

The Challenges



Projects can be based around the following areas or any other idea you and your learners think will support the development of the car.

Challenge 1

The FIA rules governing the record attempt state that the car must make two runs in opposite directions in one hour. BLOODHOUND SSC weighs approximately 5 tonnes (5,000kgs) at the end of a run and needs to be turned around and made ready for the return run. Therefore some form of mechanical device is needed to turn the car as quickly as possible. It will need to be moveable to align with where the car comes to a halt.

Challenge 2

BLOODHOUND SSC is powered by an EJ200 jet engine and a hybrid rocket. The rocket needs to be changed at the end of each run and therefore a mechanical handling device is required to remove and replace the hot rocket. The rocket, the largest hybrid ever designed and built in the UK, weighs approximately 0.4 tonne (400kgs) and is located at the bottom of the car, underneath the EJ200, and needs to be fed into its housing from the rear.

Challenge 3

There is a third engine in the car, a V12 petrol engine, that drives the fuel pump for the rocket motor and delivers 1 tonne of hydrogen peroxide in approximately 20 seconds. The MCT engine delivers 800 bhp and as it is located inside of the car's body, requires some form of cooling system. An air intake cannot be used as this will provide drag, which is not useful on a WLSR car! Therefore, can you devise a cooling system for the engine to operate over each run that will last approximately 90 seconds?

Challenge 4

The BLOODHOUND SSC engineering team's target is to achieve 1,000mph, but once at that speed, the car must be brought to a controlled halt and stop at the correct place ready for the turn-round process. Can you come up with ideas to slow the car down, perhaps using air brakes, parachutes or some other method?

Or create your own challenge!

By looking at the BLOODHOUND SSC website, there may be other ideas for the development of the car, the WLSR is the ultimate test of engineering and therefore innovation is what delivers a successful car. Therefore any ideas your learners can come up with to help us achieve the record will be considered by the BLOODHOUND engineering team.

How to Enter

Entries should include drawings and working models, plus a design portfolio. Colleges that wish to enter need to inform dave.rowley@bloodhoundssc.com and completed entries need to be available for judging week beginning 1 March 2010.

The top entries will be invited to the Big Bang engineering national celebration in Manchester and judged as part of Young Engineer for Britain, where the winning individual or team will be selected to attend Intel ISEF thanks to the support of Intel UK.



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The Intel/BLOODHOUND SSC Young Engineer for Britain Challenge



The BLOODHOUND SSC Project has teamed up with Intel and Young Engineers to develop a competition for college learners.

The winning individual or team (up to three) will attend the Intel International Science and Engineering Fair (Intel ISEF) in San José, California along with 1,500 other students from around the world in May 2010.

The challenge, which is part of the Young Engineer for Britain competition, is based around devising innovative ideas that will help the BLOODHOUND SSC engineering team develop and run the supersonic car that is being designed to travel at a staggering 1,000mph. The World Land Speed Record (WLSR) is the ultimate test of engineering innovation as there are very few rules that govern the design of the car and therefore BLOODHOUND SSC is pushing the boundaries of our engineering knowledge with regard to manufacturing, materials and aerodynamics.