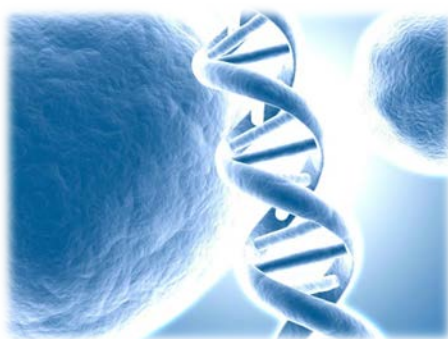


The Academies of Hopatcong High School

STEAM Academy

Science, Technology, Engineering, Arts, and Mathematics



Student/Parent/Faculty/Administrator Manual

Superintendent: Mrs. Cynthia Randina crandina@hopatcongschools.org

Supervisor of STEAM: Dr. Olga Edgerton oedgerton@hopatcongschools.org

STEAM Academy Facilitator: Mr. Peter Oesen poesen@hopatcongschools.org

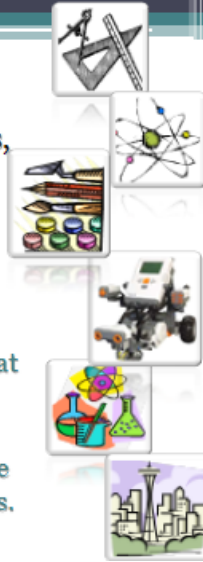
Director of Guidance: Mrs. Jaime Walker jwalker@hopatcongschools.org

Principal: Mr. Lewis Benfatti lbenfatti@hopatcongschools.org

STEAM Academy Focus – Natural Science, Engineering, Arts, and Health & Forensics careers.

Hopatcong STEAM Academy

- Students will choose a **focused concentrations** (Health/Forensics, Engineering, Arts, and Natural Sciences)
- Within each focused concentration, students take courses that will -
 - Strengthen their understanding in that area of study.
 - Provide career exploration.
 - Improve employment skills to become independent learners & future leaders.



Do you see yourself...

- Scientist
- Mechanical Engineer
- Civil Engineer
- Electrical Engineer
- Accountant
- Market Analyst
- Data Base Administrator
- Doctor
- Dentist
- Physician Assistant
- Nurse
- EMT
- Forensic Investigator
- Dietitian and Nutritionist
- Laboratory Technician
- Software Developer
- Video Game Developer
- Web Developer
- Artist
- Designer
- Architect



Do you want to study computer science?
Do you want to develop robots?
Do you want to study bio-inspired design?



Who Should Enroll?



Students who are interested in hands-on learning experiences and love to explore and discover

Students who have passion for the sciences, or math, or arts, or technology.



Students who desire to ...

- increase their skills in science, technology, engineering, arts, and mathematics
- learn how things work and make them better
- apply creative thinking to the design and development process



INTRODUCTION

Established in 2013 by Hopatcong High School to develop talent and leadership in science, technology, engineering, the arts, and mathematics, the Hopatcong High School STEAM Academy mission is to inspire, challenge, and offer invaluable opportunities to those students who will use their exceptional abilities in the 21st Century, through motivational effects of a dynamic project-based, research-based curriculum.

OBJECTIVES

- To meet students' interest in science, technology, engineering, the arts, and mathematics to offer students a variety of career opportunities and exposure to such opportunities.
- To increase student awareness, acceptance, and respect for STEAM.
- To expose students to the importance of our natural environment as it relates to the process of STEAM.
- To expose students to engineering fields and to the science and engineering learning process that scientists experience through their careers
- To provide students with career exploration and employment skills to become independent lifelong learners & future entrepreneurs.
- To have students demonstrate a willingness to take educational risks in exploring their interests.

ADMISSION

Selection will be based on performance in previous classes, teacher recommendations and a personal essay. A common Academy application is available in the Guidance office.

MISSION STATEMENT

Our mission is to ignite and nurture creative, ethical scientific minds that can potentially advance the human condition. The STEAM Academy provides teaching and learning experiences outside of the typical high school curriculum that focus on imagination, inquiry, and interdisciplinary problem-solving to ultimately foster more activity-based instruction. The program also strives to establish small learning communities housed within the larger high school environment, designed to encompass a particular course of study and personalize education through a specific content focus and hand-on experiences with experts in the fields.

RECOGNITION

When students accomplish a feat such as going through four years of the STEAM Academy, there is no doubt that they should be acknowledged in a significant way at the time of their graduation. We will recognize our students in the following ways:

- Certificate awarded at Senior Awards Ceremony
- Medal presented at graduation ceremony
- Academy involvement announced at graduation
- Academy involvement indicated on transcript

Other thoughts on additional recognition could include a publication in the local newspaper highlighting the students who graduated with Academy distinction, and creating a link dedicated to the Academies of Hopatcong High School on the High School web page. In that way, parents and the community can be updated on what their sons/daughters are accomplishing on a regular basis. In addition, there are various publications around the school that can highlight

accomplishments of the Academy. Finally, there is always the possibility of morning announcements and campaigning by posting fliers around the building premises.

CURRICULUM

The STEAM Academy's school-within-a-school structure supports constructive relationships between and among students and teachers by grouping students together each year to take a number of rigorous science, technology, engineering, art, and mathematics courses with increased student support and individualized attention. As they progress through high school, students will have more options to explore a number of curricular choices, as part of a collaborative effort established by the student, department supervisors, and their guidance counselors.

By taking various suggested Academy classes on the Hopatcong High School campus, students will be able to earn college credit in many of their A.P. Math and Science courses. A number of the Hopatcong High School faculty members are also adjunct professors at a number of collegiate institutions around the area, providing Academy students with the opportunity to earn a number of college credits without leaving the confines of the school building.

In addition to having the select experience of earning a number of low cost college credits in their academy classes, students will also be able to make connections to many institutions, both academic and professional, through their Academy seminars and Internship experiences. Seminars will be organized for various career presentations from professionals in the workforce. Periodically throughout the school year, career day field trips include bringing STEAM Academy students to various universities to explore a number of potential math, science, technology, art, and engineering careers. Independent Action Research will be explored.

COURSE OF STUDY

The following is a list and brief description of the suggested courses the STEAM Academy students could take over the course of their high school career. This list is subject to change depending on the changing requirements of the state department of education and the administration of Hopatcong School District. A complete list of classes can be found in the “Curriculum Handbook” available in the guidance office. All academy students are expected to maintain an average no lower than a ‘B’ in all of their core courses throughout their high school career, participate in career day and field trips, participate in Academy seminars and guest speaker presentations, and participate in career Internship in their Junior or Senior year. Curriculum is flexible.

CONCLUSION

The philosophy has been consistent in creating every Academy here at Hopatcong High School; prepare our student to become informed citizens ready to excel with 21st century skills, providing them with the opportunities that would not be available in a typical high school curriculum.

Students of today enter an increasingly globalized world in which teachers play a vital role. They must be good communicators, as well as great collaborators. The new work environment requires responsibility and self-management, as well as interpersonal and project management skills that demand teamwork and leadership.

The STEAM Academy will help to shape the lives of many of the young people who will become the leaders and effective citizens of tomorrow. We are so pleased to welcome you to this new program.

4 STEAM FOCUSED CONCENTRATIONS

NATURAL SCIENCES -

The study of the natural world including Biology, Chemistry, Physics, and Earth Sciences

- Biology Honors / CC
- AP Biology
- Organic Chemistry
- Botany
- Meteorology
- AP Chemistry
- AP Physics I, II
- AP Environmental Science
- Career Internship / Independent Study

ENGINEERING -

The study of the human-made world

Products or systems crafted or built to solve a problem, extend capabilities, or satisfy needs/wants

- Principals of Engineering
- Designing Apps
- C.A.D. I, II, and III
- AP Calculus /Calculus
- AP Physics I, II
- Probability and Statistics / AP Statistics
- Career Internship / Independent Study

HEALTH/FORENSIC SCIENCES -

Program is designed for students who are interested in exploring health-related fields
The scientific method of gathering and examining information about the past which is then used in a court of law

- Biology Honors / CC
- Anatomy and Physiology
- Forensic Science
- Forensic Psychology
- Athletic Training
- Organic Chemistry
- Probability and Statistics
- AP Biology
- Career Internship / Independent Study

ARTS -

To foster the true innovation that comes with combining the mind of a scientist or technologist with that of an artist or designer.

- Video Game Design & Development
- Designing Apps
- Wood Sculpture I, II
- Photography
- TV /Video Production
- AP Music Theory
- Theater Arts
- Chorus
- Band / Concert Band
- Career Internship / Independent Study

THE ACADEMIES OF HOPATCONG HIGH SCHOOL

Application for membership – please select one:

_____ STEAM Academy	_____ Future Teachers Academy
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APPLICANT INFORMATION

First Name	Last Name	School	Today's Date	Grade
Address		City	State	Zip
Home Phone Number		Student Alternate Phone Number	Parent Emergency Phone Number	

Name of Teacher Reference: _____

Prior Related Experience (summer employment, community work, clubs)

From	To	Role/Job Title	Duties
Organization or Business Name		Contact Reference Name	Contact Phone Number
From	To	Role/Job Title	Duties
Organization or Business Name		Contact Reference Name	Contact Phone Number

THE ACADEMIES OF HOPATCONG HIGH SCHOOL

Explain why you would like to participate in the academy of choice:

_____ STEAM Academy	_____ Future Teachers Academy
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Signature Section:

1. I/We verify the information on this application is true and accurate.
2. I/We have read, understand and agree with the requirements, and understand that all policy and rules for the District of Hopatcong remain in effect and apply to any volunteer or other work.
3. I/We understand that any application requires the student to attend either group or individual interview and seminar time after school.

Student Printed Name	Student Signature	Today's Date
Parent/Guardian Printed Name	Parent/Guardian Signature	Today's Date

Please return this application to the Guidance Office for further verification by the principal and your guidance counselor.

Principal referral for respect, work ethic, and dependability: (Key: 1 = Excellent, 2 = Good, 3 = Fair)

Rating	Principal Printed Name	Principal Signature	Date
Comments			

Guidance counselor:

GPA	Counselor Printed Name	Counselor Signature	Date
Comments			

THE ACADEMIES OF HOPATCONG HIGH SCHOOL

TEACHER RECOMMENDATION

ACADEMIC REQUIREMENT - as per the respective academy

The following student has applied for acceptance into one of the following Academies of Hopatcong High School:

STEAM Academy

Future Teachers Academy

Would you kindly comment of their work ethic, level of respect for others, and dependability.

Name of Student: _____

Name of Teacher: _____

Date: _____ **Rating:** _____ (1 = Excellent, 2 = Good, 3 = Fair)

Comments: _____

Teacher's Signature: _____

Please return this form *as soon as possible* to the respective department facilitator:

STEAM Academy - Dr. Olga Edgerton

Future Teachers Academy – Dr. Joanne Mullane