

- MAX CHARACTER LIMIT = 10,000

- Potential Styles
 - Anecdotal, Narrative, Sequencial, Cause & Effect,
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- Our Mission & Vision
- “The 5740 Way”
 - How it leads all our initiatives
 - How it builds our students
 - How it sets us apart
- Activities & Achievements:
 - H&book
 - NC/RC
 - FLL startup (camp & mentor team)
 - Sustainability
 - FTC Mentorship
 - Summer Camps
 - Senior’s FIRST
 - Project Management
- Team Structure
- Number of mentors & students
- Exp& on executive summaries

FORMAT IDEA:

TEAM OVERVIEW

BACKGROUND & REASON

OUR MISSION & VISION

H&BOOK

VALUES

TEAM STRUCTURE

- 3 leads: Nontech, Mechanical, & Control Systems

5740 WAY

INREACH

CAD

- Run by student Aaron Briercheck & mentor Mr. Denniger
- Began September 12
- Learn basic engineering & CAD principles
- Homework in between meetings
- No prior experience needed

SOFTWARE

- Run by a lead mentor, Mr. Zacherl
- Started in the summer with Udemy
- During the fall & winter, used 2023's robot & experimented with the code/started from scratch as a way to learn code
- Given homework some weeks to better prepare ourselves for the next session
- Very helpful & everyone was welcome to come in, no prior experience needed :)

WORKSHOP

- Run by Mr. Trost
- Began October 11
- Learned how to use tools (Milling machine, b&saw, cold saw, lathe, b& saw, metal bending, & screw tapping)
- No homework
- No prior experience needed

MENTORSHIP

FTC

- Run by mentor Mr. Lind
- Began at the start of the school year
- Learned how to use CAD, use tools, use basic block code & use 3D printers
- Homework
- No prior experience needed

FLL

- Summer camp in June (North Catholic Summer Camp)
 - One week -> younger kids in morning, older in afternoon
 - Introduced them to lego SPIKE kits & interactive maze
 - Learned basics of code & various sensors
- Summer camp in August (FLL Summer Camp)
 - One week -> all ages
 - This year: focused on making an FLL robot in five days & engaging in the 2022 FLL challenge, garnering interest
 - Prior years: focused on making an attachment for an FRC chassis & engage in a simple drive + pushing challenge
 - Taught kids basics of building, coding, teamwork, & gracious professionalism

OUTREACH

SENIOR'S FIRST

- Taught seniors how to use FaceTime & other applications
- Demoed the robot & spoke about robotics

SUMMER CAMPS

- All under FLL

MARS' NEW YEAR

- Demonstrated the robot with Quasics & MARS Association
- Allowed the kids to feed the robot by putting cones & cubes up to the claw
- H&ed out buttons & bracelets while explaining what our team does

CHRISTMAS ON TROY HILL

- Robot make young people happy
 - Allowed the children to drive the robot through an obstacle course
- Had a button making station

NC/RC

- Hosted at North Catholic
- Two day event: First day - setting up the field & pit; Second day - actual event
- Had 17 teams attend from PA to NY

SUSTAINABILITY

FUNDRAISING

- Christmas Greenery
- FLL Summer Camp (separate from North's summer camp)
- **NC/RC**

SPONSORSHIPS

- See list on the website :)

Team 5740 began as a small group of friends with a passion for STEM & desire to spread it. Since our inception we strive to build students of creativity, leadership & professionalism and connect them to a future enlightened by their STEM experience. As we approach our 10th competition year, we still hold this simple goal: "To see our communities served by our team members equipped with gracious mindsets & professional skill sets." We draw this inspiration from our Faith & from FIRST. North Catholic High School aims to form "Christ-centered young adults who are leaders in their communities." 5740 seeks to be Christ-like by using our STEM skills to serve those around us. Servant leadership, we believe,

means prioritizing the needs of others as we work hard to meet shared ends. No matter what initiative 5740 endeavors, we exist to build students. We may be building robots, we may be engaging in community outreach, but whatever the task, it is a means to equip students for their future. While STEM-centric, successful FIRST teams operate as small businesses & provide a training ground for all skill-sets & we strive to emulate this.

Our mission, vision, & values are carried out by what we call The 5740 Way. This is the way in which we approach all team efforts. When we work on projects or Outreach events, there are a few goals in which we always try to achieve. One, we follow a specific design process. All things we do should be cost effective, sustainable, intuitive, outlined, have clear vision, & a mission for who we are impacting. Two, we want the process we use to be transferable across initiatives, so that events run as efficiently as possible & can be built upon. Three, we want to engage as many people as possible. We emphasize engaging new students on the team so they can grow as we also seek to involve our community at large. FIRST teams or local groups, we strive to engage all in our mission. Overall, The 5740 Way is how we set ourselves apart as a team & what drives all of our initiatives to make the largest impact possible.

For inreach, we cover 3 areas: CAD, Software & Workshop training. Our CAD curriculum was designed & taught by a student from the fall until the start of build season. This allowed new members to be trained to use CAD & old members to practice their skills. For Software inreach, we taught new students the basics & allowed veteran members to practice their skills by experimenting with the prior season's robot. For both, homework was assigned weekly for students to practice & become comfortable with the concepts. Lastly, workshop training was led by a mentor so all students can become comfortable & equipped with the skills needed to be safe & efficient when machining parts throughout the season. These meetings allow for members to be involved in different sub-teams.

The FTC team we oversee, 12578, is run as an extracurricular class through our school by 1 of our team mentors. This class is offered for 2 years. The 1st year introduces students to the program, FIRST, & skills such as CAD & code. Though it is an introduction, these team members still have a chance to actively engage with designing, building, & coding the robot, being the main contributors. The 2nd year allows students who previously took the class to act as student mentors within the classroom & hone in on specific skills leading up to the season. However, student mentorship is not limited to the class alone. Other members of our FRC team can function as mentors during after school meetings if they so choose to work on the robot, & some choose to engage in FIRST by participating on both our FTC team & our FRC team simultaneously.

FTC has also provided us with other opportunities we otherwise may not have. In the 2022-2023 season, we hosted one of the FTC Qualifiers at our school. Many FRC members participated in hosting the event. Additionally, we had the opportunity to work alongside MARS Association with their FTC teams to host the FTC Kickoff at our school. Many FRC students assisted at this & it provided an opportunity for FTC teams in attendance to see the field & game

pieces up close. The FTC members worked with FRC members to brainstorm ideas after the announcement.

Currently, we are in the works of starting various FLL programs in the area at local middle schools. Thanks to an FLL summer camp we hosted this past year, we successfully assisted in starting a FLL team at a local middle school. We also held an interest meeting at another local school before moving forward with registering teams. We plan to start mentoring & holding meetings in the spring to prepare the students for their competition season.

The summer camps were one of our main ways to try & start mentorship early on as we develop future plans. At the camps, we focused on having the kids build a robot in five days by assigning groups to different challenges from the 2023 game. Students completed engineering notebooks throughout the week, learned about the design process & block code, & were engaged in various challenges against other teams. The camps are what initially sparked interest in the local middle school, led to a team being started at another & even encouraged attendees to join FIRST teams in Pittsburgh as we work to start our own.

Christmas on Troy Hill is an outreach event that we assist with & is run by our school. This event seeks to serve underserved families around the Troy Hill area with food, gifts, & various activities. We have a station where we demonstrate our robot & set up an area for kids to use the robot in some sort of game/challenge. This event combines our faith as we serve others through our community with STEM advocacy to the community as we were featured in the Pittsburgh Catholic magazine, & shows a unique opportunity for our team to come together with the community at large.

TRETC is an outreach we have attended for the past 4 years. This year we presented alongside Team 2656, Quasics, to inspire administrators & educators to use project-based learning in the classroom. We discussed how we blend experiential learning into the classroom with 1 of our lead mentors being the AP Physics teacher & further discussed how we as a team learn through FRC experiences. We hosted a presentation panel, had a booth where any attendants could come up & ask questions about our team, & met with other FIRST teams.

In our own school, we also strive to increase STEM education & awareness. In 2015, our founding year, our school lacked STEM electives. We worked with administration to start 9 STEM electives, including the FTC class. This has now expanded to 18 STEM electives offered with 500+ students involved. Many of the newest electives are thanks to administration involvement of a team lead mentor & the push for STEM interest by many of our students. FTC & FRC members often go on to engage in other STEM electives, like intro to engineering, the robotics class, the trades course class, etc. We encourage educators & administration to offer FIRST programs as an elective that can engage students in project based learning without the extracurricular commitment.

Our team acquires sponsorships & engages in fundraising in various ways. Our main fundraiser is our Summer Camps we host. This fundraiser is a long term effort that we host

annually. We have hosted camps since 2017, having impacted 200+ children. In the past, we hosted a Robot in Five Days camp where we introduced kids to FRC. This past year, we switched it to an FLL camp as our recent efforts go towards that.

For sponsorships, our business team runs a dedicated sponsorship campaign each year. This sponsorship campaign aims to engage new sponsors & grow relations with prior sponsors. Some new sponsors are purely by search or personal team connections, but we also seek professional networking opportunities. One of the main ways we present ourselves to companies is through the Pittsburgh Robotics Network Discovery Day (PRN). At PRN, the team splits their efforts into three areas: running our booth, going to company booths & overseeing the robot demo station. This event allowed us to not only engage with companies, but also to engage them with our team. We traded business cards & talked with all companies in attendance. One way we continue to engage is by scheduling facility tours with companies, building future connections we can pursue. Even if we don't obtain a sponsorship, we seek to build our network & spread our mission to a broader community through the event.

One major way our team engaged the community with FIRST values & spread our mission was our offseason competition, NC/RC. After hosting the competition for the first year, we had overwhelming positive feedback from teams in attendance, & the plan is to make it an annual, lasting connection. The competition gives opportunity for anyone in our community to come & watch, as well as bringing other FIRST teams to our area where we can truly spread our mission. We reached an even broader audience with our event being replayed on local Armstrong Channel 10 & a segment in the local paper. We also offered a tour for interested seventh & eighth graders, giving them a VIP experience with close up seats for the event, a personal overview of our team, a pit tour of our robot, & a tour of our workshop. Because of our sponsorship connections, the event is a sustainable experience for all & a great demonstration of our team & its efforts. It has been a way for us to maintain connections with a close sponsor, sparking future plans that are currently in the works besides just the competition as a way to fuel our team's sustainability. We have already seen success in creating a pipeline from this event to our team, & as we work to grow the FIRST programs we oversee, we will use events like these to make lasting connections.

Overall, 5740 seeks to spread STEM awareness throughout our community & within our team.