Student 4: High Achieved

Intended for teacher use only

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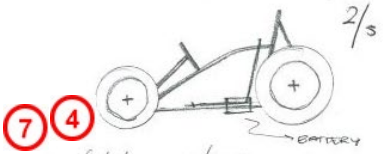
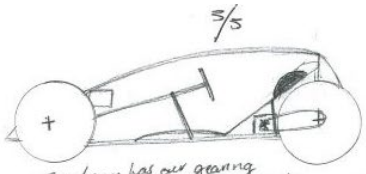


7 4

This first design meets our brief by its lightweight and low centre of gravity and also it has front and back axle sitting higher than the frame. This design also meets our safety features of having a strong wireage. Not a lot of room to fit the motor as well as not having a bumper to protect the vehicle from damage.



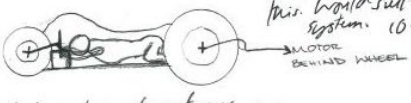
This design has our gearing requirements of a three gear cassette which will allow us to start off quickly and it also has more room to store the batteries. This design also has an aero frame plus a front bumper to stop the wheels and tire rods from being damaged.

For a low centre of gravity the batteries could be moved to a lower position. A different gear would be good for initial speed but wouldn't reach top speed without more gears.

4 7

This design is quite similar to our first design but we designed more room on the back for the motor and the batteries. Better design for low centre of gravity. Batteries could be moved lower to improve this. Would suit a dual transmission system. 10.6.20 JJ.

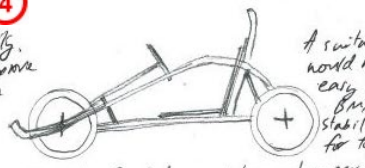
4



7 4

This vehicle here does not meet our safety measurement because we feel its unsafe to be head first. This design meets our style attributes of being aero and lightweight

2/5



A suitable frame design that would be low cost and relatively easy to fabricate. BMX wheels would be good for stability but wouldn't be good for top speed.

3/5

On this final design, it has a bumper to stop the wheels and tire rods from being damaged. It is also meets our requirement of being lightweighted.

4 7

3

		
Motor – 350w	Motor – 350w	Motor – 350w
Gearing – Bike cassette and jockey wheels with a push bike chain	Gearing – single speed	Gearing – bike cassette with jockey wheels and push bike chain
Voltage – batteries - 24	Voltage – batteries - 24	Voltage – batteries - 24
Brakes – Bike brakes	brakes – bike brakes	brakes – Bike Brakes
Steering & suspension- No suspension that is visible Standard go cart steering with the tyre rods going through the front of the chassis	Steering – standard go cart steering that goes down under the frame and up through his legs	Steering – standard go cart steering with tyre rods
Weight – Lightweight with stainless steel	Weight – very heavy due to timber wood	Weight – lightweight
Safety – Safety looks pretty average with not much of a roll cage	Style – recumbent bike	**Wheels – cambered wheels**
Style – based off a Bugatti front (Rocketship)	Safety – very poor due to their being no roll cage and body is completely open to contact. (crash)	Safety & style – Safety is very high with solid roll cage and based off front of f1 car

4

7

Attributes	Yes	No
Motor	Yes	
Gearing	Yes	
Voltage	Yes	
Brakes	Yes	
Steering & suspension	Yes	

Attributes	Yes	No
Motor	Yes	
Gearing		No
Voltage	Yes	
Brakes		No
Steering & suspension		No

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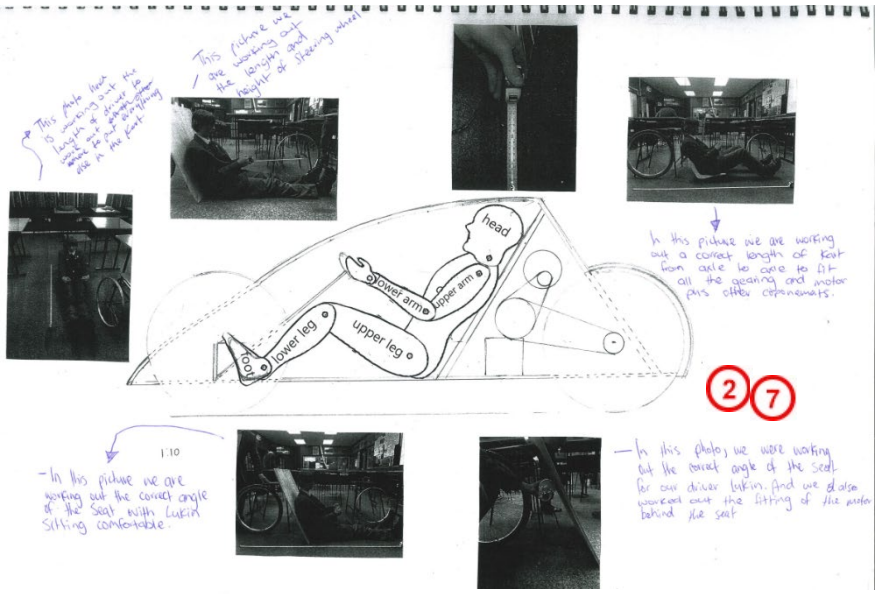
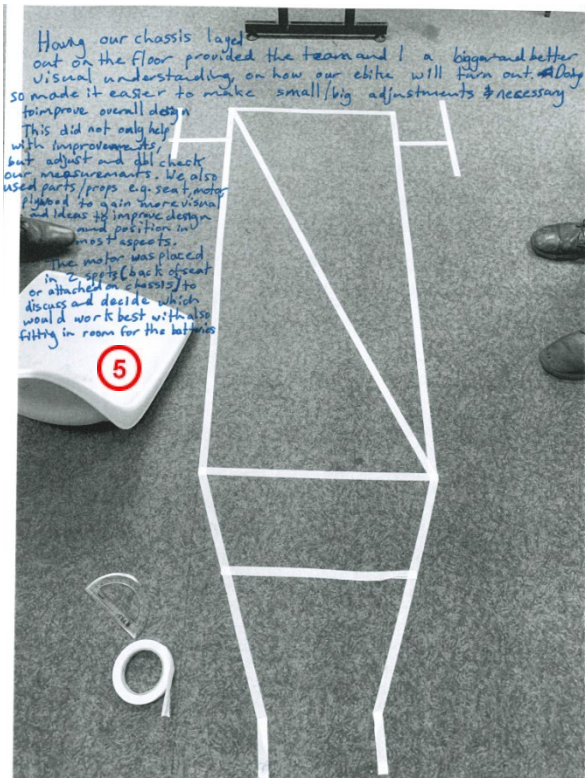
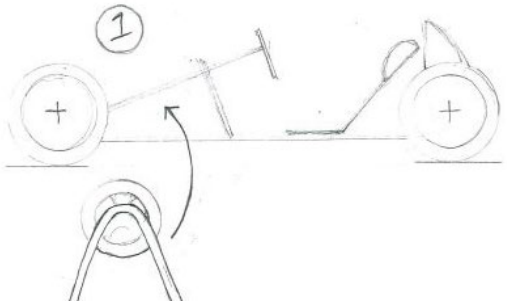
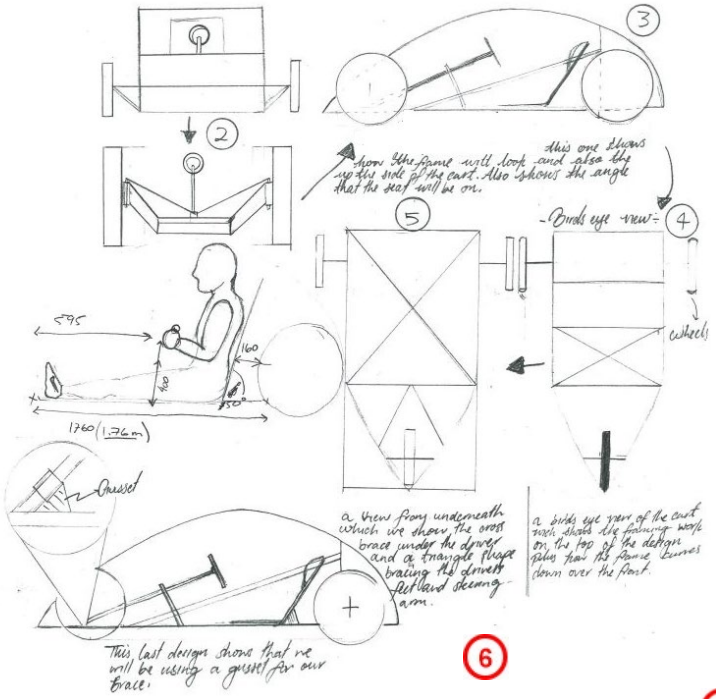
Motor	Yes	
Gearing	Yes	
Voltage	Yes	
Brakes	Yes	
Steering & suspension	Yes	









6

Our design has everything in it that we need and wanted. Was said we wanted a design that has 2 chain set-up for gearing and we also wanted it to sit low to the ground which it does as the frame sits lower than the axles on both ends (front & Back). We also wanted an open kart and we've done that with the slope over the kart for the top of the frame. I think that we have designed a great 3 wheeled electric powered cart to compete in the 'head to head drag & deceleration' race as part of the Evolve regional competition to be held at at the end of term 3. I am 'in charge' of designing the steering system which will be your normal go kart steering which is the ackermann steering system or the other name is the Steering knuckle system. This is where the axles are mounted on knuckles out away from the cart kart. The wheels rotate around these pivots, and cause these wheels to turn. There is a relationship in the wheels movement to a turned centre. We have decided to make the steering rods to go behind the wheels to reduce the chances of damage if a crash happened from the front.

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