

QUINCY

PUBLIC SCHOOLS

HYPHER

Helping Youth Pursue Engineering and Robotics



BLUEFIN
ROBOTICS



FIRST[®]



FLL
FIRST LEGO[®] League



FRC
FIRST Robotics Competition

2017-2018

HANDBOOK



www.hyperonline.org

Welcome to Team HYPER!

Table of Contents

MISSION	3
FIRST ROBOTICS	3
TEAM HISTORY	3
2017 – 2018 TEAM GOALS	3
TEAM ORGANIZATION	4
QPS Administrators	4
QPS Team Mentors	4
Engineers/Machinists	4
Support Staff & Alumni	4
AWARDS	5
SUB TEAMS	6
Public Relations Team	6
Safety Committee	6
Drive Team	7
Robot Team	7
SCHEDULE & EVENTS	7
Fall	8
Winter	8
Spring	8
COMPETITIONS	8
RULES AND REGULATIONS	9
STUDENT REQUIREMENTS	9
ACADEMIC ELIGIBILITY	10
FUNDRAISING	10
SCHOLARSHIPS	10
FRC CONSENT & RELEASE FORM	10
COMMUNICATION	11
Email	11
Website & Links	11
BUILD SEASON SCHEDULE (2018)	12
HEALTH/INSURANCE INFORMATION FORM	14

MISSION

Our name drives our mission: **Helping Youth Pursue Engineering and Robotics.**

We believe the description below from the Judges Award captures what our team is all about:

FIRST Judges' Award for "The Solid Model"

During the course of the competition, the judging panel may encounter a team whose unique efforts, performance, or dynamics merit recognition. The judges want to give a special award today to one such team.

The judges found that a great word to describe this team is "solid". They have designed a machine that scores well in goal grabbing and ball loading – they use a variety of techniques in combination – yet their robot is not a very complex design. It is an elegant engineering solution.

While this team demonstrated solid technology, it does not stop there. They are also a 'model' to other FIRST teams. They continue to share their pit resources, as they say, "like all mature FIRST competitors." Students on the team carry the main load in the design and construction of their robot, with great mentoring and support from their engineer partners.

These award winners also bestow their own awards to fellow teams that they judge to deserve acknowledgement and recognition. This team is really a "solid model" for gracious professionalism; the team unites the efforts and energies of two rival high schools for a winning combination.

FIRST ROBOTICS

The FIRST Organization (For Inspiration and Recognition of Science and Technology) sponsors the annual robotics competition that pairs up companies or universities with high schools to encourage students to pursue careers in science and engineering. FIRST began in 1989 with 28 teams. Today, there are over 6700 teams worldwide participating.

The *FIRST* Robotics Competition challenges teams of young people and their mentors to solve a common problem in a six-week timeframe using a standard "kit of parts" and a common set of rules. Teams build robots from the parts and enter them in competitions designed by Dean Kamen, Dr. Woodie Flowers, and a committee of engineers and other professionals.

TEAM HISTORY

The 2017-2018 season marks Quincy Public Schools 23rd year involved in the FIRST Robotics Competition.

Though all activities center around the robot and competition, Team HYPER has become much more. We provide an environment for students to test out different interests and skills through hands-on experience. We are a diverse group of individuals focused on accomplishing our goals.

2017 – 2018 TEAM GOALS

- Efficient Scheduling and Communication between sub teams
- Keep it simple! Drive early, integrate subsystems where possible
- Increase "hands-on" time for programmers and electrical sub teams
- Recruitment of Mentors/Engineers/Support Staff
- Increase role of Marketing/Communications team
- Successful/Safe Build Season

TEAM ORGANIZATION

Team HYPER is made up of volunteers from our sponsor, teachers, parents, alumni, and students. Students and teachers work together from both Quincy and North Quincy High School. Engineers, machinists, and volunteers come from our corporate sponsor(s), various partnerships, and alumni.

QPS Administrators

Keith Segalla	Executive Director, Career and Technical Education and Instructional Technology
Michael Gendron	HYPER Facilitator, Quincy Public Schools
Edward Smith	Middle School Robotics Facilitator, QPS

QPS Team Mentors

Lynne Byron	Team Mentor
Donald Long	Team Mentor
Kim Pierce	Team Mentor
Paul Tully	Team Mentor

Engineers/Machinists

Rob Gordon	Engineer / Robot Mechanical
Ken Berlingo	Engineer / Robot – Mechanical
Zachary Egan	Head Engineer / Robot - Mechanical
Stephen Green	Engineer / Robot – Controls / FLL Coordinator
Bill Lebo	Engineer / Robot - Mechanical
Vincent Wong	Engineer / Robot
Tim Schow	Engineer / Robot
Nate Schow	Engineer / Robot
Katherine Vanier	Engineer / Robot
Lyman Yee	Mechanic (Retired) / Robot, Mascot, Fundraising

Support Staff & Alumni

Rebecca Egan	Kitchen Mom Extraordinaire
James Hagborg	Programming Team
Christopher Johnson	Engineering Support
James Keith	Robot Build Team
Jin Lem	Technical Support
Michelle Fitzgerald	Alumni Association
Chris McGroarty	Web Design, Technical Support, Drive Coach
Dan Rouleau	Robot Build Team
Myles Sawtelle	Technical Support
Brian Smith	Audio Visual Support
Kevin Zhang	Technical Support

*Thank you to the many Alumni & Volunteers that continue to support our team.

Posthumous Acknowledgements

Jerry Quintiliani	Honorary Coordinator
Rich LaFratta	Honorary Machinist
Ken Sousa	Honorary Machinist
Jason Savage	Alumni - Honorary Machinist/Engineer

AWARDS

7 TIME REGIONAL CHAMPIONS

2017	WPI District	Safety Award sponsored by U.L.
2016	UMass-Dartmouth Dist.	Gracious Professionalism Award
2016	Boston Regional Dist.	Gracious Professionalism Award
2015	Northeastern District	Excellence in Engineering Award
2014	Northeastern District	Finalist
2011	Connecticut Regional	Creativity Award
2010	Boston Regional	Coopertition Award
2009	Arizona Regional	GM Industrial Design Award
2008	Florida Regional	Regional Finalist
2008	Boston Regional	Automation Innovation in Control
2007	Boston Regional	Regional Champion
2007	Florida Regional	Driving Tomorrow's Technology
2007	Boston Regional	Automation Innovation in Control
2006	Boston Regional	Regional Finalist
2005	Connecticut Regional	Regional Champion
2005	California Regional	Regional Champion
2005	Connecticut Regional	Driving Tomorrow's Technology
2005	California Regional	Motorola Quality
2004	NH Regional	Regional Champion
2004	California Regional	Regional Champion
2004	California Regional	Xerox Creativity
2004	NH Regional	Driving Tomorrow's Technology
2003	NH Regional	Regional Finalist
2002	Connecticut Regional	Regional Champion
2002	Connecticut Regional	Judge's Award
2001	Connecticut Regional	Regional Champion
2000	New England Regional	Xerox Creativity Award
1998	New England Regional	Rookie All-Star Award
1997	New England Regional	Regional Finalist
1997	New England Regional	#1 Seed
1997	New England Regional	Motorola Quality Award
1996	New England Regional	Outstanding Defense
1996	New England Regional	Daimler Chrysler Team Spirit Award

SUB TEAMS

Team HYPER emphasizes that it takes many different people doing many different activities working together to make this program a success.

Many activities are centered on building a robot for competition; however, they are not limited to just the robot. We are proud to provide students with a forum for exploring potential careers in all areas. If you want to do something to benefit the team that is not mentioned here, feel free to make a proposal. We provide the environment and opportunity, but it is up to you to figure out how you can contribute to the team.

New students are encouraged to explore the different sub teams and find the one that best suits their interests.

Public Relations Team

Chairman's Award – This is the most prestigious award given by FIRST in recognition of a team's commitment and efforts to spreading the FIRST mission. This group prepares a submission in accordance with FIRST regulations documenting our team's achievements.

Marketing – Due to the nature of the competition, we need to market ourselves within the FIRST community and build our team identity. This sub team will create a marketing campaign and present it to the team for approval. This team is also responsible for communicating team activities to our community via cable TV, news, newspaper articles, and the team website.

Webpage – This group designs and updates our website, a key communications tool. In coordination with the Chairman's documentation role, the Webpage group publishes their efforts, which enhances the concept of Team HYPER. Check it out: www.hyperonline.org

Events Planning – HYPER sponsors several events through the year, including: the Lego League Tournament, Mini-meet, and Team Dinner.

Safety Committee

A safety committee exists for the purposes of ensuring our team is working safely, at home as well as at competition. This sub team is charged with performing an annual safety survey of Team HYPER's facilities and improving/modifying areas of concern. They also make sure members of the team are working in a safe manner at all times during the build season, and then help the team follow FIRST safety standards at competition.

Drive Team

The drive team consists of two robot drivers, a human player, scouts and coaches. Drive team tryouts include an interview, test on the competition rules, and driving test. Being a driver is more than just maneuvering the robot well. You need to be able to communicate with your team members as well as with other teams; you need to think quickly, know the nuances of the rules and be our ambassador to other teams. It is a huge responsibility, but also provides many rewards.

Robot Team

The entire team participates in brainstorming for the robot and may be a part of sub teams that are responsible for designing, prototyping, modeling, fabricating parts, assembling, and programming the robot.

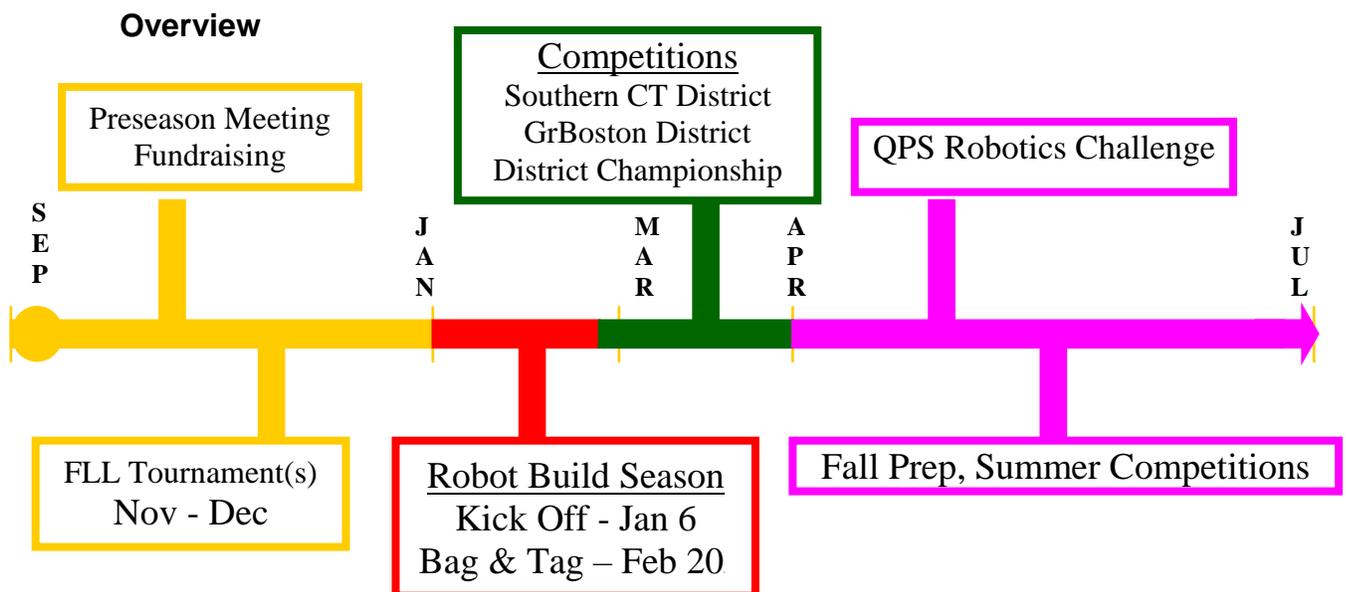
Examples of our Robot Sub Teams are:

Mechanical
Electrical
Programming

Pit Crew - During the competitions, the pit crew will be in charge of maintaining and fixing the robot between matches. To qualify for pit crew, students must demonstrate an understanding of the subsystems and how they work, competency with tools, attention to detail, and working knowledge of the rules. There are limited positions and students will be selected after a written test and interviewing process.

SCHEDULE & EVENTS

Unless otherwise specified, all events take place at the QPS Robotics Area, Basement of Bethany Church, 18 Spear St. Quincy. Following is a draft of our season schedule.



Fall

Fall activities include recruiting new members, fundraising, team building, safety training, and getting new members up to speed before the build season begins.

As part of the effort to encourage science and technology, Team HYPER supports the five Quincy Middle Schools as they compete in the State Qualifying Lego League Tournament. The entire team is expected to take an active role in supporting our district-wide robotics programs.

Winter

After the Competition Kickoff, usually the first week of January, we have six weeks to brainstorm, design, and build a robot. We meet at the Robotics Area, Bethany Church (Basement) almost every day during these six weeks. The updated schedule will be given out in January. The tentative schedule for this season is attached to this document.

Spring

This is our travel & competition season. We also oversee and sponsor the Quincy Robotics Challenge Lego Tournament for local middle school teams held at one of our school facilities.

COMPETITIONS

Our first competition is the Southern Connecticut Regional in Fairfield, CT. Students and Parents/Guardians will be responsible for the cost of this trip. Students should participate in all fundraising activities to help defray the cost. As long as they have the requisite on-task hours, everyone on the team is eligible to attend.

Our second competition is the Boston Regional in Revere, MA. As long as students have the requisite hours, everyone on the team gets to attend this regional for no cost to the students. Students/Parents are responsible for the cost of meals.

Competition	Location	Dates
Southern CT District Event	Fairfield University, Fairfield, CT	March 16 to 18
Greater Boston District Event	Revere HS, Revere, MA	April 6 to 8
NE District Championship	Boston University	April 11 to 14

Competitions usually take place over the course of 2 or 3 days:

Day 1 – Check in and inspection. Practice Matches

Day 2 – Qualification Matches

Day 3 – Qualification Matches, Finals

Students are expected to behave appropriately at all times when at competition. When you are wearing team gear, you represent Team HYPER, Quincy Public Schools, and our sponsors. Your conduct reflects on the entire team. Respect and courtesy are requirements. Negative behavior will not be tolerated at any time.

RULES AND REGULATIONS

- ◆ Safety glasses are required when working with tools, operating equipment, and while in designated areas.
- ◆ Students must receive safety training and be signed off before using any tools.
- ◆ Do not use power tools without adult supervision.
- ◆ No running or horseplay allowed in the Robotics Area.
- ◆ Clean Up will start ½ hour before departure time. Students may not leave early without first cleaning their share of the robotics area.
- ◆ All tools and materials must be put away in their proper spot each night.
- ◆ Ongoing projects, along with associated materials may be stored neatly in one place. However, tools will be put away.
- ◆ Robotics area must be kept clean at all times. We expect all participants to clean up after themselves. Floors and worktables will be swept at the end of each day.
- ◆ Adults (Mentors and Volunteers) are here to help you. Please give them your respect and appreciation at all times.
- ◆ **Students will sign-in and sign-out each day. If you forget to sign-out, you will not receive any credit for that day.**

STUDENT REQUIREMENTS

HYPER is a year round program. Though many hours are required, your schoolwork comes first. You cannot use Robotics as an excuse. Do your homework during downtime and in between activities.

You must fulfill the following requirements to attend events with the team.

1. All team members are required to raise \$150.00 team fundraising requirement in order to participate in robotics. If this requirement is not raised students may still participate, however, will not be given a team t-shirt or allowed to attend team events and competitions.
2. During the build season students must work a minimum of 60 hours to be eligible to attend the Local Regional Tournament.
3. During the build season students must work a minimum of 80 hours to be eligible to receive a team jacket and attend the Travel Regional.
4. Students must participate in fundraising activities such as Canning, Ad Sales, Gift Card Sales, FLL Tournament, Bottle & Can Drives or any others.
5. Students must maintain academic and social standards equal to the Quincy Public Schools athletic regulations.
6. Behavior at all events will be according to the Quincy Public Schools student handbook. Failure to comply can: (1) Lead to school administered disciplinary action. (2) Dismissal from the team

Team Administration has the right to suspend or dismiss students at any time.

ACADEMIC ELIGIBILITY

According to the Quincy Public Schools HYPER Robotics Rules & Regulations, students must maintain academic and social standards equal to the following Quincy Public Schools athletic regulations:

- a. During the last ranking period preceding the contest, a student must secure at least 25 credits and may not receive more than one failing grade.
- b. To be eligible for fall sports, a student must secure at least 25 credits and not have more than one failing grade on the previous academic year final report card.
- c. All grade 9 students are eligible for fall sports.
- d. The academic eligibility of all students shall be considered as official and determining only on the date when the report cards for that ranking period have been issued.

The robotics team maintains an “academics first” policy and ALL students will be held accountable for their academic eligibility. The team mentors will monitor grades and offer assistance through progress reports, homework club, and peer tutoring. We want and expect all students to be successful, however, in the rare chance a student is deemed “ineligible” due to the above policy, they will be unable to participate in all team activities until they earn grades deemed “eligible” by QPS policy.

FUNDRAISING

Students are expected to participate in fundraising regardless of their travel plans. All students are required to raise \$150.00 for the team. If students are traveling with the team, most additional fundraising efforts will go directly towards the students travel expenses.

Fundraising activities include: canning, candy sales, gift card sales, bottle/can drives, car washes, and advertisement booklets.

If you have any other ideas for raising funds, talk to any mentor.

SCHOLARSHIPS

Hundreds of scholarships worth over \$20 million are available to FRC students. It is never too early to start looking at what is being offered.

For more information: <http://www.usfirst.org/aboutus/scholarships>

FRC CONSENT & RELEASE FORM

In addition to all QPS forms and regulation, participants of QPS HYPER Robotics must complete the FRC consent form in order to travel to competitions and be part of our official team roster. For this season, these forms must be done online and directions will be given out during the build season.

COMMUNICATION

It is each student's responsibility to make sure their information is up to date on the Team Contact List.

Email is our main mode of communication. It is your responsibility to check your email on a daily basis. This becomes especially important when we have last minute meeting cancellations due to weather/snow storms. If you do not have email access, you must designate a friend who will relay all announcements to you.

Email

The team contact is qps.hyper.robotics@gmail.com

Website & Links

The team website is also a source for updates and schedules:

www.hyperonline.org

Our Alumni have established an association here:

<http://www.hyperalumni.org/>

To keep up to date with the latest updates from FIRST:

www.usfirst.org

A good source of information from the entire FIRST community:

www.chiefdelphi.com

BUILD SEASON SCHEDULE (2018)

IMPORTANT: The build schedule **will change. A live version can be found at:

<https://hyperonline.org/events/schedule/>

Date		Description	Times	Meal
Wednesday	1/3/2017	Mandatory Safety Training	PPD	
Saturday	1/6/2018	Kick Off	Home	
Sunday	1/7/2018	Download & Read Rules	NA	
Monday	1/8/2018	Download & Read Rules Adult Strategy Meeting - 6:00 at Blue Fin	NA	
Tuesday	1/9/2018	Discussion and Strategy Brainstorm at Quincy High!	3:30-5:30	
Wednesday	1/10/2018	Discussion and Strategy Brainstorm at Quincy High!	5-8	
Thursday	1/11/2018	MAKEUP Safety Training	3:30-6:30	
Friday	1/12/18	All Forms Due Brainstorming Design & Preliminary Prototyping Building Field Components	5-8	-
Saturday	1/13/2018	Presentation of Design & Drive Selection Begin Prototyping Field and Robot	12-6	
Sunday	1/14/2018	Prototyping - Proof of Principle	1-6	
Monday	1/15/2018	Off Day - MLK Day	NA	
Tuesday	1/16/2018	Prototyping - Proof of Principle	3:30 - 6	
Wednesday	1/17/2018	Prototyping and Design 7PM Parent Open House	5-9	
Thursday	1/18/2018	Off Day	NA	
Friday	1/19/2018	Prototyping and Design 7:15 Programming Meeting	5-9	
Saturday	1/20/2018	Prototyping and Design Lunchtime: Design Discussion Travel Contracts due	10-6	L
Sunday	1/21/2018	Prototyping and Design \$150 Fundraising Requirement Due (if travelling)	1-6	
Monday	1/22/2018	Study for Mid Terms - OFF	NA	
Tuesday	1/23/2018	Study for Mid Terms - OFF	NA	
Wednesday	1/24/2018	Study for Mid Terms - OFF	NA	
Thursday	1/25/2018	Study for Mid Terms - OFF	NA	
Friday	1/26/2018	Design and Drafting	3-9	D
Saturday	1/27/2018	Design and Drafting \$100 Travel Payment Due Chairmans Homework due via email	10-6	L
Sunday	1/28/2018	Design and Drafting	1 - 6	
Monday	1/29/2018	Off Day	NA	
Tuesday	1/30/2018	Construction ALL Fundraising Requirement Due (if not already paid) DriveTeam & PitCrew Sign Ups	3:30 - 6	

Wednesday	1/31/2018	Construction Scholarship Night (6PM) DriveTeam & PitCrew Sign Ups	5-9	
Thursday	2/1/2018	Construction DriveTeam & PitCrew Sign Ups	5-9	
Friday	2/2/2018	Construction DriveTeam & PitCrew Sign Ups	5-9	
Saturday	2/3/2018	Construction	10-9	L D
Sunday	2/4/2018	Construction/Super Bowl Drive Team Posting	12:30 - 4:30	
Monday	2/5/2018	Off Day	NA	
Tuesday	2/6/2018	Redesign and Construction	3:30-6	
Wednesday	2/7/2018	QHS STEM Fair	NA	
Thursday	2/8/2018	Redesign and Construction Woodie Flowers DUE 3PM Chairman's DUE 3PM	4-9	D
Friday	2/9/2018	Redesign and Construction	4-9	D
Saturday	2/10/2018	Redesign and Construction	10-9	L D
Sunday	2/11/2018	Redesign and Construction FINISH PRELIMINARY BUILD \$200 Travel Payment Due	1-9	D
Monday	2/12/2018	Off Day	NA	
Tuesday	2/13/2018	Debug Robot	5-9	
Wednesday	2/14/2018	Debug Robot	4-9	D
Thursday	2/15/2018	Debug Robot - Driver Practice Dean's List Submission DUE 3PM	4-9	D
Friday	2/16/2018	Debug Robot - Driver Practice	4-9	D
Saturday	2/17/2018	Driver Practice - Fine Tune Final Travel Payment Due	10-9	L D
Sunday	2/18/2018	Driver Practice - Fine Tune	1-9	D
Monday	2/19/2018	Driver Practice - Fine Tune	3-9	D
Tuesday	2/20/2018	Driver Practice and BAG IT!!!	2-5	
March 16 to March 18	Southern CT District - Fairfield University			
April 6 to April 8	Greater Boston District - Revere HS			
April 11 to April 14	New England District Championship - Boston			

****IMPORTANT:** The build schedule **will** change. A live version can be found at:

<https://hyperonline.org/events/schedule/>

HEALTH/INSURANCE INFORMATION FORM
QUINCY PUBLIC SCHOOLS



Student Name: _____
Last First DOB: _____

Sex: Male ___ Female ___ School _____ Grade: _____

Address: _____

Home Phone: _____ Contact(s): _____

Work/Cell Phone: _____ Additional Info: _____

Emergency Contact: _____ Relationship: _____

Home Phone: _____ Cell/Work Phone: _____

Health Conditions: (Specify) _____

Allergies: (Specify type, food, seasonal etc and prescribed medications, epi pen etc)

Does your child take medication on a daily basis? *Yes: _____ No: _____
(Including over the counter medication)

If yes, name, dose, and time of medication(s): _____

Does your child take medication on an as needed basis? *Yes _____ No _____
(Including over the counter medication)

If yes, name, dose, and time of medication(s): _____

Are there any restrictions on your child's activities? *Yes _____ No _____

If yes, please specify: _____

QUINCY PUBLIC SCHOOLS

Do you grant permission to contact family physician or hospital emergency room if you cannot be contacted? Yes _____ No _____

Do you grant permission for administering of anesthesia if necessary?
Yes _____ No _____

I give permission for my child to take the following medication if needed:

Acetaminophen _____ Ibuprofen _____ External Ointments _____

Can your son/daughter swim? Yes _____ No _____

Does your son/daughter have permission to go swimming? Yes _____ No _____

*****MANDATORY*****

COPY OF INSURANCE CARD MUST BE PROVIDED FOR EVERY PARTICIPANT OF QPS HYPER ROBOTICS

**PLEASE COPY AND SUBMIT WITH THIS FORM
(Or send with student to be copied at school)**

Health insurance provider: _____ Policy # _____

Primary Care Physician _____ Phone # _____

I _____ the parent/guardian of _____ from _____ School

believe my child can successfully participate in all aspects of robotics (and this trip). In case of emergency I realize that every effort will be made to contact me. I also give permission for the school staff to seek medical treatment if necessary.

Parent/Guardian signature: _____

Date _____

* will be required to complete medication administration forms provided by school nurse.

QUINCY PUBLIC SCHOOLS



For more info on HYPER Robotics

Bethany Church
18 Spear Street, (Basement Floor)
Quincy, MA 02169

Michael Gendron, Facilitator

Email: qps.hyper.robotics@gmail.com

Webpage: www.hyperonline.org

Quincy School Committee

The Honorable Thomas P. Koch, *Chairman*
Emily A. Lebo, *Vice Chairman*

Anthony J. Andronico
Paul L. Bregoli
James V. DeAmicis
Douglas S. Gutro
Kathryn E. Hubley
Emily A. Lebo

Dr. Richard DeCristofaro, *Superintendent of Schools*
and Secretary to the School Committee

Quincy Public Schools does not discriminate on the basis of race, color, sex, sexual orientation, gender identity, religion, national origin, or handicap, in its educational activities or employment practices.

Quincy Public Schools - 2018
www.quincypublicschools.com