

MINI Plant Oxford



ENGINEERING
YOUR
FUTURE

Gravity Racer

- A high profile engineering challenge with clear goals where schools to work in partnership with MINI Plant Oxford.
- Skills development and curriculum coverage for schools as well as exposure to a global leader in automotive engineering.
- Opportunities for professional development for MINI Plant Oxford staff as well as purposeful engagement with education and the local community.
- A lot of fun for all involved

Suggested approach and time line:

Offered to five schools local to MINI Plant Oxford:

- St Gregory the Great School Oxford
- Marlborough School Woodstock
- Gosford Hill Kiddlington
- St Birinus School Didcot
- Cooper School Bicester

Project Timeline

February - Invitation to a 'launch event' at MINI Plant Oxford

- Curriculum and other relevant materials delivered by the project to be available

March / April - Project build in schools with the opportunity for collective sessions at a single venue to cover specific design / build workshops, e.g braking, body, steering.

Curriculum sessions on how the project can cover elements of the wider curriculum in ICT, Literacy, Maths, Business. Materials made available

May - June

Unveiling of completed cars at MINI Plant Oxford, possible local 'test' event TBC

Final preparations for Race Event at Richard's Castle 08th July 2012

Project Management

All of the management and curriculum materials for this project can be undertaken collaboratively with BMW MINI and Engineering Your Future who established the programme and have run it with education and employers for several years.

Equipment / Kit

Chassis, Running gear, Braking system, Body

Potential target areas for collaborative project development

this year – Body – Running gear and Steering



Resources

Supplied Hardware Resources	What schools need to collect
Chassis	Two bicycles with 20" wheels
Material for front and rear wheel mounting manufacture	A plastic school chair or similar
All bolts	Material to produce bodyshell
All rose joints	
Safety harness	

Organisation Key Points

- Establish an effective communication channel with the person delivering the project
- Agree timeline, put key dates on the calendar, potential for whole day activities greatly improves work flow with support at key times from MINI Plant Oxford
- Make sure Race Event is on the school calendar 08th July Ludlow – all Racers will be transported, teams make their own way there, ie school may need to book a minibus or arrange parents to take them. Encourage the latter, as it is a splendid event for families
- Develop project ideas, keep them simple, especially braking, wheel mounting and steering
- List any resources that will cause delays if they are not in place
- Key materials will all be delivered to the school by EYF

Suggested approach

- Research the event at www.richardscastlesoapbox.co.uk
- Look at the chassis
- List tasks against a time line and key factors affecting production, ie skills and equipment available

Development opportunities

- Bodyshell and aesthetics
- Braking
- Steering

Practical Starting Points

- Pupils dismantling donor bikes and identifying needed parts
- Production of front wishbone assemblies to drawings and using jigs if desired, a good 1 day event will see all this done
- Identify steering design and production method
- Manufacture integral braking system
- Identify driver packaging and safety requirements
- Body style decisions and production

All the above can occur concurrently with a team of 6 persons

Keep abreast of progress with reminders of milestones

Common for problems

Project management, difficulty of contacting school based staff, pupil retention, keeping the designs realistic with the available resources, keeping the project school focused, making sure school and parent commit to Race Event.

Support

Rob Austin at Engineering your Future is available to support all aspects of the project remotely or on-site concurrently with planned visits or independently.

rob@formulaschools.com

01869 819582

0788 4186 172