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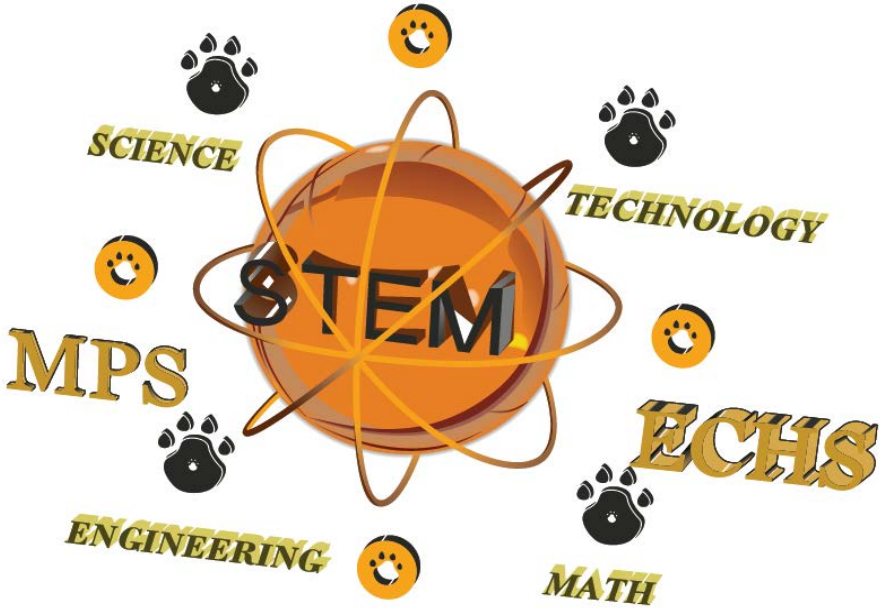
Marlborough Public Schools
STEM Early College High School Program



JOBS FOR THE FUTURE

PSW Youth Careers

QUINSIGAMOND Community College

"In times of drastic change it is the learners who inherit the future. The learned usually find themselves beautifully equipped to live in a world that no longer exists." *- Eric Hoffer*

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Recent Awards and Visit from Governor Baker

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Breakdown of STEM Student Population

Category	Total	Percent of Total	MHS
Total Enrolled (Grades 9 – 12)	292	27.8%	1051 students
Male	153	52.7%	51%
Female	138	47.3%	49%
Hispanic/Latino	93	31.8%	49%
African American	14	4.8%	3%
Special Education	15	5.1%	14%
English Language Learner	10	3.4%	16%
Low Income	116	39.7%	54%
Program Attendance Rate	N/A	97.7%	93%
Program Retention Rate	N/A	91%	N/A

STEM Student Population Data extracted from October 2017 YCC Participant Tracking System Quarterly Report

MHS Student Population Data provided by Department of Elementary and Secondary Education

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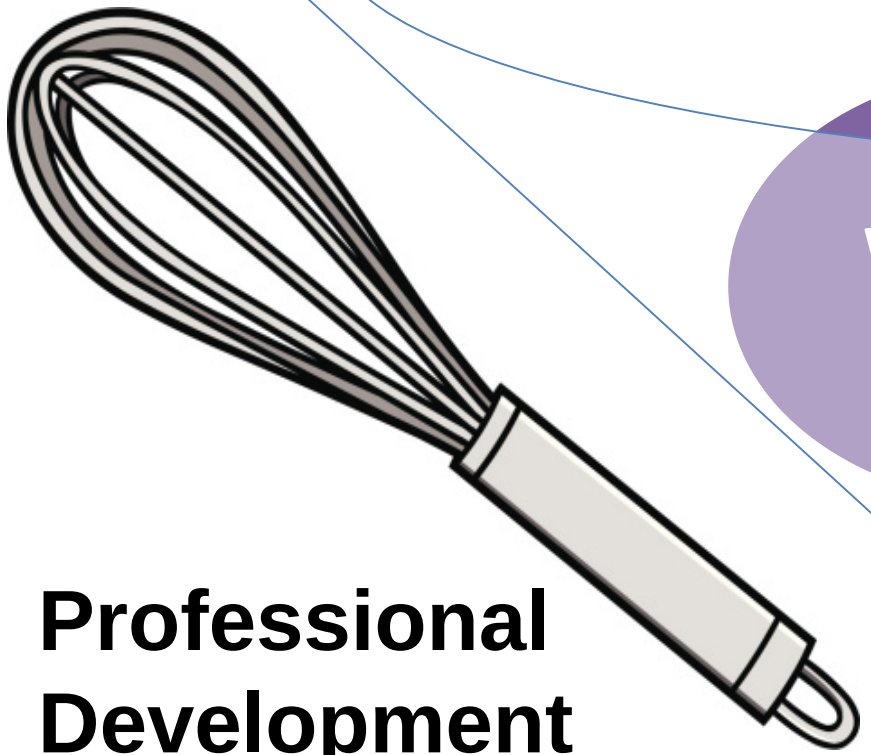
What Are the Key Ingredients That ALL Students Need?



Professional Development

- Small Learning Communities
- Early College Opportunities
- Work-Based Learning
- High-Level Curriculum Framework
- Interdisciplinary Learning

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Foundation is Extremely Important

A. Integrated STEAM model 5 – 8
   - PLC across three areas

B. Work-based Learning Model
   - Explore
   - Mentor
   - On-site

C. Individual Development Plans
   - Reflect
   - Predict
   - Vision

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Leadership Steering Committee

Raytheon

PTC®

MARLBOROUGH REGIONAL CHAMBER OF COMMERCE

Framingham State University

Boston Scientific

DOW®

QUINSIGAMOND Community College

SUNOVION
Healthy bodies, healthy lives

National Center of Excellence BATEC Computing and Information Technologies

GE

Marlborough ECONOMIC DEVELOPMENT CORPORATION

HOLOGIC™

Marlborough Hospital
A Member of UMass Memorial Health Care

Tech Networks of Boston
We're better together.

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Evolution of MPS Early College Design

FSU Writing Courses (2013-2015)

Taught by visiting lecturer

Offered twice per week for 15 weeks

100% Completion Rate

Deltas:

Too much downtime for students

Course occupied two periods per day

Students need a full year of English each year of high school

Cost

QCC Online Course (2015 Spring & Fall)

Offered through Blackboard

Variety of offerings in core-readiness and CTE areas

Deltas:

Coursework is above and beyond student's schedule

50% Completion Rate

New QCC Model (Fall 2016)

Some courses taught by approved MHS teachers

Training program for selected high school faculty

MHS college courses offered throughout 15-week college calendar every school day

Variety of offerings in core-readiness and CTE areas

Pathways linked to MassTransfer/Associate's Programs

Reduced Tuition Cost

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Early College Pathways Launched in 2016

	11th Grade	12th Grade
Computer Science	Composition I (Fall)	College Mathematics I: Pre-Calculus (Fall)
	Composition II (Spring)	College Mathematics II: Trigonometry (Spring)
	AP Computer Science Principles	AP Computer Science A
Biotechnology	Composition I (Fall)	College Mathematics I: Pre-Calculus (Fall)
	Composition II (Spring)	College Mathematics II: Trigonometry (Spring)
	AP Biology	Biotechnology
Healthcare (Nursing)	Composition I (Fall)	Introduction to Psychology (Fall)
	Composition II (Spring)	Introductory Sociology – Principles (Spring)
	AP Biology	Anatomy & Physiology I & II
Engineering	Composition I (Fall)	College Mathematics I: Pre-Calculus (Fall)
	Composition II (Spring)	College Mathematics II: Trigonometry (Spring)
	Engineering Course	Engineering Course

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2017 IT Help Desk Certificate Program – Senior Year

Fall Semester	Spring Semester
Mobile Operating Systems (CompTIA's Mobility+)	Computer Hardware and Support (CompTIA's A+)
Windows Client Operating Systems (Microsoft Solutions Associate)	Network Technology (CompTIA's Network+)
IT Help Desk Concepts (Online)	Cooperative Work Experience & Seminar

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2018 Associate's Degree in Computer Systems Engineering Technology – *Computer Support Option*

Summer 1	11th Grade	Summer 2	12th Grade
Intro to Microcomputer Applications (Waiver Exam)	Composition I (Fall)	Advanced Microcomputer Applications	Introductory Sociology (Principles)
IT Help Desk Concepts	Composition II (Spring)		Introduction to Psychology
	College Algebra (Fall)		Speech Communication Skills
	Introduction to Programming with C++ (Spring)		Technical and Workplace Writing
	Mobile Operating Systems		IT Security Foundations
	Windows Client Operating Systems		Computer Hardware and Support
	Networking Technologies		Windows Server Operating Systems
	Internetworking Principals and Protocols		Unix Operating Systems
			Cooperative Work Experience & Seminar

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Proficient/Advanced MCAS Outcomes

Year	2015		2016		2017	
SUBJECT	STEM	Non-STEM	STEM	Non-STEM	STEM	Non-STEM
Math	95%	72%	92%	57%	97%	63%
ELA	100%	88%	100%	79%	100%	79%
Science (Grade 9)	93%	67%	84%	64%	88%	65%

MCAS Data provided by Massachusetts Department of Elementary and Secondary Education

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College Readiness Data

- 52% of graduating students in 2015 matriculate into post-secondary STEM pathways
- 63% of graduating students in 2016 matriculate into post-secondary STEM pathways
- 67% of graduating students in 2017 matriculate into post-secondary STEM pathways

Year	2016		2017	
	STEM	Non-STEM	STEM	Non-STEM
Graduation Rate	100%	89%	100%	96% (only for this year)
Post-secondary Matriculation Rate	97%	86%	100%	85%

College Matriculation Data provided by Naviance