I) Mid-Year Report:

The High School Enterprise Program has been very successful addition to Melvindale High School. In two years, it went from an after school program to a science course offering. There are two class periods under the title “Alternative Energy/HSE Course”. The course services daily (50 Minutes in length of the class periods). There are 75 students in course and 15 students in the after school program, which equals 90 students under the heading of “High School Enterprise Program.”

The students within the course have requirement of minimum contact time of 310 minutes per week. The timeframe break’s to the following: Daily Meeting of the Course (5 days at 50 minutes class period (250 Minutes); and External Meetings/Work Time (minimum of 60 minutes). The students in the after school program are required to commit to the minimum amount of 120 minutes, but most students are
averaging about 160 minutes. The students must log in and out, so I can track their performance levels and dedication to the program.

This course is just not a new course, but a major showcase to the changing academic climate to The State of Michigan educational needs in the 21st Century. The HSE course is well known among the school systems in the downriver educational community. Numerous superintendents and principals have requested the opportunity to visit Melvindale High School and meet with the students within this program. Melvindale School System is going through numerous changes towards addressing educational preparation of our students from the elementary level to that of secondary level. The school system implemented educational curriculum requirements through the employment of “Rigor and Relevance” and “Project Based-Learning”. The specialists, which service our school system have request the opportunity use the curriculum requirements and mode of implementation of this course to cite the employment of “Quad Learning” to meet educational success among students at the high school level.

II) Team Introduction:

This is the second year of the program at Melvindale High School. Mr. Thomas is the mentor of the program, but the students are required to run the daily functions of research topics of the program. The High School Enterprise Program at our school is run through various divisions (e.g., business, marketing, CAD, designing, research, welding, machine of parts, material orders, and etc…). All members (course and after school) are required meet as group twice a month. During the general meetings, each division must report their new business and target objectives for timeframe until the next meeting. The meeting also has open discussion time to allow the members in the program to express their views and opinions on the topics at hand facing the program. The students are the main governing body of the HSE Program. The members of the program are in grades 9th through 12th.

This year, the members have express interest in taking course material and adapting hands-on lessons to present to students in the lower grades. We are examining the idea of working with younger students to establish a mentorship program for students in grades 3rd
through 8th within the Melvindale School System. We are also exploring the idea of taking our mentorship program to students outside of district. We are looking to the future to work with Mexican-American Population in Southeastern Region in the City of Detroit.

III) Name of the Team:

“The Hybrid Cards”

IV) Mission Statement:

“If you are believer in your dreams, then they will come true.”

V) Purpose:

The Alternative Energy/HSE Course and After School Program are designed to allow students to push their creativity and imagination to the maximum level. The program is set-up as a student driven operation with group involvement in the daily operations.
VI) School Logo:

“Cardinals”

VII) Overview on Financial Support Partnership:

Square-One Education Network and High School Enterprise of MTU

VIII) Project Introduction and Summary:

The team at Melvindale High School is very diverse in both ethnicity and gender. The students within this program are really energized to meet and exceed the objectives of our HSE Project. This partnership between HSE, Square-One, and Northern Allen Park-Melvindale School District is the first of its kind in our district. This type of partnership is win-win for all parties, especially for our students.

The students in course and after school program will address a major issue facing the people in the USA. The questions at hand are: (1) Our dependence on foreign oil resources; (2) Deletion of natural resources at an alarming rate; and (3) Will these resources be available in the future?

The MHS team will address the need for the development and employment renewable energy sources in our daily lives. We are researching, designing, and developing a functional hybrid vehicle. The HSE Program is involved in the Innovative Vehicle Design Challenge with the Square-One Foundation. The students have established high expectations and objectives to meet the challenges of this project. The student’s objectives are to research, design, build, modify, and establish a final product to be driven on the roadways of Michigan.

IX) Student Learning Process:

The students are learning numerous new educational applications:

- Project Based-Learning
- Teamwork
- Presentation Skills
• Professional Appearance Skills
• Research Skills
• Electrical Skills

X) Team Accomplishments:

• Melvindale High School has 72 students within HSE Program.
• The students developed a solar vehicle. (Picture within report)
• The students were a big hit at SAE Conference. (Picture within report)
• The students were involved in research the quality of battery models on the market. (Research on Mid-Year HSE)
• The students are starting to design and CAD out the next generation alternative energy vehicle.

XI) Roadblocks and Solutions:

The program had minor issues during the course of development to solar cell vehicle. A major issue was the storage of potential energy in the most affection battery model. Another major issue was the placement of the solar panels for the maximum energy intake levels.

XII) The Future:

The students are starting the designing and CAD development for the next alternative energy vehicle. The students are researching for best energy quality level of solar panels on the market. They are looking to exppanse the role of regeneration modes to increase the energy success levels. A few of students are research the employment of alloy metals to lighten up internal skeleton of the vehicle. Next year theme is “Next Generation of Alternative Energy Vehicles”.
Picture Gallery: