



# AEROSPACE ENGINEERING

# Our Team

- **Title: AeroSpace Engineering**
- **Team Members: Beau, Riki, Rafael, Zane, Caleb**
- **Team Number: 25595B**
- **Location: St Vincents Primary School, Gold Coast, Queensland, Australia**
- **Submission written and designed by Beau**



**Zane, Raf, Beau,**

**Caleb, Riki**

# **Which STEM career did you select, and why?**

- I have chosen aerospace engineering and avionics as my career for this submission. I've chosen this job because when an aerospace engineer is creating their aircraft or spacecraft, they use the engineering design process to resolve problems in aerodynamics, structural integrity and more.**



**What resources did you find to learn about professionals in this career or company and how they use the engineering design process?**

- **While our team was visiting Adelaide for the VEX IQ: full volume Australian Nationals, I stopped by the South Australia Museum. On the 3rd floor, Dr Andrew Thomas of Aeronautical and Aerospace engineering was on display. Dr Andrew Thomas was well known for being the first Australian citizen to exit earths atmosphere. Learning about Dr Andrew Thomas led me to the internet to research more on the career of aerospace engineering, and how engineers implement the Engineering Design Process into their work.**

**Dr Andrew “Andy” Thomas**



# How do professionals in this career or company apply steps of the engineering design process?

- Along the lines of aerospace engineering, Boeing Aircrafts uses the Engineering Design Process on the day-to-day basis, seeing as though the aerospace engineers make new aircraft monthly. Throughout their past creations they have **EXPLORED** the best-selling planes that they make, they are constantly **DESIGNING** aircraft, then they start **CREATING** the main elements of the plane, they then **TEST** the technical side of the airplane until the final result is met. **IMPROVING** the future concepts of aviation.





## Boeing

- 1) Uses an advanced engineering design process.
- 2) Creations are massive and require more concentration on small details.
- 3) Build aircraft that will need strong durability, so designing the mainframe properly is essential for structural integrity.

## Our Team

- 1) Uses a simple engineering design process
- 2) Builds are small and fragile, only the brain and outtake need to be structurally sound.
- 3) The aircraft's exoskeleton is fragile but will hold together for competitions.

## We both

- 1) Use the engineering design process to guide our construction.
- 2) Use other aircraft/robots as inspiration for our own creation.
- 3) Have competition with other airlines/teams

How does the professional approach to engineering design match or differ from the approach used by your team?

- While Boeing uses an advanced engineering design process that exceeds our level by including more than 10 steps, we use a simple Engineering Design Process that shows just 6 steps to accomplish the finished project. In this way, we are very different to Boeing. However, there are strong similarities between ReSquad and Boeing too. The following Venn Diagram will show the differences and similarities.

# How has participation in VEX Robotics prepared you for a future career During your time at VEX

- At VEX IQ Australian Nationals, we drastically improved our teamwork, sportsmanship and communication. During each round we worked with the allied team to score as many points as possible. We had communicated with them and to plan our strategy for our next game. At the end of each round, we said a simple “good game” or “nice job”.

