

School ..... Team Name .....

Power  
\_\_\_\_ Watts

Scrutineered by	Date	Passed

# Design Guidelines / WOF

## TWO WHEELED VEHICLES (Bikes, Scooters) (Evolocity 2021)

A significant component of the design and construction of each machine must be done by the team. No commercially available machines will be permitted. All vehicles will be scrutineered and compete at the scrutineer's discretion. All technical queries should be posted in 'General Discussion' on <http://evolocityschools.freeforums.net/> and wait for 'Admin' to answer.

**All Standard Class (350W) vehicles must use the standard bike motor, gearbox & batteries (or the brushless motor option) supplied by EVolocity)**

**All other vehicles will be entered in the Open Class if power ≤1kW**

### Chassis and general construction:

- P  F 1.1 Chassis is robust with suitable materials and joining techniques.
- P  F 1.2 Safety critical components, especially steering, should have appropriate failure reducing fastening techniques such as lock nuts (with minimum of one thread protruding), castellated nuts or similar.
- P  F 1.3 Provide surfaces for mounting a race number (approx. 200mm x 150mm ea.) and sponsor decals to be seen clearly **at all times** from front and side.

### Centre of Gravity:

- P  F 2.1 Stability will be affected by Centre of Gravity, wheel track, wheel base ,steering and other design aspects. Scrutineers may ask for a demonstration of ride stability. In the event of a vehicle being deemed unstable by the scrutineers, or overturning at any time, it may be restricted from competing in events at the discretion of the scrutineers. Mono wheels must have a rear castor for stability.

### Drive train:

- P  F 3.1 The drive train must be adequately guarded to ensure no person can come into contact with it at any time. This should prevent fingers, hair & clothing becoming trapped by the driver or anyone working on the vehicle.

### Tyres and steering:

- P  F 4.1 Tyres not excessively worn (no canvas showing)
- P  F 4.2 Steering systems must be safe for the task, and have minimal play in joints.

### Braking:

- P  F 5.1 The vehicle must have an effective braking system that will prevent it from being pushed from a standstill with the brakes applied.
- P  F 5.2 The brakes must be operable without compromising vehicle control and must be able to stop the vehicle in its lane & 14m from the end of the Drag Race.

### Driver and seating:

- P  F 6.1 The vehicle will have a seat/ body support firmly fixed to the chassis and the driver will remain in contact whilst racing.
- P  F 6.2 Rider to wear zipped cotton overalls, FULL FACE helmet, sturdy shoes or boots, and leather gloves. Visors or glasses are recommended. There is to be no bare skin exposed. Long hair is to be tied up.

### Electrics and batteries:

- P  F 7.1 Batteries must be adequately secured to the chassis, separated from the driver in a way that will prevent any person or object from being able to damage, or be damaged by them. Batteries must have adequate ventilation if required.
- P  F 7.2 Use an appropriate circuit breaker or fuse in the circuit from the battery, rated for the current draw of the system to protect the wiring connected to it and fitted close to the battery.

### Comments:

