Mahtomedi Public Schools

How to make (almost) anything

@FABLab Mahtomedi
Welcome

- History of Why and How
- Ideas to Engage your Students
- Demo of 3D Printer
- Key Fob with Link to More Info

http://youtu.be/Y9HDMmyDwjE
Journey

- Engineering Program started in 2007
- Grew to preK-12 program by 2011
- EiE Engineering is Elementary, GTT Gateway to Technology and SciEng in 9th grade with HTM(a) A and more as high school electives
Engineering Program Goals

- All students introduced to engineering
- All students use engineering problem solving
- Embed engineering standards in science courses and taught by science teachers
Why a FABLab?

- School bond opportunity
- Wanted engineering lab
- Found bleeding edge!
Engaging the Community

- “An engaged community supports its schools.”
  - Mahtomedi Area Educational Foundation
  - Parent – Teacher Organization
  - Engineering Advisory Board
  - FAB Lab Volunteers
  - Post – Secondary Institutes
    - Massachusetts Institute of Technology
    - University of St. Thomas
    - Iowa State University
Funding

- Corporate and Nonprofit Donors
  - 3M
  - Andersen Windows
  - MAEF/Gala
  - PTO
Community Engagement

- Engineering open houses
- FABLab classes/workshops
- Integration District #622 in the Lab
- Growing Scholars
- Elders in lab
- Robotics
Our Students

- Males and Females
- CD all the way to GT
- Trade School through Graduate School
- Fun seekers to college prep
A Unique Space calls for Unique Teaching Practices

- 3 Methods of Learning Occur Daily
  - Teacher directed
  - Collaborative among students
  - Self-directed
A Unique Space calls for Unique Teaching Practices

- Mastery of Skills is the Key
- Learning by Doing
  - Students spend 90% of course working on projects individually or in small groups.
  - Self-paced learning is essential
  - Units overlap
A Unique Space calls for Unique Teaching Practices

- Learning by Doing
  - No written tests, assessments focus on skills
  - 3 key components to every project
    - The Product
    - Documentation
    - Presentations
  - Success does not always equate to mastery
A Unique Space calls for Unique Teaching Practices

Projects with Meaning

- Projects that are meaningful to the instructor are not always meaningful to the student
- Interest and meaning is found in doing things that matter to the student or someone they know
  - A greater sense of ownership
  - Fewer restrictions lead to more creativity
A Unique Space calls for Unique Teaching Practices

- Projects with Meaning
  - Projects for Clients
    - Teachers
    - Family Members
  - Projects for Themselves
    - Every assignment has the caveat “Make something that interests you”
Opportunities for All Interests
Students

- Claire Belisle    HTM(a)A and Aerospace
- Chase Rech      HTM(a)A and Peer Mentor
Final Thoughts and Questions

Mahtomedi Engineering Program Vision
We envision an exciting world-class engineering program that empowers our students to solve future challenges by sparking curiosity, fueling creativity, and instilling a lifelong passion for innovation.
Contact Info

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