

Buchanan Middle School



2008-2009 STEM Institute

S - Science

T - Technology

E - Engineering

M - Math

What is STEM?

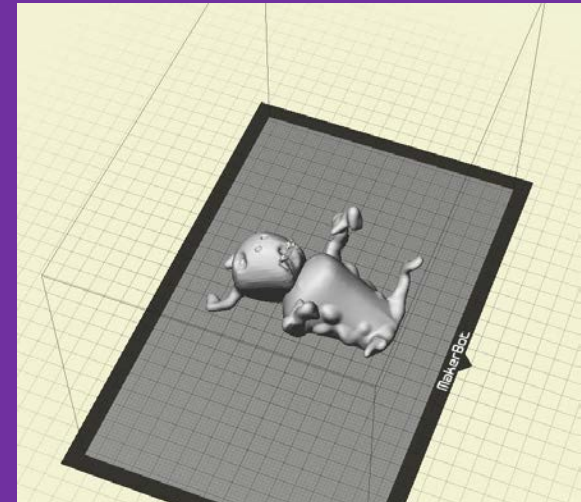
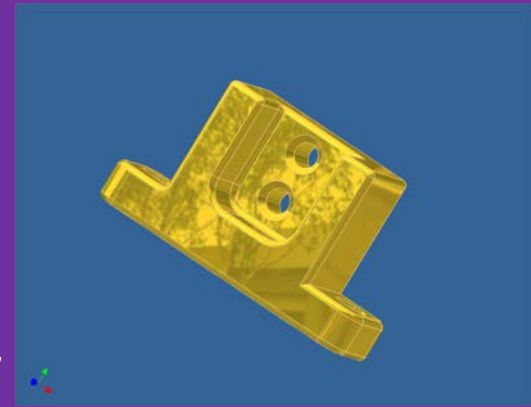
Science
Technology
Engineering
Mathematics



The Science, Technology, Engineering, and Mathematics (STEM) fields are collectively considered core technological frameworks of an advanced society. In today's global economy, the strength of the STEM workforce is viewed as a major indication of a nation's ability to sustain itself.

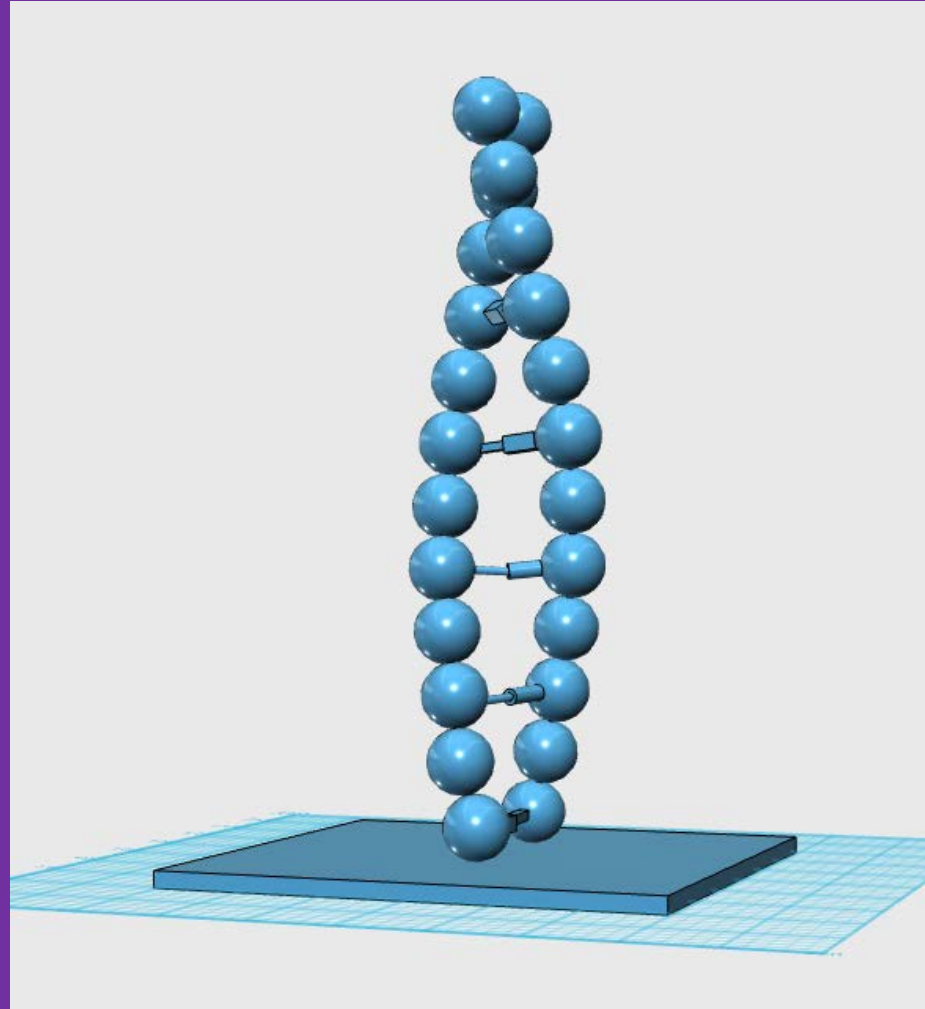
We are called
the.....

Buchanan Bio-engineering Academy



What is Bio-Engineering?

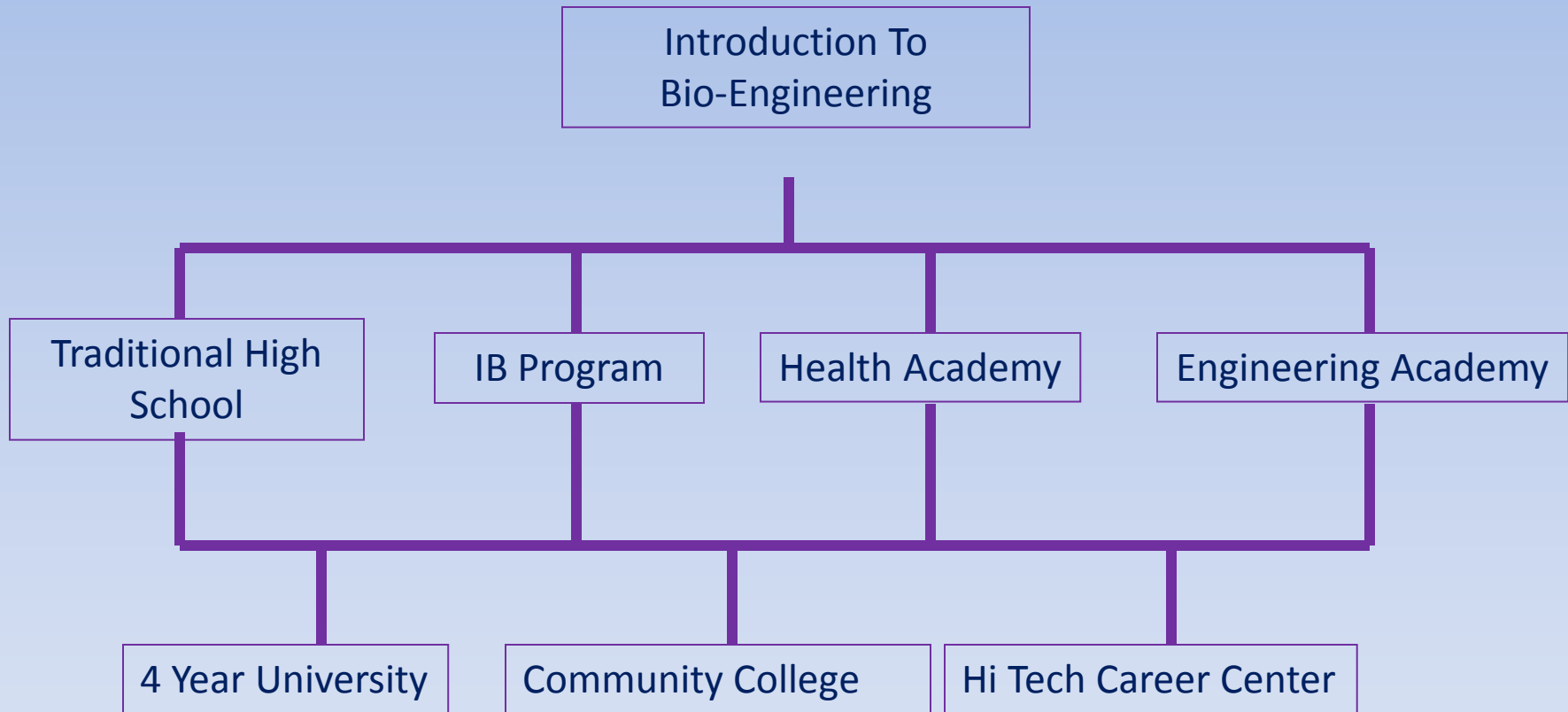
A **Bio-engineer** uses the processes and techniques of traditional engineering to solve problems in the area of medicine.



What Are The Benefits Of This Program?

- It is predicted that careers in the health care and engineering sectors will be in high demand in the next decade.
- An **Introduction to Bio-engineering** will provide experiences to be successful in the most rigorous high school program.
- College prep
- Oh yeah.....it's fun

School & Career Pathways



Middle School

6th grade students will take:

Regular Curriculum

Language Arts

Reading

Math

Science

World History

Wheel

Physical Education

Bio-Engineering/STEM

Honors Language Arts

Technology

Honors/Gifted Math

Honors/Gifted Science

Honors World History

Wheel (rotate electives)

Physical Education

So what do our students do ?

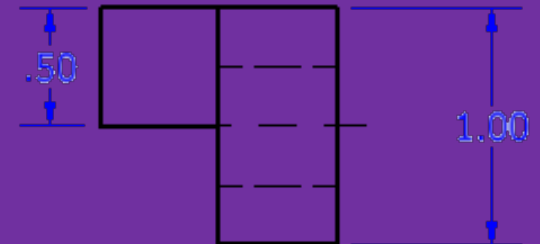
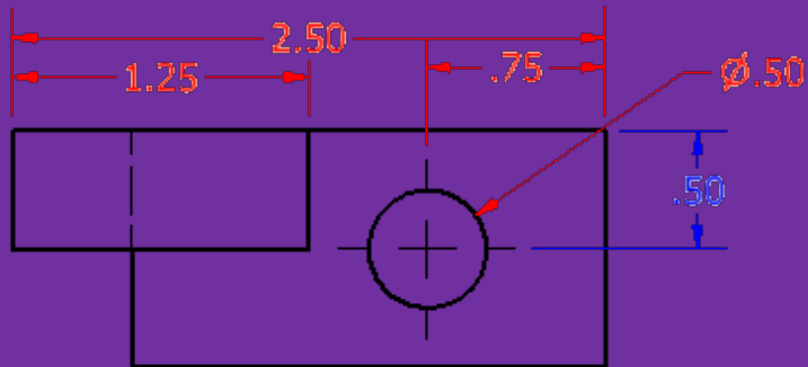
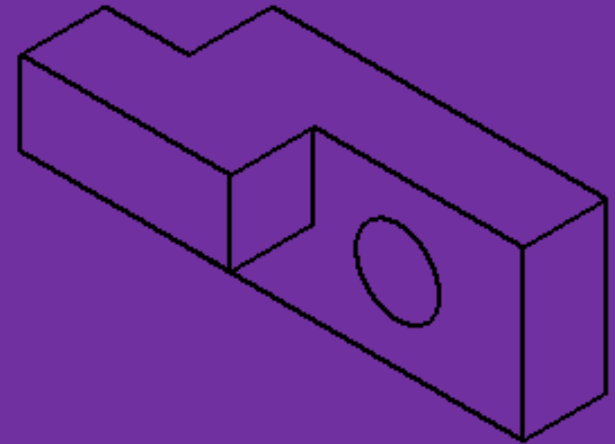
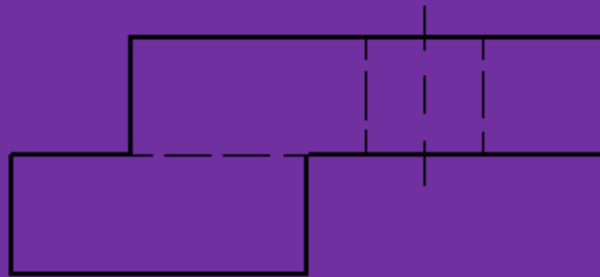
Learn about the human body systems so they can engineer parts for them.



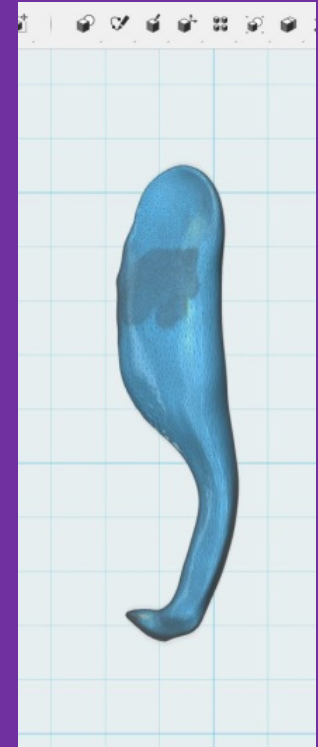
Drafting

Width

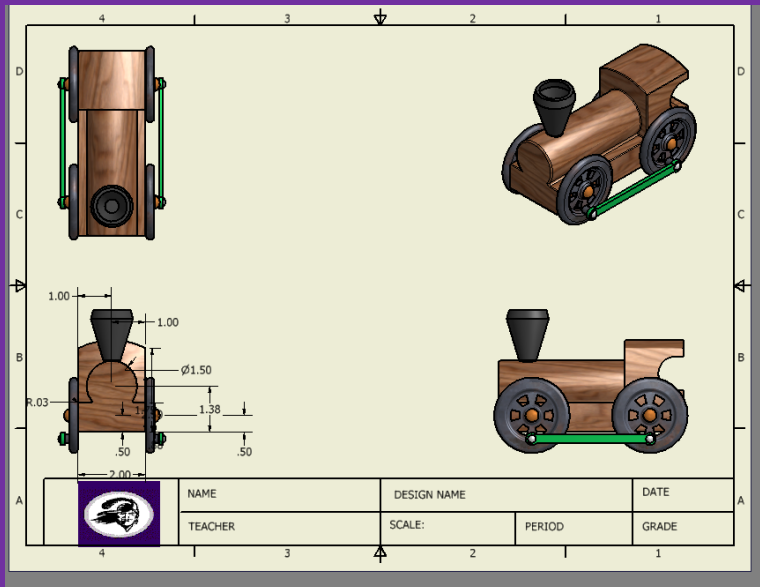
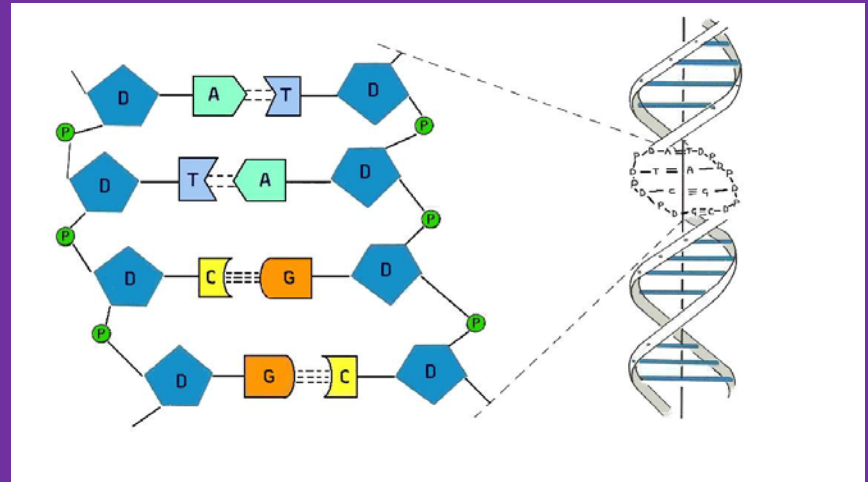
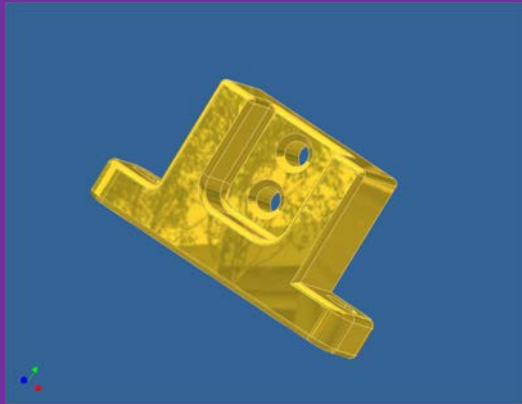
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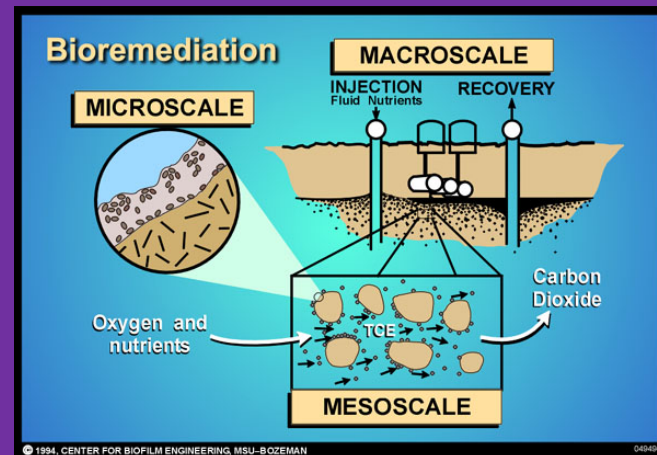
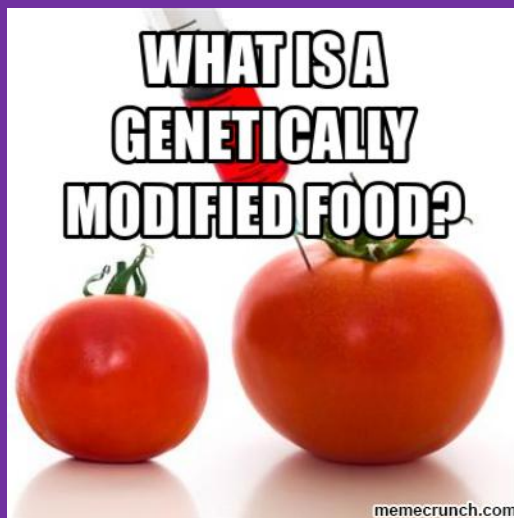
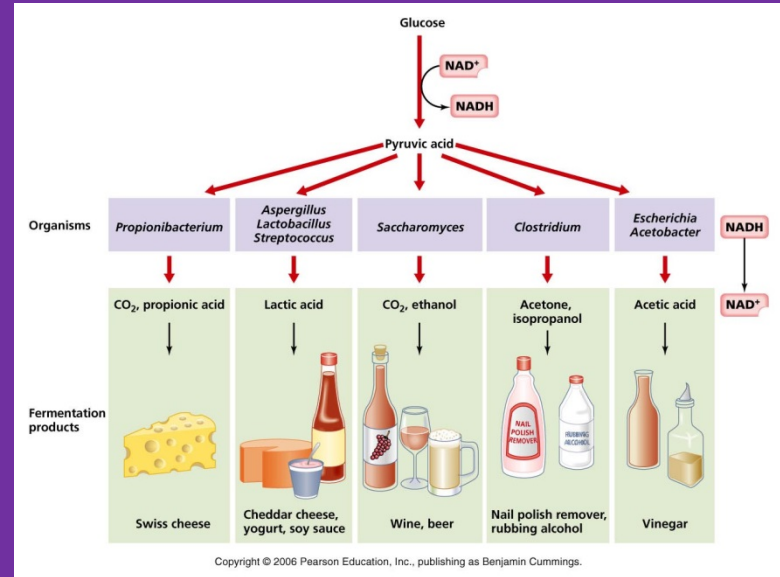
Scaled prosthetics for people and animals.



Biotechnology Techniques



Biotechnology Applications



Competitions Offered

Buchanan STEM Fair 2016!





Since the water tower competitions inception Buchanan Middle School has been there.

The first year we brought over 50 teams- more than any school. (The competition now only allows 5 teams per school.)

- We have one medaled every year!



Buchanan is a leader at the Hillsborough County STEM Fair. Since 2012 we have received more than 30 awards.

2016 12 awards

- Makayla E: 1st Overall Mathematics
 - States!
- Ryan S: 2nd Overall Animal Sciences
- Lauren W & Grace Q: 2nd Overall Behavioral Sciences
- Connor W: 2nd Overall Physical Sciences
- Alexis M: 3rd Overall Animal Sciences
- Tanna C: 3rd Overall Engineering
 - Explore Learning Award
 - Bay Area Manufacturing Award
- Tristen W & Ryan M: 3rd Overall Mathematics
- Taylor H: FPA Award
- Alexis M: 3rd Overall Animal Sciences
- Megan R & Jessica H: LEGO Award

2015 12 awards

- Tanna C: 1st overall Botany - BEST IN SHOW
 - States!
 - D. Carl Riggs Memorial Award
 - Broadcom Masters Award
- Bailey H: 2nd Overall Behavioral & Social sciences
 - States!
- Makenna S: 2nd place overall Chemistry
 - Broadcom Masters award
- Ben H & Ryan M: 3rd Overall Behavioral & Social Sciences
 - Florida Psychological Award
- Elizabeth L: Florida Psychological Award
- Emma B: Florida Psychological Award
- Logan V: 3rd Overall Physics/Astronomy





2016- Buchanan is 2nd Overall; just missing Washington DC by one place!

- 2nd Place
- Best Essay

2015- 2 awards (2 teams max)

- Best Infrastructure
- Best Transportation

2014- 1 awards (2 teams max)

- Best Infrastructure





Exploring the World of Science

We have been participating in Science Olympiad for 7 years. We are the only middle school that has taken 3 teams to State competition for the past five years.

Team Awards

2- 1st overall

1- 2nd overall

2- 3rd overall

Individual Medals

13- gold's

23- silver's



Science Olympiad





We have now entered the USF Engineering Bridge Competition the past 2 years.

2013- 3 entries

2014- 1 entry

3rd overall

3rd weight held

History Fair – competes at the school level, District level and State level



Want Even More ?

- Robotics
- Math League
- Writing contests
- Geography Bee
- History Bee
- Spelling Bee



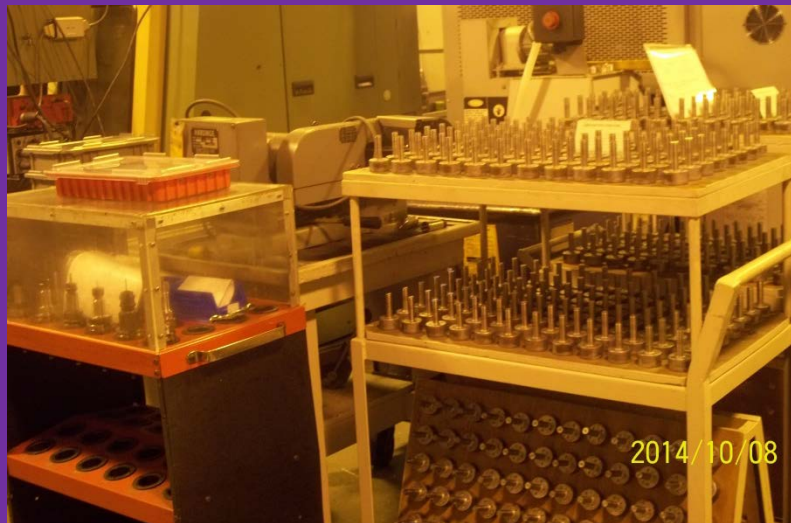
Field Trips



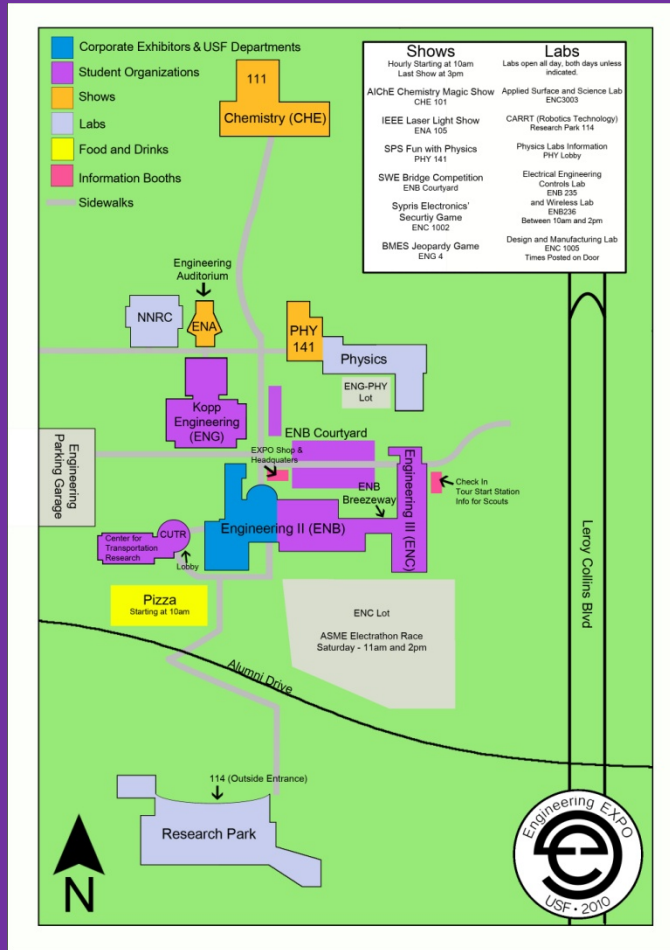
MOSI



Manufacturing Day



Univ. South Florida – Engineering Expo



Florida Hospital (formerly UCH)

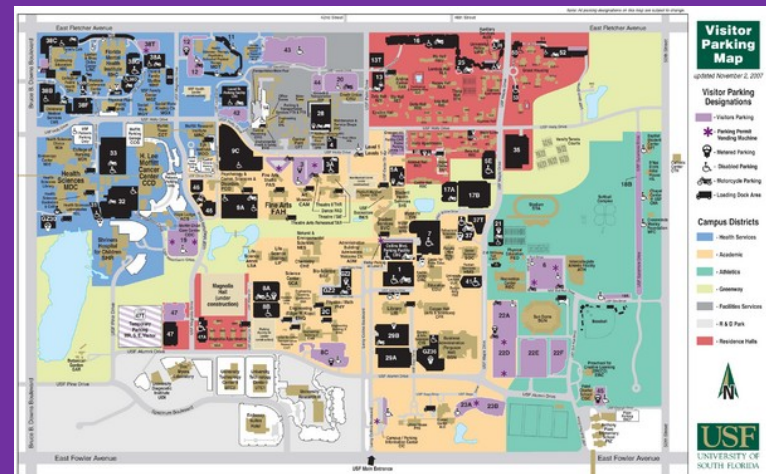


Da Vinci – Cyberknife

Bioethics discussion



Shriner's Hospital





Univ. South Florida –
College of Medicine



STEM Kids are everywhere !

- ❖ Math League – 6th , 7th and 8th grade teams were 100% STEM students
- ❖ W.O.W. team – 95% STEM
- ❖ National Junior Honor Society – 94% STEM students - 29 of 31 members
- ❖ 65% of athletic intermural teams
- ❖ 50 students nominated for USAA academic scholarships.



Integrated Units

- ❖ 6th grade – I Robot and The Breadwinner
- ❖ 7th grade – Unwind/Unwholly and *Common Sense*
- ❖ 8th grade – Adoration of Jenna Fox and Johnny Tremain
- ❖ All grades –Vinylmation

Integrated units are taught in all 5 content classrooms over a ten day period.

Criteria For Admission

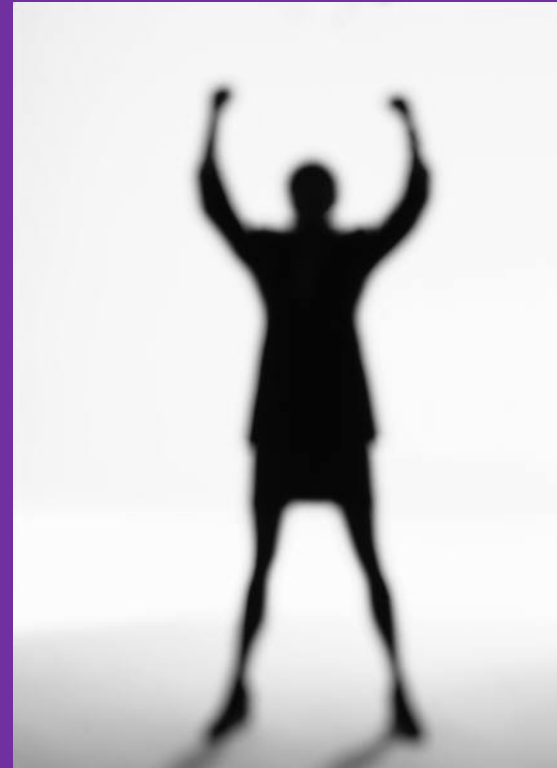
The Following Minimum Scores Are Required

Reading: Level 3 or higher
FCAT **AND**

Math: Level 4 or higher
FCAT **OR**

Science: Level 4 or higher
FCAT

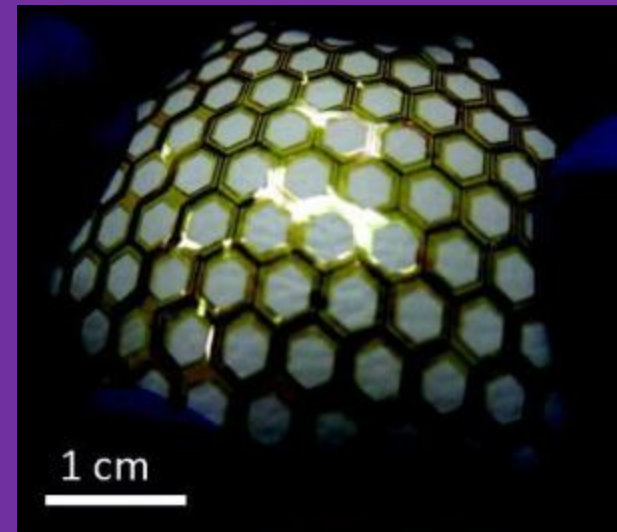
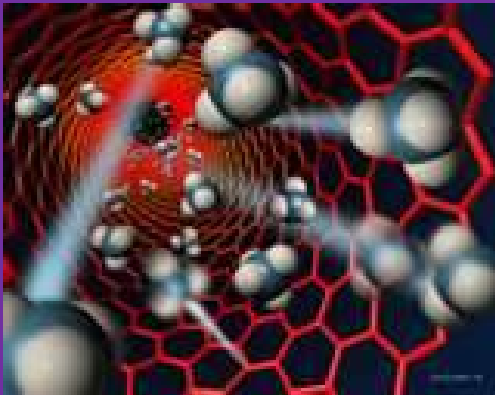
**Admission by application
only through CHOICE**



Open House

At Buchanan on Tuesday, November 1
from 5:00 – 7:00.

Apply through CHOICE (online) starting on
November 1st .



Questions ?

OPEN HOUSE! NOVEMBER 1ST

5:30 P.M. – 7 P.M.



**Buchanan Middle School
BioEngineering**

Dream it. Design it. Build it.

Hillsborough County
PUBLIC SCHOOLS
Learn & Inspire

STEM
Science, Technology, Engineering, Math,
Institutes & Academics

CTE
Career & Technical Education

Curriculum

- Only middle school that offers BioEngineering
- High School Credits Earned
- True Teaming for 3 Years
- Cross Curricular Units
- Unique Field Trips

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www.buchananbioengineering.com