PROJECT BUCEPHALUS

5985

Established 2015

Create Opportunity, Transform the Community!

FRC Team 5985 Project Bucephalus is an independent, self-sufficient community team. Open to all, 5985 has spent a decade reinventing the STEM Classroom and shattering expectations of who fills it.

2025 Team Statistics

- 44 Students
- 57% Female
- 23% Rookies
- 73% with a disability or disorder
- 100% of alumni in STEM careers or education

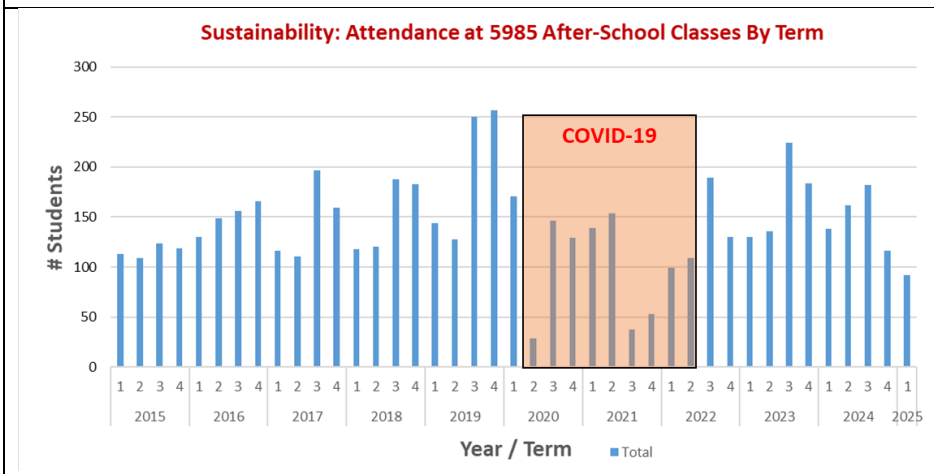
10 Years:

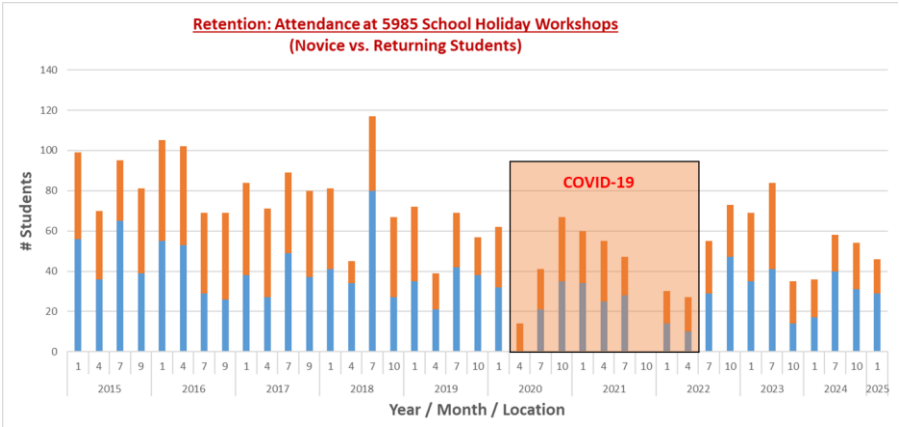
7,589
Hours of Class

8,684
Students

Teaching Program

- Provides 89% of 5985 funds
- 5985 Robotics classes give year-round opportunity for kids to engage with STEM and provides a pathway to FIRST.
- Classes run every day of the school week.
- Holiday workshops run in local and rural areas.
- Team members travel 720+ km each week to run classes across NSW





Funding STEM Opportunities For Others

- "Unlimited": Obtained $138,700 in grants and sponsorship to run robotics classes for students with disabilities.
- "Rocketing Girls Into Robotics": received ~$110,000 in various grants since 2018 to run a free-all girl STEM program, including FLLC participation.
- "Unstoppable": Organised and wrote successful grant for $532,000 to use FIRST as a diversion from criminal behaviour, used at 3 schools.
- Successfully obtained grants for 32 FLLC, 8 FTC and 7 FRC teams

Outreach Australia

- Started 106, mentored 196 FLLC Teams
- Run the Wollongong FLL Regional for 10 years
- Started 6 FRC Teams
- Hosted Southern Cross FRC Regional 2022 and 2023
- Volunteered at 78 *FIRST* events since 2015
- Operates the South Coast Alliance of 6 FRC teams.

Global Outreach

- Started 104 *FIRST* teams in Quad Cities (Iowa/Illinois, USA)
- In the USA, volunteered at 136 *FIRST* events since 2016
- Ran remote FLLC training for 8 teams in rural China
- Remotely Mentored FLLC teams in USA, Germany and Singapore
- Delivered LEGO robotics equipment to 12 countries.
- Forms alliances of international FRC teams in the 5985 Collaborative Scouting Project
- Spoke on inclusion to FRC teams in California in "FIRST For All"

STEM in Community

- Robots reach 10,000+ yearly at the Comic Gong convention.
- Demonstrated at "Science in the Scrub" reaching 8,000+.
- Annual FLLC Coach Training reached 392 international teams since 2017.
- Partnered with Special Olympics to start Unified Robotics in Australia, running for 2 years.
- 5985 members serve as Special Olympics Youth Ambassadors, bringing new inclusion to STEM.
- Created Unified FTC
- Founded the first Australian SWENext chapter, linking Australian girls with STEM professionals.
- Taught robotics to 2,000+ Cub Scouts at 3-Day State camp.

Impact Stories

Impact: **Everyone deserves ambition.** In "Unlimited", 5985 provides STEM opportunities to those normally overlooked. The impact is clearly seen in Special Education Units and Schools – where 5985 run weekly robotics classes for student with medium to complex disabilities. Teaching in 16 schools 5985 has seen teacher's scepticism replaced by astonishment! Students who struggle to engage passionately attend 2-hour classes, developing new skills and the belief that they can do STEM. This single opportunity led **3 students joining 5985**, an opportunity they never imagined.

Impact: **STEM can make an impact anywhere,** even in a dust-covered tin shed in a sweltering 40°C heat in the middle of the Australian bush. At the 2023 NSW Cuboree, 5985 ran 2,000+ cub scouts through hands-on LEGO robotics classes: **100+ cubs every hour, for 6 hours a day, over 3 days** – all whilst camping! This immense effort required 5985 to develop a large-scale Polar-themed activity that involved **52 LEGO robots operating simultaneously in a 3m^2 area**. This activity was voted the favourite base of the camp, and was part of 5985's "*FIRST* Scouts" program, integrating STEM and *FIRST* with Scouts Australia.

Impact: **Play helps overcome trauma.** 5985 members travelled to Türkiye after the 2023 Earthquakes to volunteer in humanitarian missions. They took with them over 10kg of LEGO bricks, carefully sorted and chosen by 5985, and destined for kid's activity centres in 2 tent cities in Antakya (Hatay province). The children were delighted with the gift, building kangaroos and moving on to construct "houses that couldn't collapse". The aid workers told us that having extra opportunities for excitement and play was invaluable for the children, and they had "beautiful memories" of the gift.

Impact: **My Maker's Space** has become a haven for young children facing hardship in Australia and the USA. Here, it is common to hear heartbreaking stories about lack of food, supervision, and basic care. In MMS, these children receive a practical, positive gateway to STEM for students - many of whom had no prior opportunity or exposure to anything of this kind. The student response in both countries has been phenomenal, with the young children coming to believe that there **ARE** options for them as they develop life and STEM skills.

Impact: **The 5985 "Unstoppable" program** uses *FIRST* as a diversion from criminal or anti-social behaviour. Launched in 2022 and running in 3 Wollongong High-Schools, the impact is strongest at Flametree: where students come from backgrounds of trauma, abuse, and neglect, over half involved in the justice system. 5985 have become part of the school, peer-led mentoring leading to FLLC and FRC becoming part of the curriculum. Students pursue new options: "graduating" to mainstream school, apprenticeships or further study – some even attend the 5985 Teaching Program! **Not one participant has re-offended.** Teachers have said "we can't say it's a miracle, but it's definitely miraculous."

Impact: **5985 reinvents STEM classrooms.** Unified Robotics gathers students with and without intellectual disabilities or ASD in the same STEM teams. Inspired, 5985 took it further: creating the world's first Unified FTC teams at Special Education Units in 3 high schools. 2 years later, the results are astounding - Special Education and mainstream students working and competing as equals. Competition was a revelation – parents, staff and students blown away by the experience - and (for some) the first positive interaction with groups of mainstream students.