

# What is CTE?

Career and Technical Education (CTE) is an educational program for high school and community college students based on industry needs.

CTE prepares and supports students in acquiring the technical skills and academic knowledge needed for success in the highly skilled careers of the 21st century.

# Essential Elements of a CTE Program

- Lead to high wage/high demand careers
- Provide a pathway to postsecondary education (offer college credit when possible)
- Offer real connections to industry
- Provide opportunities for leadership

# Essential Elements of a CTE Program

- Engage an active advisory committee
- Generate student interest
- Utilize industry standard technology
- School and community awareness of program

# The Power of CTE

- 8-10 times less likely to drop out in the 11<sup>th</sup> and 12<sup>th</sup> grade if in a CTE program
- 81% of dropouts say relevant, real-world learning opportunities would of kept them in school
- The average graduation rate for CTE students is 90% compared to national average of 75% who are not part of a CTE program

# Current CTE Programs

- Computer Graphics
- Business
- Agricultural Science
- Metals and Manufacturing

# Additional Programs

- Biomedical Science
- Engineering and Design

# Graphic Arts Technology

- Graphic Arts 1
- Graphic Arts 2 (Service Learning/Photo)
- Graphic Arts 3
- Graphic Arts 4
- Motion Graphics\*
- Game Design\*
- Video Production\*

\*Future Classes

# Business

## 2014-2015 Courses taught

- Intro to Business
- Business Law I
- Accounting I
- Marketing
- Personal Finance
- Computer Applications



# Business Clubs

2014-2015

- Mock Trial



# Business Clubs

2015-2016

- Mock Trial & FBLA



# Business

## 2015-2016 Additional Forecasted Classes

- Intro to Business Management
- Business Law II
- Accounting II
- Managerial Accounting
- Entrepreneurship
- Business English



# Business

## 3 Year Course Expansion Plan

(with a FTE that specializes in Computer Technology)

- Computer Applications II
- Web Design
- Cyber Security
- Sport and Entertainment Management
- Hospitality



# Agricultural Science

- Agriculture Science 1A\*
- Agriculture Science 1B\*
- Beef and Dairy Cattle Production\*
- Sheep and Swine Production\*
- Introduction to Equine Science
- Equine Management
- Equine and Livestock Evaluation\*
- Introduction to Soils and Horticulture\*
- Plant Propagation\*
- Greenhouse Crops\*
- Landscape Design
- Landscape Construction\*
- Agriculture Mechanics A
- Agriculture Mechanics B
- Tractor Operation
- Public Speaking\*
- Debate
- Food and You

\*College Credits Available



# NATIONAL FFA ORGANIZATION

*The National FFA Organization is the country's largest youth organization that combines academic instruction with hands-on experience preparing students for premier leadership, personal growth and career success.*

- Hands on Learning
- Leadership
- Travel
- Earning Money
- Serving your Community
- Career Opportunities
- Field Trips
- Real World Experience











# Horticulture Program





# Agriculture Mechanics Projects

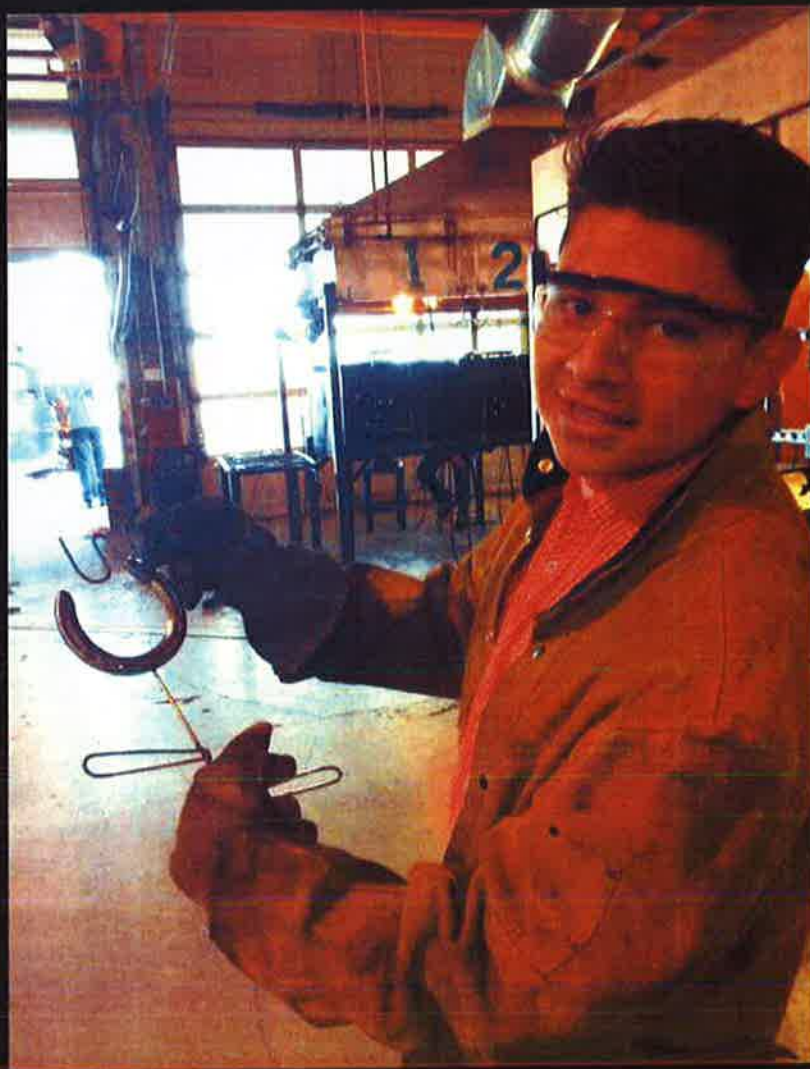




# Agriculture Mechanics Projects



# Metals



Metals IA

Metals IB

Metals II \*

*Metals Internship*

\*College Credit

# Current Metals Program

3 classes

0.5 FTE

3 college credits

Average class size for IA- 36 students

Number of welding stations for IA- 9

Number of welding stations overall- 15

(7 ARC, 1 MIG, 7 O/A, 1 cutting station)

**Every year** forecasting numbers exceed the safe capacity of the shop and the limited six sections we can offer at MHS



## Students learn:

- Arc through G3 w/ multiple rods
- Mig through G3
- O/A cutting, welding, and brazing
- Plasma cutter
- Writing, reading, math
- Projects including:
  - Perfect square
  - Art projects
  - Horse shoe projects
  - Candle holder
  - BBQ
  - Personal projects (bumpers, headache racks, mail boxes, decorative items, skate rails. etc)



Current structure has been influenced by limited resources, large class sizes, limited budget (tools, consumables, metal), other requirements (proficiency & writing)

# Donations & Competitions



## **Donations**

Pacific Building Systems

Valley Farrier Supply

Maverick Welding Supply

## **Competitions**

LBCC Welding Competition

CCC Skills Competitions

FFA Contests

- \*Ag Mechanics

- \*Shop Skills

- \*County/ State Fair exhibits

# Advisory Committee Feedback

Importance- ranked in order

1. Safety
2. Attendance
3. Welding basics- “a little about everything”
4. Math & measurement
5. Writing & handwriting
6. Use of multiple tools
7. Blueprint reading & AWS welding symbols
8. Repair, maintenance & set up equipment
9. Advanced welding- G2, G3, butts, laps, etc
10. TIG



# Advisory Committee Feedback Expansion

1. More resources (metals, consumables etc)
2. More stations
3. More tools
4. More booths
5. More safety equipment



# Year 1: 2015 - 2016

- Upgrade/ update hand tools
- Upgrade/ update power tools
- Build new set of welding stations
- Replace wood boards in current ARC booths w/sheet metal
- Build new Mig station
- Remove lathes
- Purchase own tanks
- Propose Metals IIB
- Purchase textbooks- Blueprinting reading & AWS symbols
- Paint shop walls and replace broken bay door with wall



# Year 2: 2016 - 2017

- Increase general budget
- Expand exhaust system over new booths
- Portable exhaust for Mig
- Switch out lights over booths
- Upgrade electrical to accommodate expansion
- Purchase machines to fill new stations
- Offer Metals IIB (& restructure other classes)
  - Brazing
  - Blueprint reading & AWS symbols
  - G3
  - TIG



# Year 3: 2017 - 2018

- Propose Artistic Welding class & Metals III class
- Increase general budget
- Purchase CNC Plasma Cam



# Year 4: 2018 - 2019

- Increase FTE to 1 full time teacher
- Offer Artistic Welding class & Metals III class
- Opportunities for additional college credit
- Purchase Ironworker



# Priorities

1. Increase amount of welding stations- include machines, exhaust, and electrical
2. Paint shop, replace broken bay door and install new lighting
3. Replace/ upgrade hand and power tools
4. Increased general budget and expand course offerings
5. Purchase a CNC machine
6. Increase FTE to 1 full time teacher
7. Ironworker



# Questions



# Construction and Fabrication

- Intro to Engineering and Technical Careers
- Intro to Fabrication and Construction
- Intermediate Fabrication and Construction A/B
- Advanced Fabrication and Construction A/B
- Intro to Engineering and Design
- Fabrication Lab Design Center A/B
  - [http://youtu.be/8\\_vloWVgf0o](http://youtu.be/8_vloWVgf0o)
  - <http://youtu.be/tsQoBFalpg>



# Construction and Fabrication Cont.

- Computer Integrated Manufacturing
- Civil Engineering and Architecture
- Digital Electronics

# Project Lead The Way

- Biomedical Science
  - <http://youtu.be/HnYj6-PEoIA>
- Engineering and Design
  - <http://youtu.be/yyDn9dXJ3MI>

# Biomedical Science

- Human Body Systems
- Principles of Biomedical Science
- Medical Interventions\*
- Biomedical Innovations\*

\*3 courses are required for the program, either one or perhaps both offered depending on staffing

# Engineering and Design

- Introduction to Engineering Design
- Principles of Engineering
- Computer Science and Software Engineering