

Cars Maths in Motion at Chatham House Grammar School for Boys

Background:

Chatham House Grammar School for Boys received Specialist School Status for Mathematics, Science and Computing in September 2004, and as part of the Maths Department contribution to promoting the subject more widely within our school and the partnership schools, we enrolled for the Jaguar Cars - Maths in Motion Challenge for Schools in January 2005.

Our first attempts at racing:

After attending one half day of training, the competition was opened up to Years 8 to 10 at Chatham House Grammar School for Boys, and an initial group of 18 boys took part in our first race – I took part too, and won ... but I didn't tell them that it was the race we had used at the training day!

We completed about another 10 races over the next three months, and entered teams for the national race in March 2005 for both Key Stages 3 and 4. Surprisingly, both teams went forward to the regional final in May 2005 and then, rather amazingly, the Key Stage 3 team won through to the national final. This race was held at Jaguar Cars in West Bromwich in late June, and was a wonderful opportunity for the two boys to represent the school. A very close finish saw them win through as Key Stage 3 national champions – a quite remarkable end to a fast and furious four months of racing.

The 2005/6 school year:

This school year has seen a dedicated group of 16 pupils race weekly since October 2005, and we have just submitted our Key Stage 3 and 4 cars for the first round of the 05/06 competition. But Maths in Motion has meant a great deal more to us at Chatham House Grammar School for Boys than just becoming National Champions at the first attempt. I will now try and outline some of the tangible benefits as I perceive them, after a brief description of our own in-house championship and how we run Maths in Motion on a weekly basis.

Chatham House Grammar School for Boys:

Chatham House Grammar School for Boys is a grammar school situated in Ramsgate, Kent with a school population of about 750 students (Years 7 – 11 boys, mixed sixth form). Our pupils are drawn from a diverse range of social backgrounds, and from a wide geographical area. As a mathematics department, we do not (currently) have a dedicated computing room, and until we do (September 2006) Maths in Motion has to be organised as an after-school club, rather than being incorporated into our day-to-day schemes of work. This has meant that, so far, only a relatively small group of pupils who are able to remain after the end of the school day have been fully and consistently racing, although there is a wide interest base on which we will build during the next school year.

Practical Administration of Racing:

The pupils split themselves into teams of two (preferably from the same Key Stage!), and we have followed, on a weekly basis, the actual Formula 1 order of circuits and the number of laps raced. Teams are given the track plan one week in advance to analyse, and then have until 4.30 p.m. on race day to have their cars set-up, qualified, fuelled and ready to race. After the race they are able to print out their own performance results to analyse (and argue over!). Points are awarded to individual drivers and to 'constructor' teams using the standard Formula 1 scoring system: 10, 8, 6, 5, 4, 3, 2, 1. The day after the race, results and cumulative points scores are published on the school website (www.chathamhouse.kent.sch.uk) and on my classroom door. At the end of our current 20-race season (2nd May 2006) we will award trophies to the top three drivers, and to the best constructor team.

This year's racers have been very keen to attend every race – even rescheduling trips to the dentist and after school detentions to be present!

Outcomes observed so far:

- Solving mathematical problems using geometry, percentages, scales; developing an understanding of optimisation problems; consideration of probabilities and time calculations.
- Developing skills of teamwork and strategic planning, especially with pit-stop calculations.
- Reviewing race results and interpreting graphs to improve future performance.
- Good competition spirit and camaraderie between teams and across age groups.
- Older and more experienced drivers helping younger and/or less experienced teams.

The future for Maths in Motion at Chatham House Grammar School for Boys:

- Widen the use of Maths in Motion within the mathematics curriculum using the new, dedicated IT facilities.
- Develop new Key Stage 3 racing teams from Years 7 to 9 that will race during the school day.
- Experienced pupils, who will then be in the sixth form, to help run next year's racing season whilst still racing themselves. They are quite insistent that they want to keep racing too
- Develop the use of the software in partnership schools more effectively.
- Encourage pupils to design their own circuits, and introduce more variables into our weekly racing.

Conclusion:

In the fifteen months that we have been involved with the Maths in Motion project I have been amazed at the way in which the pupils have been so motivated and persistent in racing – particularly as everything we have done has been in their free time! They have chosen to be involved, and remain involved, when they could have gone home, or been elsewhere. Sometimes it is difficult to fully assess the outcomes of such an activity, but clearly it has been a very worthwhile one for us at Chatham House Grammar School for Boys, and I trust that it will continue here in an expanded format over the next few years.

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