



LAUNCH DAY 2025

An Introduction to EVelocity

Agenda



- Welcome and Housekeeping
- Overview of EVelocity
- Race Day Events
- How to Win
- Q&A

Housekeeping



Competition Overview

Sam Knox, Shannon Wildman





What is EVelocity?

A nationwide, inter-school electric vehicle building competition

What do you do in it?

Design, build, and race an electric vehicle!



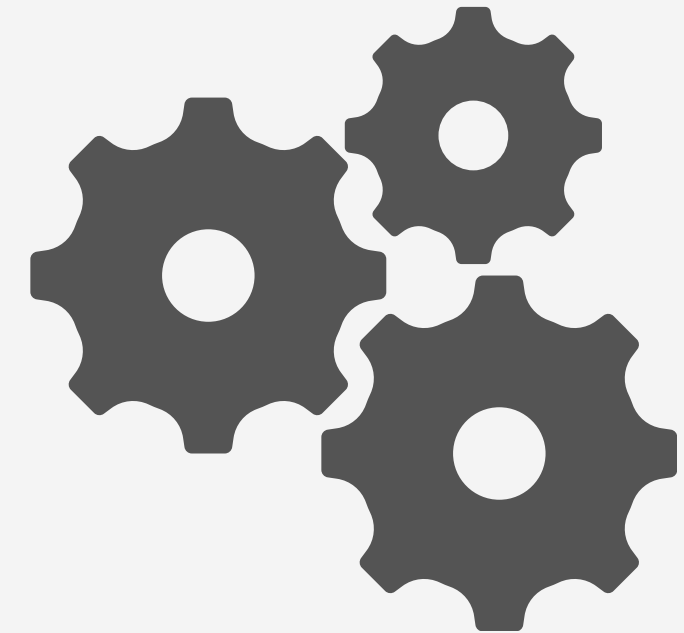
What are we about?



Promoting
sustainability



Growing EV
uptake



Encouraging young
people into
engineering &
technology

Our Tertiary Connections



ENGINEERING
DEPARTMENT OF ELECTRICAL,
COMPUTER, AND SOFTWARE ENGINEERING



ENGINEERING
DEPARTMENT OF MECHANICAL
AND MECHATRONICS ENGINEERING



Paihau—Robinson
Research Institute



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TOI-OHOMAI
Institute of Technology

UC  **ENGINEERING**



Last year's builds



Last year's builds



Last year's builds



Taranaki Regionals 2021



EVOLOCITY

Vehicle classes

Vehicle Class	Power Limit	Wheel Layout	Notes
Standard	350W	2+ wheels	Uses an unaltered EVelocity standard motor kit. Most common for teams in their first few years of competing.
Open	<2kW	2+ wheels	Teams bring their own motor and batteries.



Standard Class Kit

Comes with everything you need:

- 350W motor
- 350W motor controller
- 2 x 12V lead-acid batteries
- Sprockets
- Chain
- Ignition switch + killswitch
- Foot + hand throttles
- Connectors

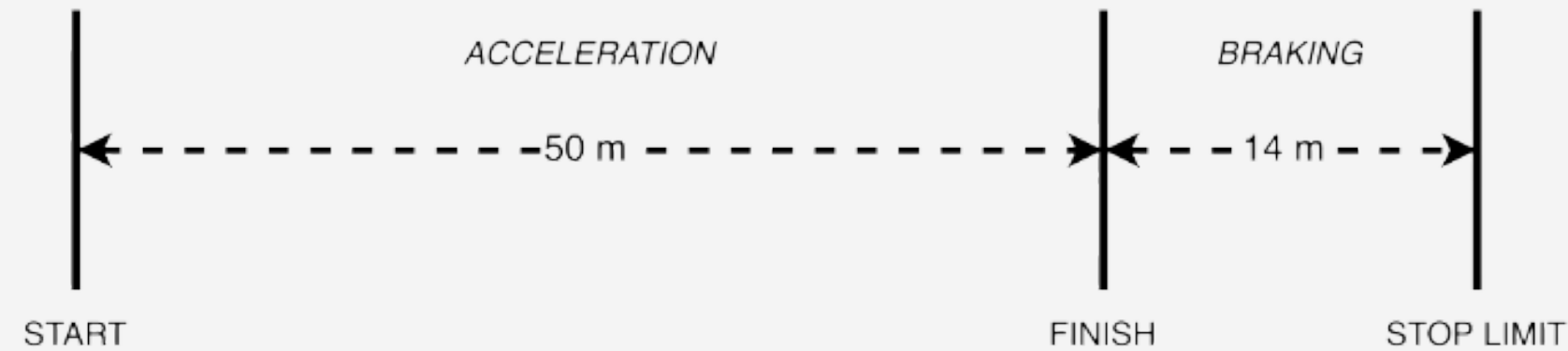


Race Day Events

Dynamic Events



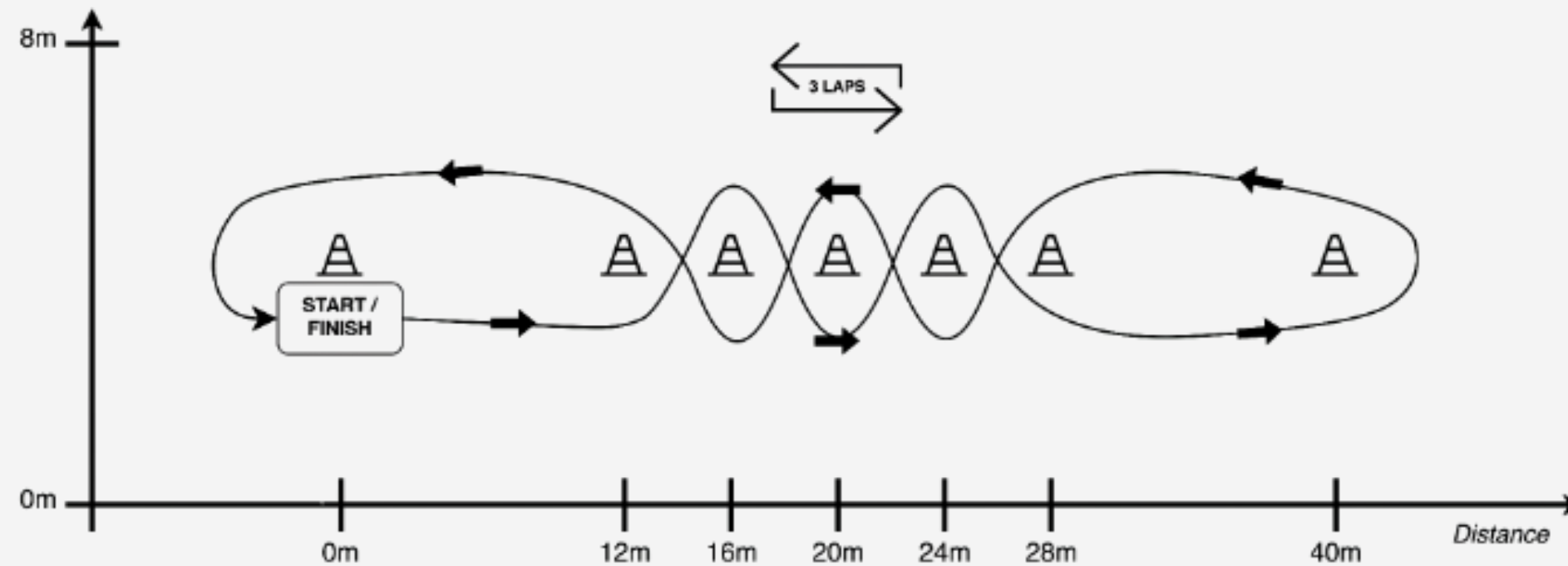
Drag Race



- Straight line race against the clock
- 50m acceleration zone
- 14m deceleration (braking) zone
- Best of 5 attempts, after penalties

A test of your vehicle's speed.

Gymkhana



*Note to old teams: the water bucket and plank have been removed.

- A timed slalom course 40m long
- 3 laps weaving through the cones
- Best of 2 attempts, after penalties

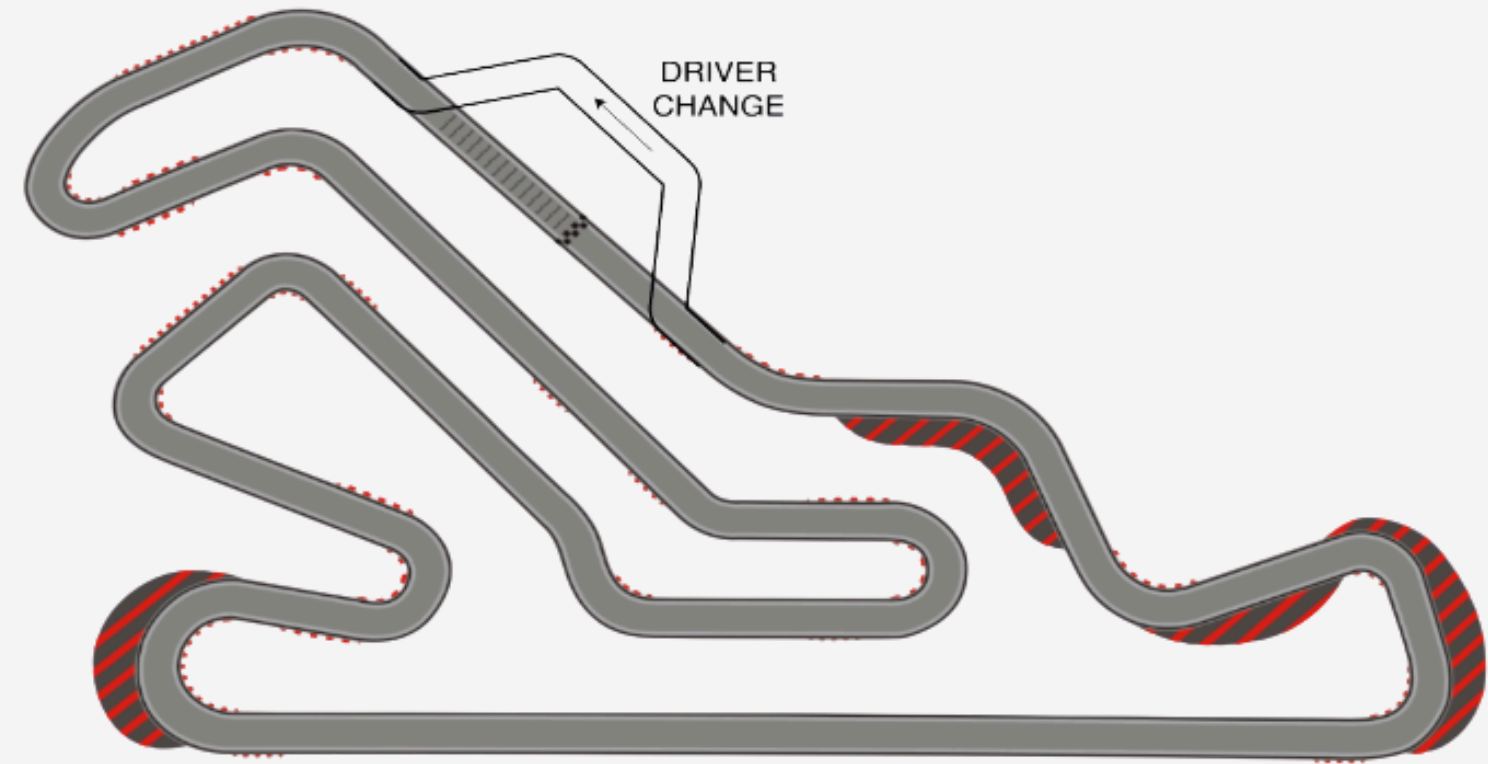
A test of your vehicle's agility.

Endurance & Efficiency

- Full-course circuit
- Could be between 2km and 5km
- Mandatory driver swap
- While racing, an energy monitor* measures vehicle efficiency

A test of both your vehicle's reliability and its energy efficiency.

*The energy monitor is a device provided by EVelocity on the day.

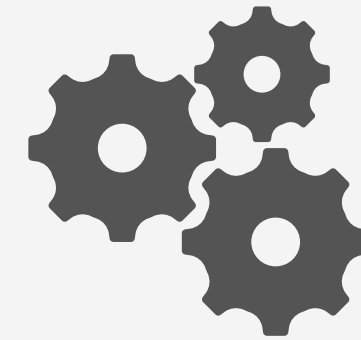


Race Day Events

Static Events



Engineering Design Presentation



A team presentation to a panel of judges, explaining:

- Design decisions
- Manufacturing processes
- Unique innovations
- Electronic control systems (Arduino etc.)
- Sustainability contributions

Before racing starts, judges will move from pit-to-pit for presentations. They will be judging for both the **Engineering Design Award** and the **Special Awards**.

Technical Report



Produce a document that details the entire build process, including:

- Planning
- Mechanical and electrical design
- Budgeting and fundraising
- Procurement
- Manufacture
- Testing

Note: this is the part of the project that can get you NCEA credits.

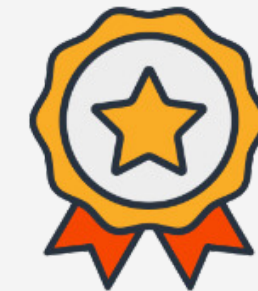
This is not technically a “Race Day Event” and is usually due after Regional Finals.

Special Awards

→ Earth Care - demonstrate the highest level of sustainability in your vehicle.



→ Show Stopper - present yourselves and your vehicle the best.



These are judged during the **Engineering Design Presentation**.

How to Win



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What makes a winning team?

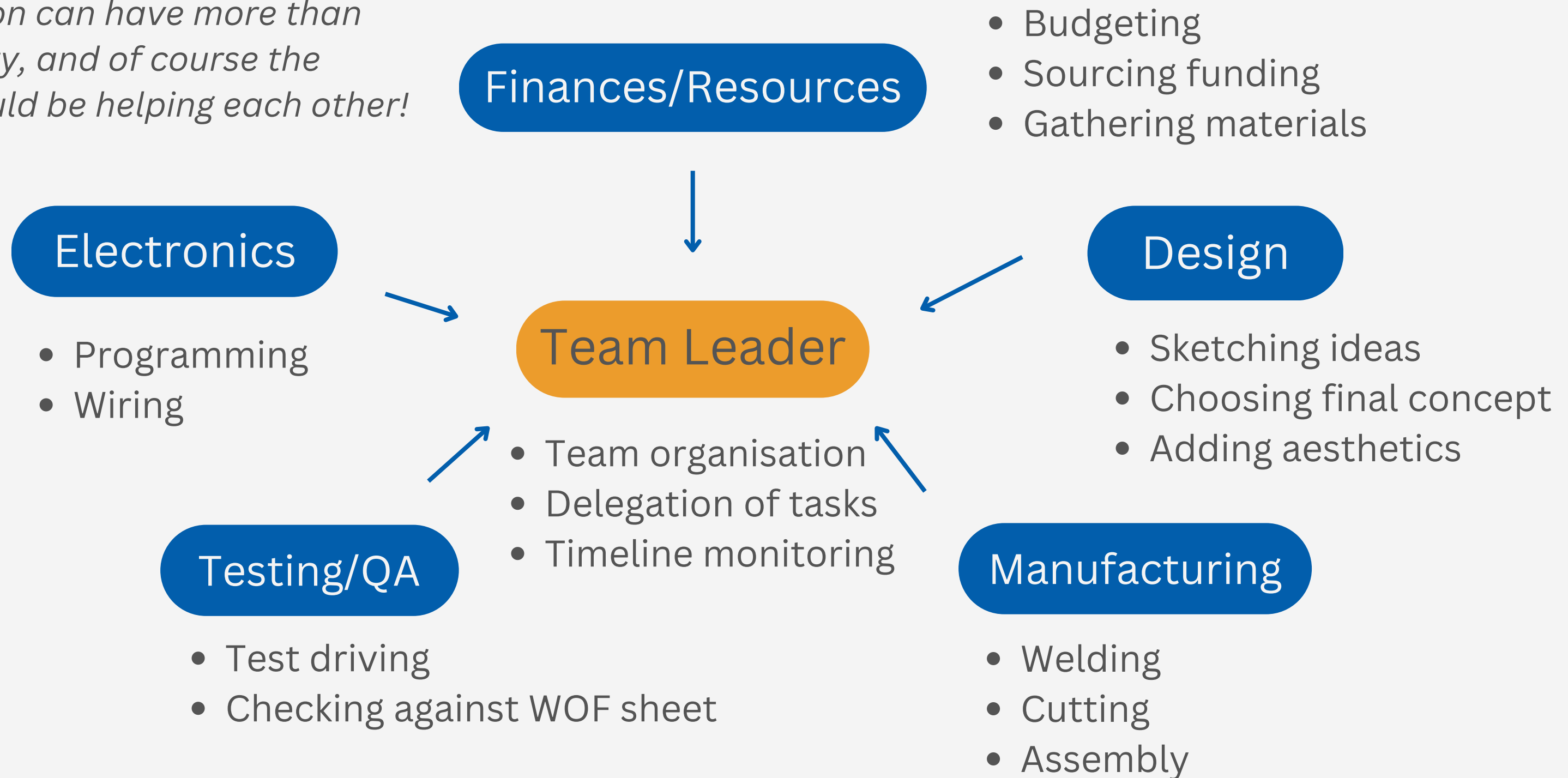
- Strong team organisation
- Meeting regularly
- **Planning** and staying on track
- **Testing** well in advance



Tip - it's not always the fastest vehicles that win!

Key Roles & Responsibilities

Note: each person can have more than one responsibility, and of course the whole team should be helping each other!



Timeline Planning



This is a guideline of where you should expect to be at throughout the year.

- 📅 March - Assemble team and assign roles, confirm vehicle wants/needs
- 📅 April - Finalise concepts and designs, create parts list, plan budget and timeline
- 📅 May - Fundraise, source materials, create manufacturing plans, begin building
- 📅 June - Build
- 📅 July - Build
- 📅 August - Test drive and revise
- 📅 September - Final touches for **pre-scrutineering**, revisit areas of improvement

Your Next Steps



- ☐ Plan your first team meeting
- ☐ Create a meeting schedule
- ☐ Complete the Design Activity worksheet as a team
- ☐ Start generating concepts
- ☐ Assign team roles



Reminders

- Register your student details online if you haven't already
- Confirm with your co-ordinator your required number of kits
- Keep an eye out on your local upcoming events and make the most of them!
- Follow us on Facebook and Instagram!



@evolocity_nz



Q & A

THANK YOU FOR COMING!

