

# CAR IQ: MAIN FEATURES



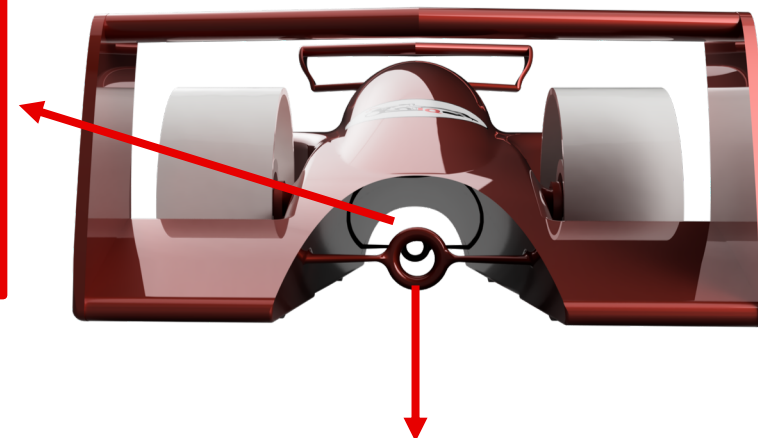
Dihedral shape of rear wing, with aerofoil cross section, designed to maximise stability and minimise induced drag.

Main body shaped as one smooth curve running along whole car, reducing drag by using the Coandă effect to gradually guide airflow around the cartridge chamber, with little flow separation.

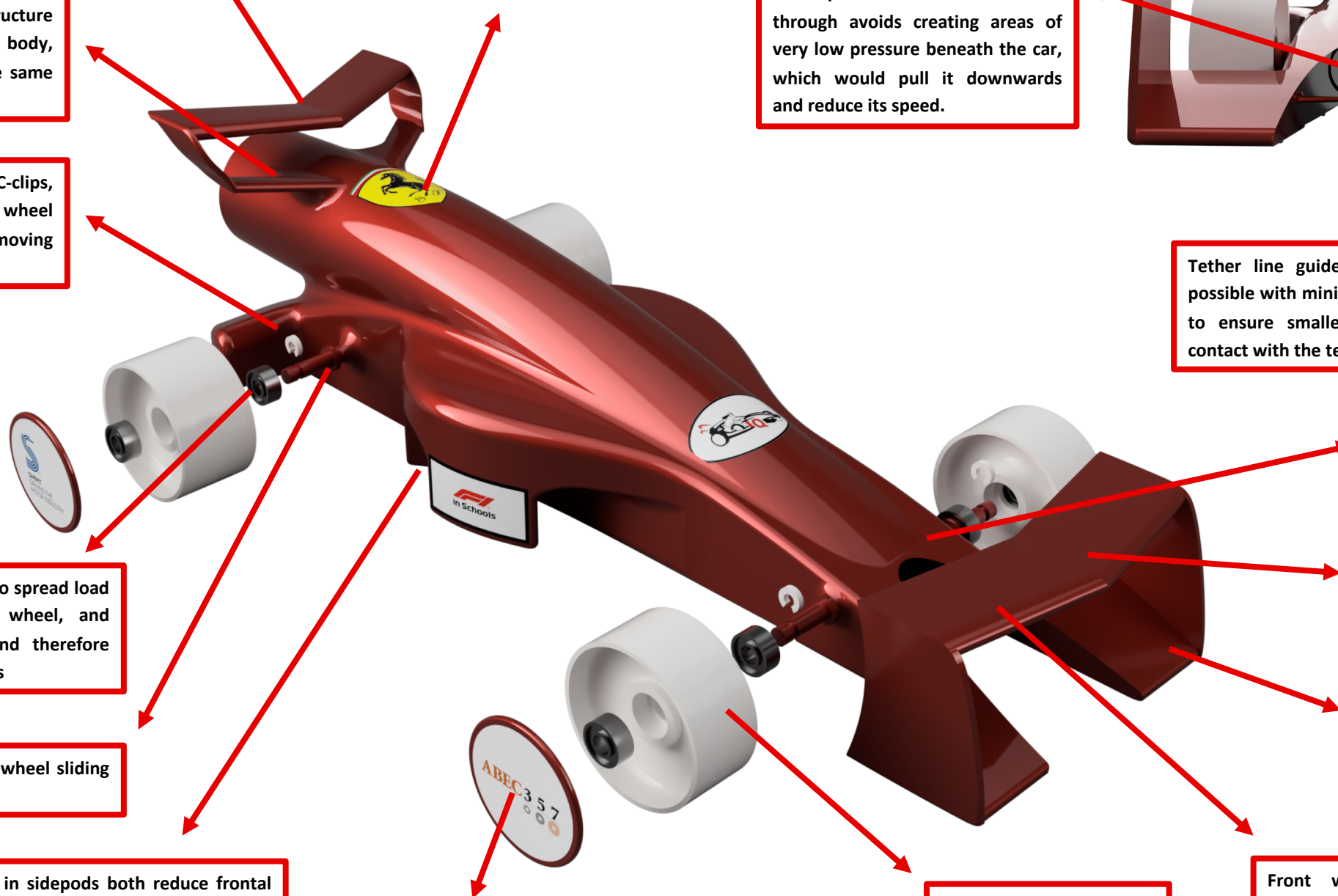
Main flow channel running through car to reduce frontal area and also combat the ground effect. This is because an increased volume of free space for the air to flow through avoids creating areas of very low pressure beneath the car, which would pull it downwards and reduce its speed.

Wing support structure mounted onto main body, adding stability in the same way as the rear wing.

Specifically designed C-clips, to hold neatly hold wheel assembly in place, removing the need for glue.



Tether line guides designed to be as smooth as possible with minimum diameter. They were rounded to ensure smallest surface area possible was in contact with the tether, thus reducing friction.



2 bearings per wheel to spread load more evenly across wheel, and reduce the strain (and therefore wear) on each bearings

Ridge on axel to stop wheel sliding too far up.

Curved flow channels in sidepods both reduce frontal area, as well as make use of the Coandă effect to redirect airflow around the rear wheels, avoiding a large build up of flow in front of the wheels and reducing wheel wake.

3D printed covers clip onto axels and remain stationary: a useful way to protect the bearings, as well as uniformly adding weight to an 'underweight' car

Solid/filled in wheels increases their strength and reduce the likelihood of deformation

Low nose to smoothly direct air up and over the car

Dihedral shape inspired by an arrowhead, reducing the initial point of contact therefore minimising resistance and 'cutting' through the air

Front wing support structure attempts to direct airflow up and over the front wheels, to reduce drag and wheel wake.

Front wing designed with a neutral configuration, as a single aerofoil, in line with the rest of the car, because the primary function of our front wing would be adding stability.