

FIRST TEAM 2486 THE COCONUTS PRESENT:
An Epic 2012 Chairman's Award Adventure
"The Time Capsule"

Saturday night at the 2022 FIRST Championship, rookie team 12486 was packing the pit when a member noticed something out of place. He picked up the object & realized it was a time capsule from an FRC team made 10 years before. When the capsule was opened, a small silver disc about 5" across was found. A mentor recognized it immediately as an archaic method of storing data from around the turn of the century. He pulled out an ancient computer & together the team perused through the files on the disc. "Congratulations & welcome to FIRST! We, the CocoNuts, FRC Team 2486 want to take you on our journey." 12486 settled in to watch.

"We're from the rural town of Flagstaff, AZ & began in '07 as the 1st FIRST team in Northern Arizona (NAZ). After attending the FTC Championship in ATL, we dreamed of returning as a Chairman's team before our rookie members graduated. We made it our mission to bring STEM education to all the tiny, underrepresented communities in our vast NAZ region.

"Featured yearly at the Coconino County Fair, Flagstaff Festival of Science, events at local schools, & as guest speakers at meetings of the FUSD board & service organizations, 2486 is a Flagstaff treasure. We've presented for the Arizona Center for Afterschool Excellence & the Arizona Science Teachers Association. In '10, we traveled to Prescott to present to 1000 students in 1 day.

"We began the NAZ FLL program from scratch. 2486 spearheaded the NAZ FLL expansion, growing from 21 teams in '08 to 33 teams in '11 despite school closures. Our vision of spreading STEM excitement to outlying areas is now a reality with FLL teams in Leupp, Ganado, Whiteriver, & Chinle on the AZ Native American Reservations. Growth in NAZ has necessitated the addition of a 2nd regional, to be run by 2486 in Winslow in '12 in addition to our annual event at CHS. Hazardous travel conditions made it impossible for 8 teams to make it to our Dec. competition, but we are providing the opportunity to compete in a "Snow Invitational" in Apr. We set our NAZ teams up for success by hosting a yearly coaches training & scrimmage. We travel to PHX each Dec. to volunteer at FLL state, where the coaches keep the energy up by emceeing. Former FUSD Superintendent Kevin Brown says, "I'm told that the growth of FIRST in NAZ has been among the most rapid in the nation: a result of the CocoNuts' efforts! The CocoNuts are truly inspirational across our community & in Arizona." We support FLL programs across the country: 3 mentors will fill key roles at the S. Dakota event after a tragic plane crash.

"In '09, NAU invited us to assist with the Summer Enrichment Program. In 3 summers, we taught almost 200 underprivileged youth from all over AZ. We designed a NXT curriculum with a Mars theme. Many alumni went on to join FIRST teams, including 2486, & there was a marked improvement in students' attitudes toward school & enthusiasm for learning.

"That year, we were asked by FIRST to take over as AZ FTC Affiliate Partners. We ran the AZ FTC Championship on the same day as NAZ FLL to create the High Altitude Robotics Extravaganza. 2486 began an annual FTC scrimmage, & in '11 hosted the 1st kickoff event in PHX featuring a workshop by National Instruments. Our quality events have drawn teams from CO, CA & Mexico. Huge growth in AZ has caused our event to grow from 8 to 21 teams in 3 seasons & to 2 divisions next season."

Images flashed on the screen of 2486 being featured on local & state television, radio, newspapers, & websites, & glimpsed on national media. "At the '11 FRC AZ regional, we were chosen to represent AZ on statewide television. We've been featured in the media 16 times just in '11-'12! The 'Nuts are regularly invited to the KAFF Flagstaff Morning Show for live interviews about upcoming events.

"Our partnerships grow stronger each year. Since our beginning, FUSD has enthusiastically supported 2486 by providing venues for events & outlets for FLL growth. NAU students & faculty volunteer as mentors, judges, & referees at FIRST events. In '11, an NAU engineering student club was formed by FIRST Alumni to support 2486 & our events. Following our success at AZ FRC '11, 2486 was invited by the Flagstaff 40, the top 40 Flagstaff organizations & businesses, to present about our outreach efforts. These community leaders were so impressed with our accomplishments that a partnership was offered on the spot. Motor Excellence CEO Michael Manson challenged his peers to match funds his business could provide, & the challenge was taken immediately. To honor his commitment to STEM, we named AZ FTC '12 for Motor Excellence. Financial support comes from numerous businesses, the Flagstaff Chamber of Commerce, NAU & local community members with no direct team affiliation. The City of Flagstaff Department of Economic Development has seen the efforts of 2486 as a chance to help stimulate the local economy through the education of youth in high tech fields, leading to more "locally grown" STEM professionals. WL Gore & Associates, a multinational engineering firm, has taken us under its wing, providing financial, mentor, & material support.

"Each 'Nut is responsible for raising their own travel funds. Numerous events are held each year which are spotlighted in the local news. Community partnerships make events such as spaghetti dinners, carwashes, & our new Halloween Bash possible. Businesses donate space, food, & prizes. NAU & CHS clubs volunteer at our Halloween event. We were fortunate to be chosen for jcpenny & Boeing grants in '12. Now in its 2nd year, our partnership with jcp goes beyond financial support through demonstrations, media attention & recognition of our manager at FTC '11.

"We have a strong commitment to mentoring & service. Each 'Nut is required to mentor another FIRST team or to work with youth in the community. As professionals mentor us, we mentor the newest generation of innovators. We mentor local teams in person & teams hundreds of miles away via social networking in both technical & non-technical areas. FLL, FTC & FRC Teams have connected with us from Mexico, OR, all over AZ & the Navajo Nation in the off season & at competition. We presented a workshop on the Chairman's Award at our local kickoff, & are constantly corresponding with rookie coaches. 2486 mentored over 220 hrs this year alone! FTC Team 5042 says, "Can't believe we are part of a Championship Alliance our rookie year but a lot of that is thanks to the additional support the CocoNuts provided our team through both the kickoff & scrimmage. These were critical to our success to help us get up & running & to make connections as we encountered build challenges." Team service activities include an adopted avenue & hiking trail, visits to the St. Mary's food bank & judging local science fairs. In '11 & '12, we dedicated over 820 hrs in outreach & 2200 hrs running FIRST events!

"To encourage more youth to discover robotics, we created a summer camp called COCONUTS: Challenging Outrageous Camp of Nutty Unique Technology & Science. It's not just a way of engaging students, but a 1st step toward active research for Coach Sapio's Master's in Science Teaching. The final product will be a day-by-day detailed guide to NXT for rookie FLL teams. We created lessons & mini challenges centered on essential programming skills. At the end of the week, 36 campers competed in a mini FLL challenge with a NAZ theme, created from scratch by 2486. In '12 we plan to launch COCONUTS 2.0 in addition to the beginning course.

"All 8 graduated "AlumNuts" are in college. Almost \$2 million in scholarships have been offered to the AlumNuts, who are studying at NAU, WPI, U of Chicago, U of Rochester, Stanford & U of Alaska. Most chose STEM careers such as robotics engineering, computer science, mechanical engineering, marine biology & physics education. Larry coaches a FLL team. Tomas & RJ volunteered at local FLL events. Vitas & Jacob will volunteer for FRC '12, & Maddie will referee for a 2nd year at 2 FRC events. AlumNuts mentor 2486 from near & far.

"2486 is proud to be seen by FIRST & our community as role models because of our commitment & passion for STEM education. We are fostering a love of learning in the next generation of scientists &

engineers. We're continually recognized by FUSD as an outstanding STEM program & are striving to change the image of CHS from "underperforming" to one of STEM excellence. Mary Knight, FUSD Technology Director says, "The CocoNuts exemplify the best of STEM education through their dedication to providing that opportunity to others. It is truly a gift. We're honored to have them as part of our district & community at large. The lives of countless students have been & continue to be enhanced by the work they are committed to."

"We show our appreciation to all volunteers & honor the achievements of other teams with personalized plaques. 2486 has grown in size & diversity, with twice as many girls as last year & more minorities than before. Our team has a strong, family bond that is cultivated through our numerous team building activities & retreats, like our annual camping trip to Lake Mary.

"Everything we do is to achieve our vision of spreading the excitement of FIRST to the far reaches of NAZ. We want every school in NAZ to have a chance to experience the life changing power of FIRST. We've taken under our wing the nearly 19,000 sq. mi. of Coconino County, as well as the rest of rural NAZ. The vast distance involved in mentoring these teams is a challenge to which we are more than equal."

As the video ended, team 12486 felt kinship & gratitude toward 2486. Right then, the rookie team decided to emulate the amazing example of the CocoNuts & began a journey of their own toward changing the culture through FIRST.

In 2023, Rocky the Squirrel returned to Championship to see 12486 glowing with pride as a RCA team, & pass their legacy to a new rookie team, ensuring the light of FIRST would spread like wildfire.

FRC 2486 “The CocoNuts”

Executive Summary Questions 2012

Briefly describe the impact of the FIRST Program on team participants with special emphasis on the 2011/2012 season and the preceding two years.

2486 provides opportunities for excellence and growth for students, mentors and volunteers.

100% of “AlumNuts” are attending college

Total scholarships for 8 graduates is over \$2 million

Most AlumNuts pursuing STEM careers

All ‘Nuts gain self-confidence, passion, enthusiasm for service & 21st century skills

Minority students empowered to continue to higher education

Students gain leadership opportunities & skills outside FIRST

1 coach is creating a FLL training program for Master’s Degree

Examples of role model characteristics for other teams to emulate.

2486 epitomizes the values of FIRST in everything we do.

Inclusiveness: Team is composed of students with different ethnic, social, economic and educational backgrounds, homeschooled & rival school members

GP: We honor sponsors, volunteers & other teams at events

Mentoring: In 1 year we volunteer over 220 hours

Service: Adopt an Avenue & Trail, food bank, science fair judging, food drives at events

Passion: We enthusiastically spread the word of FIRST at every opportunity

Spirit: CocoNut Shirt Fridays

Describe the impact of the FIRST program on your team and community with special emphasis on the 2011/2012 season and the preceding two years.

Team growth from 7 to 33 in 5 years; # of girls doubled since ‘11

High Altitude Robotics Extravaganza (2200 hrs/season)

FTC: 8-21 teams in 3 yrs; 2 division event next year

FLL: 20-33 teams in 4 yrs; 2nd regional needed in Winslow next year

New FTC Kickoff & National Instruments workshop: PHX

FTC & FLL scrimmages

Awareness: One of Flagstaff’s treasures, name recognition across NAZ

Changing the image of CHS: Numerous outside individuals & organizations have cited 2486 as an outstanding STEM program

Team’s innovative methods to spread the FIRST message.

NAZ knows about FIRST because of 2486.

Continuing Outreach: 820+ hrs in ‘11/’12 at over 20 community events, including a spotlight at Flagstaff Festival of Science & Flagstaff Celebration of Youth

Camp COCONUTS: 36 kids attended 1st year. We created curriculum, mini challenges, final NAZ challenge & awards. Curriculum will become a guide for new FLL teams with COCONUTS 2.0 in ‘12

Chairman’s Award workshop @ kickoff

NAU Summer Enrichment Program has impacted over 200 underprivileged youth in AZ

Describe the strength of your partnerships with special emphasis on the 2011/2012 season and the preceding two years.

2486 has strong partnerships that enable our success.

Flagstaff 40: financial support, championed by Motor Excellence

NAU: FIRST mentoring club, faculty mentors/judges

WL Gore: mentoring, sponsor, materials

FUSD: opportunities to expand FLL/FTC

CHS: venue for events, "Nut House" build space

Local businesses: financial support, in-kind/food donations for events

Grants: jcpenney, Boeing, SFAz ('08-'11)

Community members: tax credit donations

We recognize donors with plaques, thank you letters, pictures

Team's communications methods and results

"CocoNuts" has become a household name in NAZ due to our extensive media coverage.

FLL coaches workshop: successful rookie & veteran teams at regional & state level

Local & state newspaper articles, interviews on Flag News Show: high attendance at events, name recognition

Website: Facebook, Twitter, FIRST Wiki, Blog, Wikipedia, YouTube channel

Demonstrations at CHS, other schools, jcpenney, local businesses

Presentations to AZ After School Excellence, ASTA, business leaders: growth in FIRST statewide

Other matters of interest to the FIRST judges if any

Flagstaff is a rural community in Coconino County 2 hours away from major cities. The county hosts a population density of 7 people/sq. mi. with 27% Native Americans. Many families living on Reservations are at poverty level with few amenities & miles of empty space. These students traditionally have a higher dropout rate & a very low rate attending college. Our support has allowed FLL to reach Chinle, Leupp, Whiteriver & Ganado, and our mission is to continue providing more STEM opportunities.

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Judges Questions 2012

Team History

This is our 5th year. In 4 years we’ve been the proud recipients of the AZ FTC Inspire, AZ Engineering Inspiration & AZ Chairman’s Awards. Our team grew from 7 members our 1st year to 33 in 2012. We continue to inspire the community of Northern AZ (NAZ).

Team Goals

We continue to grow FIRST in AZ, especially on Native American Reservations by expanding FLL and FTC. We designed & taught a robotics summer camp in ‘11 to inspire kids of all ages. The curriculum developed will be compiled into a guide for new FLL teams.

Team's *FIRST* Impact

We host kickoff, scrimmage & tourney events for FLL & FTC in the High Altitude Robotics Extravaganza. We mentor teams near & far. AZ FTC draws teams from CA, CO & Mexico. FTC attendance has tripled since ‘09. NAZ FLL & FTC will both expand in ‘12.

Community Description

2486 is the driving force behind the initiative to get students excited about STEM in the vast NAZ region. Our diverse community centers on the university, schools & small businesses. We are respected community role models.

Team Strengths

Our team strengths are diversity, inclusiveness, quality craftsmanship, work ethic, pride, gracious professionalism, spirit, a big dose of humor & a sense of family! Mentoring is a cornerstone of 2486. Our passion for FIRST & STEM is infectious!

Most Significant Challenge Overcome

Our growth has presented new communication challenges. Full team meetings are held each week & each ‘Nut works on 1 of 5 committees. Heavy snow forced on the spot adjustments to NAZ FLL. We are hosting an invitational for the snowed-in teams.

Robot and Game Strategy

Using a mecnum drive train, vision tracking and sensors, our robot will line itself up at the right distance to consistently score baskets in the high goal. Over 90 custom parts were milled at CHS with the help of our numerous engineering mentors.

Most Competitive for Which Awards

Winning the award is not as important as the journey. 2486 is a Chairman’s Team because we use FIRST as a catalyst for creating a cultural & educational impact. We are competitive for the Inspiration, GP, Spirit, Imagery, Design, Quality & Website Awards.

Funding Sources

2486 earned grants from jcpenny & Boeing in 2012. Motor Excellence successfully challenged Flagstaff 40 business owners to match a \$5000 donation. Tax credits from community members & fundraising events allow all members of the ‘Nuts to travel.

Public Awareness

We are featured in local, state & national media. Our website utilizes social media. We are featured in science festivals, CHS & FUSD events, parades, & workshops, totaling over outreach 820 hrs in ‘11 & ‘12. “CocoNuts” is synonymous with FIRST in NAZ.