Knowledge of Areas in Engineering
By Ethnicity

Aero  Chem  Civi  Elec  Indu  Mech  Othe
Area

Race
Af.Amer  Asian  Hisp  Other  White

Mean percent2

Area
Figure 11 graphically represents **high school student's** knowledge of the different areas of engineering across ethnicity.

**Figure 11**

High School Students’ Knowledge of Areas in Engineering
By Ethnicity
Figure 11 graphically represents elementary school students' knowledge of the different areas of engineering across gender.

**Figure 11**

Elementary School Students’ Knowledge of Areas in Engineering

By Gender

![Bar chart showing the mean percent knowledge across different areas and genders.](chart_image)
Figure 12 graphically represents middle school students’ knowledge of the different areas of engineering across gender.

**Figure 12**
Middle School Students’ Knowledge of Areas in Engineering
By Gender

![Bar Chart]

The bar chart shows the mean percent knowledge across different areas of engineering (Aero, Chem, Civi, Elec, Indu, Mech, Othe) for male (green) and female (blue) students. The areas are plotted along the x-axis, and the mean percent knowledge is on the y-axis.
Figure 13 graphically represents high school student’s knowledge of the different areas of engineering across gender.

Figure 13
High School Students’ Knowledge of Areas in Engineering
By Gender

![Bar chart showing the mean percent knowledge by gender across different engineering areas.](chart.png)
Table 14 reports student’s responses to item 7, which ask why they wanted to join the robotics team.

Table 14
Reasons for Joining the Robotics, Percent of Students that Said Yes to Each Question

<table>
<thead>
<tr>
<th>Questions</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>I want to learn more about science and technology</td>
<td>75.0%</td>
<td>25.0%</td>
</tr>
<tr>
<td>I am interested in a job or career that uses science and engineering</td>
<td>33.3%</td>
<td>66.7%</td>
</tr>
<tr>
<td>I like working on a team project</td>
<td>43.5%</td>
<td>56.5%</td>
</tr>
<tr>
<td>I am good with operating computers</td>
<td>24.6%</td>
<td>75.4%</td>
</tr>
<tr>
<td>I want to learn more about engineering</td>
<td>32.9%</td>
<td>67.1%</td>
</tr>
<tr>
<td>I want to become an engineer</td>
<td>17.9%</td>
<td>82.1%</td>
</tr>
<tr>
<td>I like putting things together</td>
<td>60.9%</td>
<td>39.1%</td>
</tr>
</tbody>
</table>
Figure 15 graphically represents the percentage of students that answered yes to each question.

**Figure 15**

Reasons for Joining the Robotics, Percent of Students that Said Yes

By Question

- Learn more about science and technology
- Job or career that uses science and technology
- I like working on a team project
- I am good with operating computers
- I want to learn more about engineering
- I want to become an engineer
- I like putting things together
Figure 16 graphically represent the percentage of students that answered yes to each question by grade level.

**Figure 16**

*Why you joined the robotics team by Grade Level*

<table>
<thead>
<tr>
<th>Question</th>
<th>Elem</th>
<th>Highsch</th>
<th>Middle</th>
</tr>
</thead>
<tbody>
<tr>
<td>learn more about science and tech</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>job or career that uses sci and tech</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like working on a team project</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am good with operating computers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to learn more about engineering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to become an engineer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like putting things together</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 17 graphically represents the percentage of students that answered yes to each question by ethnicity.

**Figure 17**

*Why you joined the robotics team by Ethnicity*

![Graph showing the percentage of students who answered yes to each question by ethnicity.](image-url)
Figure 18 graphically represents gender percentages of the teachers included in the sample.

**Figure 18**

**Gender Percentages**
Figure 19 graphically represents the percentage of teachers reporting they had worked in a STEM area.

**Figure 19**
Number of Teachers Previously Employed in STEM Area

![Bar chart showing the frequency of teachers employed in STEM areas](chart.png)

- Yes: 20
- No: 10

Frequency of employment: 0, 5, 10, 15, 20
Figure 20, graphically represents the percentage of teachers who have been employed in a STEM area by gender.

Figure 20
Number of Teachers Previously Employed in STEM Area by Gender
Figure 21, graphically represents the percentage of teachers who have been employed in a STEM areas by grade level.

Figure 21
Number of Teachers Previously Employed in STEM Area by Grade Level
Figure 22, graphically represents the percentage of teachers who have been employed in a STEM areas by grade level.

**Figure 22**

Number of Teachers Previously Employed in STEM Area by Grade Level and Gender

<table>
<thead>
<tr>
<th>Grade</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 23 graphically represents the percentage of students on free or reduced lunch programs.

**Figure 23**
Percentage of Students on Free or Reduced Lunch Programs
Figure 24 graphically represents the number of teachers that have been involved with a robotics program.

Figure 24
Involved with Robotics Program
Figure 25 graphically represents how teachers learned about the Shell • Schlumberger Sea Turtle Robotics Competition.

Figure 25
How teachers learned about the Shell • Schlumberger Sea Turtle Robotics Competition
Figure 26 graphically represents why teachers decided to lead a Schlumberger * Shell Sea Turtle Robotics Competition team.

**Figure 26**

*Why teachers decided to lead a Shell • Schlumberger Sea Turtle Robotics Competition team*
Figure 27 graphically represents who prompted the formation of the team.
Design of the Evaluation

To evaluate this project, the present study will use a repeated measure design. In the case participants were surveyed at the beginning of the project and there will be a follow-up survey at the conclusion of the study. Issues that arise with this design is centered around mortality and maturation. Mortality, in this case is students that dropout or transfer out of the program before the completion of the project. Maturation is the impact of the treatment over time. Although we have very little control over mortality issues, we can somewhat control maturation by limiting the time between treatment and evaluation.

Data

The data for the present study came from students enrolled in 30 schools in the Houston Independent School District. Each student was asked to complete a self-reporting instrument developed by CSTEM. There were a total of 207 students that completed the survey. About 40 percent of the students were in elementary grades compared to about 39 percent in middle school. The remaining 21 percent were enrolled in high schools. The ethnic make-up of the sample was primarily Hispanic and African-American students, representing 48 and 38 percent respectively. It should be noted the sample size for Asian, Caucasian/White and other races are rather small. Furthermore, when you divide the ethnic make-up and do gender comparisons the results become even more suspicious. However the sample may be a representation of Houston Independent School District due the fact that the sample does include primarily Hispanic and African-American. Therefore, to generalize the results to any other race other than Hispanic and African-American students might become ambiguous.

Summary of the Objectives

The first objective addressed in this project was student’s overall knowledge of STEM fields. The results indicate as educational levels increase so does knowledge of what engineers do in the different fields. Moreover, middle school students have more knowledge of what engineers do compared to elementary students, and high school students have higher knowledge compared to middle school students. When the data is divided by grade level and ethnicity, Hispanic students followed by African-Americans tend to have the least knowledge of what engineers do compared
CSTEM Teacher & Student Support Services

Shell • Schlumberger Sea Turtle Robotics Project

Follow-Up Report Developed By
Dr. Emiel Owens and
Dr. James Johnson
STATLAB DATA SERVICES
Grade Level, Frequency, and Percentage
Overall

Student Grade Level

Count

Middle School

High School

Student Grade Level
Gender Make-Up of the Sample

![Gender Distribution Chart]

- Male: 60 Count
- Female: 20 Count
Ethnicity, Frequency and Percentage Overall

![Bar Chart]

- African American
- Hispanic
- Asian
- Caucasian

Count

My Ethnicity
### My Ethnicity * My Gender Crosstabulation

<table>
<thead>
<tr>
<th>My Ethnicity</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Asian</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Caucasian</td>
<td>15</td>
<td>0</td>
</tr>
</tbody>
</table>

**Graph:**
- **My Ethnicity:**
  - African American
  - Hispanic
  - Asian
  - Caucasian
- **My Gender:**
  - Male: 20
  - Female: 0

**Legend:**
- African American
- Hispanic
- Asian
- Caucasian

**Count:**
- Male: 20
- Female: 0
Student Grade Level * My Gender Crosstabulation

Bar Chart

My Gender
- Male
- Female

Student Grade Level
- Middle School
- High School

Count

Middle School
- Male
- Female

High School
- Male
- Female
Student Survey

I want to learn more about Science and Technology

Frequency

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>80</td>
</tr>
<tr>
<td>no</td>
<td>20</td>
</tr>
</tbody>
</table>
Student Survey

I Plan to take Advance Placement math and courses

<table>
<thead>
<tr>
<th>Frequency</th>
<th>I Plan to take Advance Placement math and courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>yes</td>
</tr>
<tr>
<td>10</td>
<td>no</td>
</tr>
</tbody>
</table>

yes
no

Frequency

I Plan to take Advance Placement math and courses

yes
no
Student Survey

I am interested in learning more about robotics

Frequency

I am interested in learning more about robotics

yes

no
The robotics camp has made me more interested in technology and science.
Student Survey

I plan to continue in the robotics competition program next year

Frequency

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>80</td>
</tr>
<tr>
<td>no</td>
<td>0</td>
</tr>
</tbody>
</table>
Student Survey

I am interested in a job or career that uses science and engineering

[Bar chart showing frequency distribution between 'yes' and 'no']
Student Survey

I want to learn more about engineering

Frequency

I want to learn more about engineering

yes  no
Student Survey

I think technology and science are cool

Frequency

I think technology and science are cool

0
20
40
60
80

yes
no
Student Survey

I like putting things together

Frequency

0
20
40
60
80

I like putting things together

yes
no
Student Survey

I like working on a team project

Frequency

I like working on a team project

yes

no
Joining the robotics competition has strengthened my understanding of science and engineering.
Student Survey

I will recommend the robotics program to a friend

- Frequency

- I will recommend the robotics program to a friend

- yes

- no
Student Survey

I think robotics is cool

<table>
<thead>
<tr>
<th>Frequency</th>
<th>I think robotics is cool</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>yes</td>
</tr>
<tr>
<td>20</td>
<td>no</td>
</tr>
</tbody>
</table>
Student Survey

I want to become an engineer

Frequency

I want to become an engineer

yes
no
It takes students' knowledge of math, science and technology to develop robotics.

According to the survey, a majority of respondents believe that it is necessary for students to have knowledge in these areas to develop robotics.
Student Survey

I feel boys do better in math and science compared to girls

Frequency

I feel boys do better in math and science compared to girls

yes  no
Student Survey

I think the robotics competition makes me like make and science more

Frequency

yes  no

I think the robotics competition makes me like make and science more
Student Survey

Most professionals that work in engineering and science areas are males
In my math class, we often use computers to solve problems

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>50</td>
</tr>
</tbody>
</table>

Student Survey
Involvement in the robotics program has made me consider a career in engineering.

Frequency

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>~50</td>
</tr>
<tr>
<td>no</td>
<td>~20</td>
</tr>
</tbody>
</table>

Student Survey
Student Survey

I plan to go to college

Frequency

I plan to go to college

yes

no
I plan to finish college

Frequency

yes
no
What I learned at the robotics camp will be helpful to me in real life

- Frequency

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>60</td>
</tr>
<tr>
<td>no</td>
<td>10</td>
</tr>
</tbody>
</table>
Student Survey

In college, I plan to major in Math, Biology or Chemistry

![Bar chart showing frequency of students planning to major in Math, Biology or Chemistry. The majority plan to major in Math, Biology or Chemistry.](chart.png)
Student Survey

In college, I plan to major in Engineering

Frequency

In college, I plan to major in Engineering

no
yes
In college, I plan to major in Technology (Computer Science or Computer Applications)
Student Survey

In college, I plan to major in Education

- 70 - 60 - 50 - 40 - 30 - 20 - 10 - 0

Frequency

In college, I plan to major in Education

- yes
- no
In college, I plan to major in Business

Frequency

no

yes

In college, I plan to major in Business
In college, I plan to major in Social Science (History, Psychology etc)
Teacher Survey

Grade Level I Teach

<table>
<thead>
<tr>
<th>Grade Level I Teach</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elem</td>
<td>2</td>
</tr>
<tr>
<td>Middle School</td>
<td>8</td>
</tr>
<tr>
<td>High School</td>
<td>4</td>
</tr>
</tbody>
</table>
Teacher Survey

My Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2</td>
</tr>
<tr>
<td>Asian</td>
<td>2</td>
</tr>
<tr>
<td>Caucasian</td>
<td>4</td>
</tr>
</tbody>
</table>
Teacher Survey
Teacher Survey

School I Teach At

Frequency

0.0
0.5
1.0
1.5
2.0

Valley West
DeBaKey
Bonner
Sharpstown Middle
Wheatley
Flemings Middle
Key Middle
Stevenson Middle
Edison Middle
Energized For Excellence
Sterling High School
Cullen Middle
Reagan
Harvard

School I Teach At
Teacher Survey

I Plan to Stay Involved in Future Robotics Programs

Frequency

Yes

I Plan to Stay Involved in Future Robotics Programs

0
5
10
15
20
Teacher Survey

I Will Integrate the Skills I have Learned from the Robotics Program in the Curriculum I Teach

Frequency

Yes

I Will Integrate the Skills I have Learned from the Robotics Program in the Curriculum I Teach
Teacher Survey

My Principal was Very Supportive of my Participation in the Robotics Program

Frequency

My Principal was Very Supportive of my Participation in the Robotics Program
Teacher Survey

I will Recommend Other Teachers at My School to Join the Robotics Program
Teacher Survey

I Have Access to Robotics Equipment at My School

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Teacher Survey

I Would Like to Start a Robotics Club at My School

- Yes: 14
- No: 2
Teacher Survey

I Would Like to Receive More Training in Robotics

Yes
No

Frequency

I Would Like to Receive More Training in Robotics
At My School, Boys do Better Than Girls in Science and Technology

Yes  No

Frequency

At My School, Boys do Better Than Girls in Science and Technology
Teacher Survey

Engineering is a Male Dominated Field

Frequency

Engineering is a Male Dominated Field

Yes
No
Teacher Survey

At my School, Boys are Expected to Do Better Than Girls

Frequency

At my School, Boys are Expected to Do Better Than Girls
Teacher Survey

I Have a Bachelor Degree in One of the STEM Areas (Science, Technology, Engineering or Math)

![Bar Chart]

- Yes: 8
- No: 6

Frequency

I Have a Bachelor Degree in One of the STEM Areas (Science, Technology, Engineering or Math)
Teacher Survey

Students That Participate Will do Better in Their Math and Science Courses

Yes

Frequency

Students That Participate Will do Better in Their Math and Science Courses
Administrator Survey

Level

Frequency

Elementary
Middle School
High School

0
2
4
6
8
10
Administrator Survey

Ethnic

Frequency

0 2 4 6 8 10

African American Hispanic Caucasian Other

Ethnic

Frequency

0 2 4 6 8 10

African American Hispanic Caucasian Other
Administrator Survey

Gender

Frequency

Male | Female
--- | ---
12  | 4
I Plan to Stay Actively Involved In Future Engineering and Robotics Programs
Administrator Survey

The Robotics Program Will Help My Students Do Better In Math and Science

![Bar Chart]
Administrator Survey

Teachers Have Access to Robotics Equipment

- Yes: Frequency 4
- No: Frequency 12
I Will Encourage More Faculty Members at My School to Get Involved in The Robotics Program

Frequency

I Will Encourage More Faculty Members at My School to Get Involved in The Robotics Program
Administrator Survey

I Will Encourage Other Administrators to Get Their School Involved in the Robotics Program

Frequency

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I Will Encourage Other Administrators to Get Their School Involved in the Robotics Program
We Have a Robotics Club at My School

- Yes: 12
- No: 4

Frequency
Administrator Survey

My Faculty and Staff are Open to New Innovative Ways

- Yes: 15
- No: 1

Frequency
Administrator Survey

At my School Teacher Have Access to Cable TV in Their Classroom

Yes
No

Frequency

At my School Teacher Have Access to Cable TV in Their Classroom

Frequency

Yes
No
Administrator Survey

Teachers are Encouraged to use Technology in Their Classroom

Frequency

Teachers are Encouraged to use Technology in Their Classroom

Yes
Administrator Survey

I Often Communicate With My Faculty Members Through Emails

Frequency

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>12</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
</tr>
</tbody>
</table>
Administrator Survey

Teachers are Encouraged to Attend Technology Training

Frequency

Yes
Administrator Survey

I Have Attended a Technology Training Seminar in the Past Year

Yes  No
Frequency

I Have Attended a Technology Training Seminar in the Past Year
Offer More After School Programs for my Students Involving Technology

Yes

Frequency
Offer More Summer Programs for my Students Involving Technology

Frequency

Offer More Summer Programs for my Students Involving Technology

Yes

0
5
10
15
20
Administrator Survey

Offer More After School and Saturday Faculty Development Programs on Effective Use of Technology in the Classroom

Frequency

Yes No

Offer More After School and Saturday Faculty Development Programs on Effective Use of Technology in the Classroom
Parent Survey

Grade

Elemental Frequency

Middle Frequency

Grade
Parent Survey

Ethnic

Frequency

African-American Hispanic Asian White

Ethnic
Parent Survey

School

<table>
<thead>
<tr>
<th>School</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stevenson</td>
<td>4</td>
</tr>
<tr>
<td>Edison Middle</td>
<td>1</td>
</tr>
<tr>
<td>Frost Elementary</td>
<td>1</td>
</tr>
<tr>
<td>Energized for Excellent</td>
<td>1</td>
</tr>
<tr>
<td>Hamilton</td>
<td>1</td>
</tr>
</tbody>
</table>
Parent Survey

Like My Child to Stay Active in Future Engineering and Robotics Programs

Yes

0
2
4
6
8
Frequency

Like My Child to Stay Active in Future Engineering and Robotics Programs
I Enjoyed Attending the Robotics Competition Program

Frequency

I Enjoyed Attending the Robotics Competition Program

Yes
Parent Survey

The Program Will Help My Child do Better in Math and Science

Yes

Frequency

The Program Will Help My Child do Better in Math and Science
Parent Survey

I am Actively Involved in My Child's Education

Frequency

Yes

I am Actively Involved in My Child's Education
Parent Survey

I Often sit down with my Child to Help Them Plan His/Her Educational Career

Frequency

Yes

I Often sit down with my Child to Help Them Plan His/Her Educational Career
Parent Survey

My Child Likes Putting Things Together

Frequency

Yes

No

My Child Likes Putting Things Together
Parent Survey

My Child Favorite Subject

<table>
<thead>
<tr>
<th>Subject</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>3</td>
</tr>
<tr>
<td>Social Studies</td>
<td>1</td>
</tr>
<tr>
<td>Science</td>
<td>4</td>
</tr>
</tbody>
</table>
Parent Survey

The Robotics Competition has Made My Child Want to go to College

- Frequency

The Robotics Competition has Made My Child Want to go to College
Parent Survey

My Child does most of their Homework on the Computer

Frequency

Yes
No

My Child does most of their Homework on the Computer
Parent Survey

My Child does well in Math and Science

Yes

Frequency

0  2  4  6  8

My Child does well in Math and Science
Parent Survey

I will continue to Support the Robotics Competition Program

Frequency

I will continue to Support the Robotics Competition Program
Parent Survey

I would Like my Child to Receive more Training in Robotics

Frequency

Yes

I would Like my Child to Receive more Training in Robotics
Parent Survey

I would Like my Child to attend more after School Programs Involving Technology

Yes

Frequency

I would Like my Child to attend more after School Programs Involving Technology
Parent Survey

I would Like the School my Child attends to Offer more Summer Programs involving Technology

Frequency

Yes

I would Like the School my Child attends to Offer more Summer Programs involving Technology
Student Survey (Elem)

What is your grade level

<table>
<thead>
<tr>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>15</td>
</tr>
<tr>
<td>20</td>
</tr>
</tbody>
</table>

What is your grade level

<table>
<thead>
<tr>
<th>3.00</th>
<th>4.00</th>
<th>5.00</th>
<th>6.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Student Survey (Elem)

What is your Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>15</td>
</tr>
<tr>
<td>Hispanic</td>
<td>15</td>
</tr>
<tr>
<td>Caucasian</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
</tbody>
</table>
Student Survey (Elem)

What is your Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>20</td>
</tr>
<tr>
<td>Female</td>
<td>25</td>
</tr>
</tbody>
</table>
Student Survey (Elem)

What is the name of your School

Frost, Harvard, Houston, Gardens, Isaccs, Sugar Grove, Bonner

Frequency
The robotics competition was fun
Student Survey (Elem)

I like putting things together

<table>
<thead>
<tr>
<th>Frequency</th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Student Survey (Elem)

I play computer games at home a lot

- Yes
- No

Frequency

- Yes: 25
- No: 15
Student Survey (Elem)

Robotics are fun to play with

Frequency

Robotics are fun to play with

yes
no
I plan to continue in the Robotics competition program next year

Frequency

I plan to continue in the Robotics competition program next year

yes  no

0  10  20  30  40

Frequency

I plan to continue in the Robotics competition program next year

yes  no
Student Survey (Elem)

I have learned a lot in this program

<table>
<thead>
<tr>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
</tr>
<tr>
<td>no</td>
</tr>
</tbody>
</table>

- I have learned a lot in this program
- Frequency
- I have learned a lot in this program
Student Survey (Elem)

I like working with my friends

Frequency

<table>
<thead>
<tr>
<th></th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
Student Survey (Elem)

I think robotics are cool

Frequency

I think robotics are cool
Student Survey (Elem)

I like math

<table>
<thead>
<tr>
<th>Frequency</th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
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</tbody>
</table>
My favorite subject is Math.
Student Survey (Elem)

I plan to go to college

Frequency

I plan to go to college

yes
Student Survey (Elem)

I plan to finish college

- Frequency
  - yes: 40
  - no: 0
Student Survey (Elem)

I wish we had robotics at my school

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
<td></td>
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<tr>
<td>30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
At my school I do most of my homework on a computer.
Student Survey (Elem)

My teacher uses a computer to teach us in class

- yes
- no

Frequency

My teacher uses a computer to teach us in class
I like science

<table>
<thead>
<tr>
<th>Frequency</th>
<th>I like science</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>yes</td>
</tr>
<tr>
<td>10</td>
<td>no</td>
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</table>

Student Survey (Elem)