



RE-ENGINEERING AUSTRALIA
FOUNDATION



F1 IN SCHOOLS PRIMARY SCHOOL CHALLENGE EVENT GUIDE

Maitland Federation Centre
10 Bent St, Maitland NSW 2320
Tuesday 27th August 2019





Fast Facts

Date

Tuesday 27th August 2019

Times

9:30am – 2:30pm

Session 1: 9:30am – 11:00am

Session 2: 11:00am - 12:30pm

Session 3: 12:30pm – 1:30pm

Session 4: 1:30pm – 2:30pm

Audience

Primary School Students, Lower
Secondary

Cost

All costs associated with the event have been shared with RDA Hunter's ME Program, CASE and Re-Engineering Australia – Foundation. (Does not include Lunch or Morning Tea for Students)

Parking/Buses

Parking is available in front and behind the Federation Centre and it is a short walk from Maitland Train Station.



pwc

The Judges for this event come from our corporate partners PwC. RDA Hunter and CASE would like to thank PwC for their ongoing support of STEM initiatives in the Hunter.

Fast Facts Cont.

Stage 1 - Materials

The CASE to provide each participating Primary Schools with REA Foundation F1 in Schools paper car kit for Academy schools. Non-CASE schools will need to purchase the kits directly from REA Foundation.

Stage 2 – Design and Construction

Primary schools will dedicate time prior to the 27th August for the design and construction of their F1 in schools CO₂ powered cars.

Stage 3 – Racing

Primary school teams from across the Hunter will compete on Tuesday 27th August at the Federation Centre Maitland to be crowned the fastest team at the Hunter.

Racing Session Times

Schools will be allocated one of four session times where students race their cars

Session 1: 9:30am – 11:00am

Session 2: 11:00am - 12:30pm

Session 3: 12:30pm – 1:30pm

Session 4: 1:30pm – 2:30pm

Other Activities

During their time at the F1 in Schools Primary School Challenge students will have the opportunity to view the High School Students compete in the F1 in Schools Regional Finals.



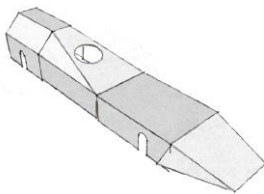
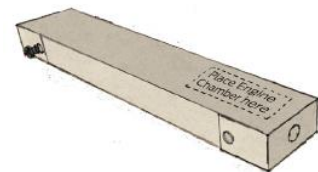


Greater Hunter F1 in Schools Primary Challenge

Regional Finals Rules & Regulations

1. **Teams:** A F1in Schools Primary School Challenge team is to be a minimum of 3 and a maximum of 4 students
2. **School Teams:** Each school will be allocated up to 5 teams each. If the full allocation of race time is not filled then schools may request more teams to compete.
3. **Weight Restriction:** The car must weigh at least 46.5 grams with CO2 canister inserted.

4. **Chassis:** The standard chassis must be used as this has been designed specifically to withstand the loads the car will undergo when racing with an 8gm CO2 canister. The Chassis can not be changed or modified in any way.



5. **Body:** A body is supplied but an alternative body can be designed and manufactured by the students. While the car can have up to two aero-foils (wings), no modifications are allowed to cover the wheel or protrude past the width of the wheels. Wings can be made of cardboard or can be 3D Printed.

6. **Race Safety:** Students must follow the build instructions explicitly and the car must be tethered to the race track and there must be no loose parts and this includes the driver. Glue, sticky tape or velcro can be used.

7. **Wheels and metal axles:** The supplied wheels and axles must be used and no changes can be made to either of these parts. The wheels are allowed to be lightly sanded to remove bumps on the wheel tread.

8. **Driver:** All cars must have a driver which must be secured to the seat in a sitting position. The driver can be made from lego, plastic or plastine, but not metal. Driver height Min: 40mm / Max: 60mm.



9. **Racing:** Teams will race their car four times during the regional finals. **Automatic Racing:** Once on each side of the track. Reaction **Time Racing:** Once on each side of the track

10. **Posters:** A compository aspect of the event is the production of a team poster. The maximum poster size is A1 but can be as small as A3. The posters could cover the following areas;

- Team members and their rolls in the team;
- Team identity including logo, colour scheme and decoration of their car and marketing of their team. This may also include a tee shirt design;
- STEM research they have undertaken coveing concepts such as aerodynamics
- Engineering innovations on their car to make it go faster.
E.g. Front and rear wings.

11. **Verbal Presentation:** Each team is to complete a short verbal presentation on their project, up to 3 minutes. The following can be judged;

- Presntation structure and technique
- Use of visual aids such as their poster
- Team contributions and effective participation by all team members
- Team dynamic and levels of enthusiasm and enrgy
- Presentation compition and clarity of explanations
- Use of time and how effective was the 3 minutes used;
- Learning experiences i.e. how did the f1 in schools challnege benefit team members



Judging Processes/Procedures

Teams will be required to find their way to the judging pannel, prenent their poster, car and complete their verbal presentation at a time when they are not racing. This must be done within the session time frame or their points will not be included.

Judging sheets will be filled out for each team for the Poster, Verbal Prentation and Car Design. Points will also be added based on your cars race and reaction time.

The overall winner will determined by the teams performance in all judging areas.





F1INSCHOOLS PRIMARY CHALLENGE REGISTRATION & JUDGING

| NAME OF TEAM | SCHOOL |
|-------------------------|---------------|
| | |
| CAR REGISTRATION NUMBER | STUDENT NAMES |
| | |
| | |
| | |
| | |

JUDGING - POSTER

| Criteria | Low | Developing | Advanced | Score |
|-----------------------------|--|--|--|------------|
| | 0 1 2 3 | 3 4 5 6 7 | 8 9 10 | |
| 1. Team work | Limited teamwork evident | Evidence of effective team work and roles defined | Highly structured team with clear roles. All team members had effective and critical contributions | /10 |
| 2. Poster Clarity & Quality | Difficult to follow with basic presentation standard | Clear structure, well organised. Good use of ICT's enhancing presentation & impact | High Impact and professional throughout. Consistent and clear organisation. Excellent use of ICT's to enhance presentation | /10 |
| 3. Team Identity | Inconsistent, limited or obscure identity | Effective team identity consistent throughout the poster design | Excellent and highly effective team identity. Consistently applied through the poster design | /10 |
| 4. Marketing | Limited or irrelevant | Some marketing activity explained | Creative and effective activities evident | /10 |
| 5. Poster Layout | Inconsistent layout | Clear and effective presentation and messaging. Some project development displayed | Clear, well-organised and has high impact. Highly professional with attention to detail. Well-presented project developments | /10 |
| | | | TOTAL | /50 |

JUDGING – VERBAL PRESENTATION

| | Low | Developing | Advanced | Score |
|-------------------------|-------------------------------|---|---|--------------|
| Criteria | 0 1 2 3 | 3 4 5 6 7 | 8 9 10 | |
| 1. Team Contribution | Minimal team participation | Good contributions from most team members | Excellent team work with all members participating effectively | /10 |
| 2. Dynamic Engagement | Low energy minimal engagement | Enthusiastic, lively delivery with some audience connection | Passionate and lively delivery with audience fully engaged through the presentation | /10 |
| 3. Use of time | Too fast or ran out of time | Good timing. Balanced topic depth and pace | Ran on time, excellent balance of depth on each topic | /10 |
| 4. Collaboration | Little collaboration | Links with others outside of school described | Collaborations justified with learning and project outcomes | /10 |
| 5. Learning Experiences | No real reflections | Good explanation of some learning outcomes | A range of personal, lifelong learning and career skills acquired | /10 |
| | | | TOTAL | /50 |

JUDGING - ENGINEERING, DESIGN AND MANUFACTURE

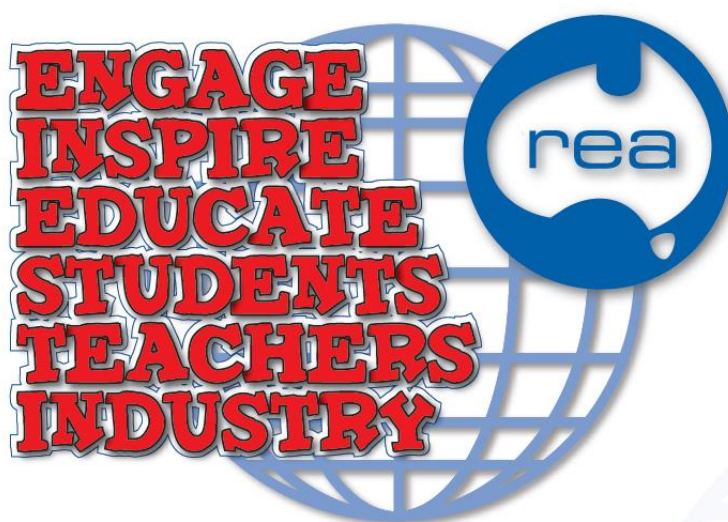
| | Low | Developing | Advanced | Score |
|-------------------|--|--|--|--------------|
| Criteria | 0 1 2 3 | 4 5 6 | 8 9 10 | |
| 1. Innovation | Little innovation presented | Innovations evident on car | Originality, clever innovations with high positive project affect | /10 |
| 2. Manufacturing | Reasonable construction with some inconsistencies | Good overall construction with attention to detail | Exceptional attention to detail in the construction of car | /10 |
| 3. Team Identity | Car inconsistent with poster design | Effective team identity consistent through various project components | Excellent and highly effective team identity. Consistently applied through all project elements | /10 |
| 3. Graphic Design | Basic/plan design with little technical merit | Well-developed design with some technical merit | Highly original design with excellent technical merit | /10 |
| 4. Engineering | Single or basic engineering features added (e.g. rear, front wings, side pods) | Multiple concepts and engineering features evident (e.g. rear, front wings, side pods) | Several technically inspired ideas and engineering features for different car features (e.g. rear, front wings, side pods, 3D Printed parts) | /10 |
| | | | TOTAL | /50 |



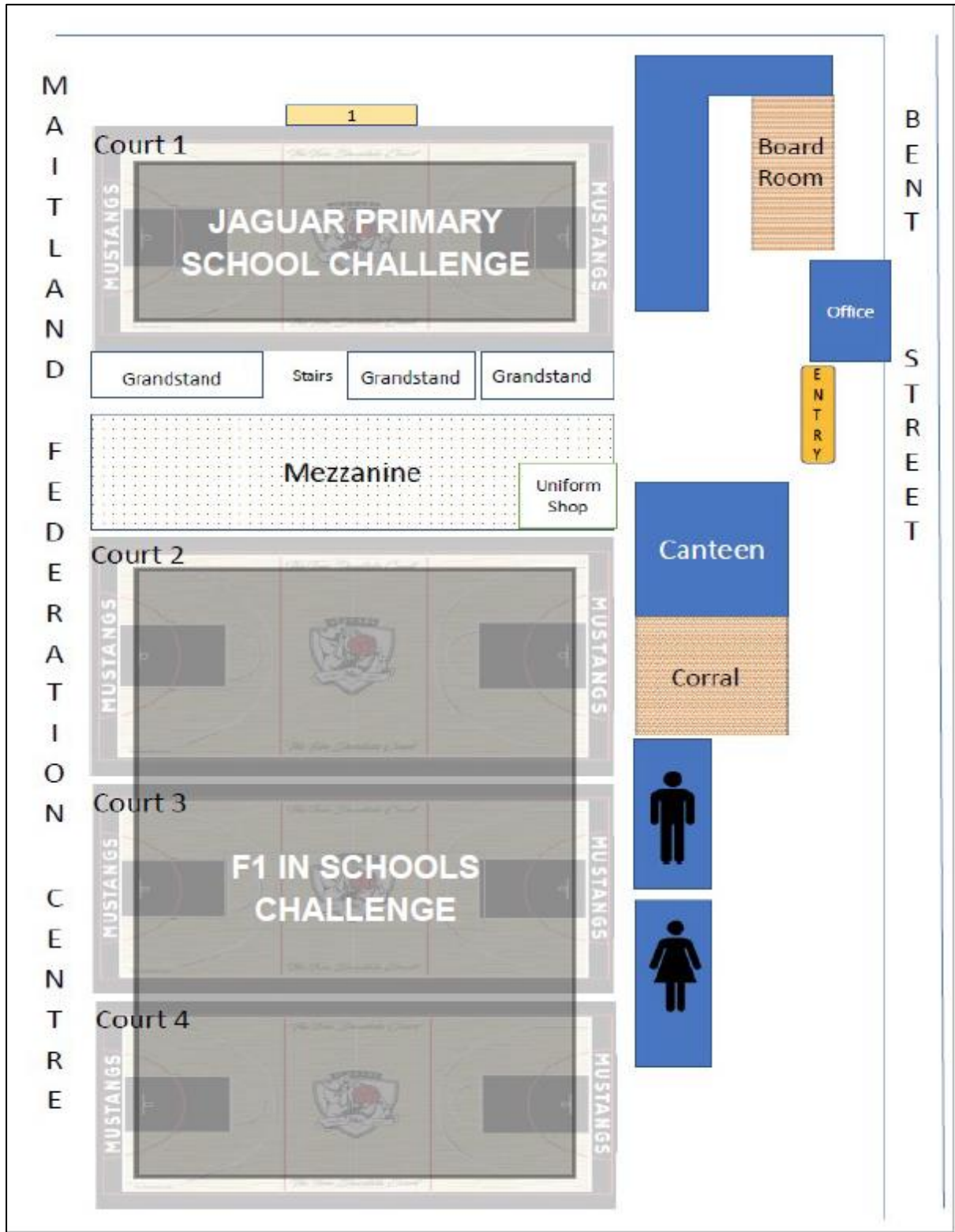
2019 Greater Hunter F1 in Schools Primary Challenge Award Categories

- 1. Winning School Trophy**
(School with highest overall points from racing and judging)
- 2. Fastest Team Award**
(Team with the fastest overall time)
- 3. Fastest Reaction Time Award**
(Team with the fastest overall reaction time)
- 4. Best Poster Award**
(Team with the highest point score for their poster)
- 5. Best Verbal Presentation**
(Team with the highest point score for their verbal presentation)
- 6. Engineering, Design and Manufacture Award**
(Team with the most innovative car design)

Note: All awards to be presented after the event



Venue Layout





Sample F1 in Schools Primary Challenge Permission Note The Federation Centre Maitland

Date: Tuesday 27th August

Time: Session 1: 9:00 am to 11.30am

Venue: The Federation Centre 10 Bent St, Maitland NSW 2320

Cost: TBA

Organiser: Teachers Name

Students who are part of the F1 in Schools Primary Challenge competition will be given the opportunity to compete in the Regional Finals to be held at The Federation Centre Maitland on Tuesday 27th August. Students will only attend school for part of this day as they will be competing against a number of other schools in the region

Organisation: Students need to be at school before ##### am to catch the bus to the Federation Centre. Students will leave the venue at **11:30am** and will arrive back at the school at approximately #####. Some parents may wish to attend the event, if so please indicate on the permission slip below if your son/daughter will be using alternative transport to the event.

Parents please note there is no personal injury insurance cover provided by the NSW Department of Education and Training for students in relation to school sporting activities, physical education lessons or any other school activity. Parents and caregivers are advised to assess the level and extent of their child's involvement in the sport program offered by the school, zone, area and state school sport associations when deciding whether additional insurance cover, above that provided by Medicare, is required.

The NSW Supplementary Sporting Injuries Benefits Scheme, funded by the NSW Government, covers any injury resulting in the permanent loss of a prescribed faculty or the use of some prescribed part of the body.

Tear off Slip

I give permission for my son/daughter _____ to participate in the F1 in Schools Primary Challenge on Tuesday 27th August at the Federation Centre Maitland.

My son/daughter will be travelling with the accompanying teacher by bus to and from the Federation Center Maitland.

My son/daughter will be arriving and departing from Federation Centre using my own transport.

Signed: _____ **Parent/Guardian**

Date: _____





MEDIA RELEASE FORM

F1 IN SCHOOLS PRIMARY CHALLENGE

The F1 in Schools Primary Challenge aims to contextualise Science, Technology, Engineering and Mathematics (STEM) subjects. Media such as images and video of students partaking in STEM activities is very useful for parents and students in seeing applications of school theory in these subjects. The following Media release will allow the above mentioned organisations to continue promoting these real world applications of STEM to all students in the Hunter Region and beyond.

By attending the F1 in Schools Primary Challenge supported by the CASE, The ME Program, PwC, and REA Foundation, I understand that it is likely that my child/ward may be photographed or filmed by the following;

- The CASE
- The ME Program (meprogram.com.au)
- REA Foundation Australia
- NBN Television
- Local Print Media Outlets, e.g. Newcastle Herald, Cessnock Advertiser, Maitland Mercury

I grant permission to the above mentioned organisations to use the name and image of my child/ward in any materials, including, but not limited to, newsletters, websites, marketing material, televised broadcasts and major sponsor's web sites.

I waive any right to:

(a) inspect or approve any promotional materials from the above mentioned organisations which contain the name and image of my child/ward, whether in draft or the final product;

(b) royalties or other compensation in respect of the use of my child/ward's name and image in any promotional materials, now or in the future and whether I know of the promotional materials or not.

I agree to release and discharge the above mentioned organisations and their agents, including, but not limited to, any organisation publishing and/or distributing the promotional materials in whole or in part, whether on paper or via electronic media, from any and all claims for damages, loss, liability or other relief that my child/ward may have against any of them in respect of the use of the name and image of my child/ward in any promotional materials.

School

Student's Name

Parent's/Guardian's Signature

Date